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2017 Nature Awareness Study

Population survey on nature and biological diversity

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Forewords

Dear Reader

Every two years, the nature awareness study confirms how important nature and biological diversity are to people. Our current study from 2017 once again shows: For people in Germany, nature conservation is an important societal task. They expect politics to take a stand on this. This is especially apparent in the new special focus on marine conservation.

Respondents are very aware of the threats to the seas. In their view, the primary concerns include plastic waste (96 percent), as well as the loss of marine plant and animal species (94 percent). In autumn 2017, the Federal Government established six large nature conservation areas in the North Sea and the Baltic Sea. 94 percent of respondents approved of this. One in two people even consider these areas to be “very important”.

Our oceans must also be protected from overfishing and damaging fishing practices. Our study shows that the majority of the population is aware of this topic: Nine out of ten respondents have a pronounced awareness of the problem concerning the subject of overfishing. Citizens are also clearly in favour of designing fishing industry policies to be environmentally friendly. 92 percent would like to be able to rely on the fact that there is no trade in fish products from endangered species. 90 percent wish that products from environmentally friendly fishing are specially marked. 83 percent of respondents were not only prepared to accept more stringent laws, but also higher fish prices in order to increase nature conservation in the fishing industry.

In addition to marine conservation, the 2017 Nature Awareness Study also deals with other significant issues, for example the use of genetic engineering in agriculture. A significant majority of Germans are sceptical in this regard: 79 percent of respondents do not approve of any use of genetic engineering in agriculture. In fact, from 2012 onwards genetically engineered plants have no longer been cultivated in Germany. As Federal Minister for the Environment, I am committed to ensuring that this remains the case in the future.

Continuing to make citizens aware of the need to protect biodiversity is important to me. The Nature Awareness Study plays an important role in this. I wish you a stimulating read!

Svenja Schulze
Federal Minister for the Environment,
Nature Conservation and Nuclear Safety

Dear Reader

We live in a globalised world where cohesion and international cooperation are indispensable: For example, the Agenda 2030, enacted in New York 2015, put forward new forms of cohabitation and called for greater global cooperation with its 17 primary targets, the so-called Sustainable Development Goals. For the first time, this Nature Awareness Study 2017 includes questions on nature conservation and nature-related issues at global and regional levels, the results of which provide exciting findings that impact politics and society. Because the data shows: respondents see the need, but also the opportunity to work towards nature conservation, especially at global level. Thus 82 percent of the German population is convinced that together, mankind can do something to protect nature on earth. If we act in accordance with this conviction, we can make substantial progress in nature conservation, especially in the age of globalisation, where progress and networking have become indispensable.

Despite all its international relevance, however, nature conservation at regional level continues to play an important role. This is because it is only by being active locally that we can have an overall global effect and achieve added value. The present study shows that locally, nature is an essential aspect of regional identification: 57 percent of respondents “completely” or at least “somewhat” agree with this.

I still consider it urgently necessary to develop a communication strategy for nature conservation work in Germany differentiated according to individual target groups: this is because, as in the previous studies, the attitudes and behavioural intentions this year reveal a distinct gap between socially weak and socially strong milieus. Again I would like to warn against speaking in black and white terms, however! Although socially elevated groups express a higher level of nature awareness, in fact, these groups also consume the most resources (for example with regard to energy or mobility). Although people in socially weaker positions do not express such pronounced nature awareness, they also effectively consume fewer natural resources.

I am not only concerned about overcoming the social divide, however, but also about bridging the generation gap in nature awareness, which the present study again brings to light: In order to activate the younger generation, who will be responsible for nature conservation issues in the future, more strongly, we must engage in closer dialogue with young adults and integrate their interests and ideas into the political discourse.

I hope you enjoy reading the Nature Awareness Study 2017, Sincerely

Beate Jessel
President of the Federal Agency of Nature Conservation

Key statements and recommendations

Marine nature – a topic of nature awareness that is highly relevant

Key statements:

- Plastic waste ranked number one among perceived causes of threat to the seas. 78 percent of respondents regard it as a "very significant problem", while an additional 18 percent regard it as a "significant problem". Oil pollution (very significant problem: 71 percent) and radioactive waste (66 percent) came in a close second and third.
- A majority of respondents (56 percent) completely agree with the statement that more marine conservation areas should be established in order to protect nature, while 37 percent somewhat agree. Thus, the designation of marine conservation areas is generally widely accepted by the population.
- A vast majority of 94 percent of respondents support the establishment of nature conservation areas in North Sea and Baltic Sea, and 53 percent even consider such areas to be "very important".
- 92 percent of respondents would like to be able to rely on the fact that there is no trade in fish products from endangered species, and 90 percent support labelling fish products from environmentally friendly fishing.
- 83 percent of respondents support stronger regulations and laws in order to make the fishing industry more sustainable and eco-friendly, even if this would raise the price of fish.
- 77 percent of respondents believe that the state should provide financial support to the fishing industry so that it does more for marine conservation, even if this costs tax money.

Recommendations:

The 2017 Nature Awareness Study very clearly shows that the population of Germany places a great deal of importance on the protection and sustainable exploitation of the seas, and that it is very sensitive to the risks of such habitats due to waste and pollutant inputs. In addition, it classifies the loss of marine plant and animal species as a major problem. This support among the population reinforces national and international policies aimed at protecting and significantly **improving the conservation status of marine species and habitats** (inter alia, National Strategy on Biological Diversity, Marine Strategy Framework Directive, and Fauna-Flora-Habitat Directive of the European Union). Policymakers can and should use this positive attitude of the population towards marine conservation to vigorously implement and, if necessary, expand the necessary and partially already existing objectives and international agreements via existing policy instruments in order to carry out the will of the population.

The same applies to the **effective management of marine conservation areas**. The major support among the population for the existing conservation areas corresponds to the objectives of the Federal Environment Ministry (see Nature Conservation Campaign 2020). Against this backdrop, policymakers should continue to advocate the effective management of marine conservation areas in the interests of nature conservation. This means that to protect the species and habitats in the North Sea and Baltic Sea, the existing exploitation must be sustainably operated and must be in line with the conservation objectives.

The overexploitation of the oceans by the fishing industry is very much anchored in the consciousness of the German population. Thus, the results of the study show that the population endorses a combination of different policy instruments in order to enable the protection and sustainable exploitation of fish stocks in the seas. They do not shy away from the use of financial resources and rising fish prices if the quality is good: On the one hand, a **great deal of support for stringent regulations towards a sustainable fishing industry** has been noted. As such, the population would also be supportive if the known and necessary measures were implemented in marine conservation policy, including the necessary requirements and prohibitions. This would also provide citizens with better options and frameworks that would simplify their everyday consumer behaviour.

In addition, state-funded assistance for the development of sustainable and eco-friendly fishing is also clearly supported: Political and regulatory players in the field of conservation and representatives from the fishing industry should take this opportunity to conduct an open dialogue regarding the optimisation and sustainability of common fishing practices in order to develop an environmentally friendly consumer chain, from the catch, processing, to the sale, hand in hand with one another.

An important element in both approaches could be anchoring the issue of fish consumption in the Federal Government's sustainable consumption action plan more significantly than has been the case in the past.

The significant public interest in further information regarding sustainable fish products should be addressed more closely by means of **target group-specific information services**.

Energy transition; there continues to be a high level of agreement among the population

Key statement:

- In 2017, the Germans still largely support the energy transition. 61 percent of respondents think it is right, 30 percent are undecided and only seven percent are against it.

Recommendation:

In 2017, most people in Germany still support the energy revolution. The Federal Government can therefore continue to count on the support of the population for this major societal project. It is important that aspects of nature conservation are adequately considered, however: the use of inner-city or other developed areas, for example through photovoltaics, should be promoted more intensively, in order to provide leeway for choosing the correct location in the open landscape, including from the perspective of nature conservation. This is because avoiding negative changes in our landscape plays an essential role in furthering the acceptance of the energy revolution.

Agro-genetic engineering; what is the opinion of people in Germany regarding genetically engineered organisms in our agricultural landscapes?

Key statements:

- 79 percent of respondents are in favour of a ban on genetic engineering in agriculture. Only 13 percent consider such a prohibition to be “somewhat unimportant”, while two percent find it “completely unimportant”.
- 93 percent of respondents are of the opinion that the possible impact on nature must always be investigated when plants are genetically engineered. 70 percent even “completely” agree with this opinion.
- 31 percent of respondents say that they consider eating genetically engineered foods to be no problem or a somewhat insignificant problem.
- 93 percent of respondents are in favour of industry having to label food from animals that have been fed genetically engineered feed.

Recommendations:

As in the past studies, in this most recent nature awareness study as well, the **high degree of reservation among the population towards genetically engineered organisms** in agriculture is obvious. This critical attitude among the population supports efforts by the Federal Government to maintain the freedom of choice over the cultivation of genetically engineered organisms even with EU-wide approvals and to prohibit their cultivation in Germany. One right of the European Union allows member states to adopt national cultivation bans, however this EU directive must still be implemented as national law: The Policymakers responsible can utilise public understanding as a strong argument to vigorously pursue corresponding efforts.

The results of the 2017 Nature Awareness Study indicate that the population sees a **high responsibility to protect the environment**. This is particularly evident in the statement that more than two-thirds of respondents are thus very clearly in the favour of specifically investigating any possible impact of genetically engineered plants on nature. It is therefore appropriate for policy that an **environmental risk assessment** also be carried out for newly modified plants within the

framework of an approval, and moreover, that there is greater investment in research programs than has previously been the case, which then investigate the possible impact on the environment of plants that were bred with the help of classical genetic engineering and other new techniques. In particular, complex and long-term relationships in ecosystems have thus far been insufficiently researched and should therefore be made the focus of consideration.

Fundamentally: with regard to agro-genetic engineering, politics has the task of advancing and ensuring a social discourse that is factually informed. In addition, it is important to take the **ethical concerns of the population** seriously. In addition to the indirect effects (for example, of modified cultivation management) on nature and the environment, sociological and economic aspects must be taken into consideration: What are the advantages and disadvantages of agro-genetic engineering and new breeding techniques for society? Who benefits from these technologies? Who bears the burdens? **Transparency and freedom of choice** are the key words in this context: By way of example, respondents really want foods from animals that have been fed with genetically modified fodder, be labelled in the shops. In order not to shake the consumer confidence, such needs must be taken seriously not only politically, but also by the agricultural economy and trade. Voluntary "no genetic engineering" labelling in commerce is the first step towards greater transparency.

Comparison of nature conservation in a global and regional context[1]

Key statements:

- 68 percent of respondents believe that the identity of mankind is essentially shaped by nature.
- 57 percent of respondents are of the opinion that the identity of a region is essentially shaped by local nature.
- 79 percent of respondents find the way in which we, on earth, treat nature to be extremely problematic. The German population is much less concerned about dealing with nature in the region: only 39 percent of respondents see problems here.
- The fact that global nature conservation has a high personal priority is affirmed by 34 percent of respondents. On the other hand, it should be noted that only 26 percent of respondents indicated this with regard to nature in the region.
- 82 percent of respondents believe that "we as human beings" can do something together to protect nature around the world, compared to just 67 percent in the local context.
- The effectiveness of personal action is rated slightly higher on a global level than at the local level. 42 percent of respondents believe that people are personally able to do something to protect global nature; in the regional context however, only 37 percent concur with this.

Recommendations:

Not only the current communication regarding nature conservation, but also established research into environmental psychology have hitherto regarded nature conservation behaviour primarily as a process which manifests at the personal, individual level, and which must be fostered at these levels as well. However, the fact that nature conservation is also a **collective phenomenon** can be seen when one considers the limitations of personal scope for action within the context of global ecological crises. The current nature awareness study also aims to uncover this blind spot of nature conservation communication. As an example, half of all respondents were asked various questions concerning attitude within a regional context, and then again, within a global context.

Interestingly, the results suggest that **attitudes towards conservation are expressed much more strongly in a global and therefore, more collective, context than in a regional context**. These findings will be further processed and published in subsequent publications until the beginning of 2019, in order to lay the foundations for an in-depth study of nature awareness. This should enable nature conservation communication to be more effective in future.

Biological diversity – knowledge, attitudes and willingness to act

Key statements:

- One in four Germans (25 percent) has a high level of awareness of biological diversity.
- The awareness of biological diversity is not evenly distributed among the population, however. The percentage of those who are aware is much higher among those with high educational qualifications (32 percent) than in the average population, as compared with those under 30 (21 percent) and formally low educated (21 percent), which are below average.
- 20 percent of Germans have never heard of the term biodiversity. 38 percent have heard of it, but do not know what biological diversity means.
- The percentage of those who are "very convinced" of decline in biological diversity has increased by ten percentage points in the past two years (2015: 26 percent, 2017: 36 percent).
- 71 percent of respondents agree with the statement that the preservation of biological diversity is a top priority task for the whole of society (unreservedly with "yes": 31 percent, with "somewhat yes": 40 percent).
- 53 percent of respondents claim that they feel personally responsible for the preservation of biological diversity, while 45 percent do not feel any such obligation.

Recommendations:

As in previous studies, the current nature awareness study again brings **high approval rates for the protection of biological diversity** to light. Nevertheless, significant differences in societal awareness can be observed when individual socio-demographic groups and social milieus are considered and compared. The following trends can be observed across many content-related topics of the study, but they are very clear within the context of biological diversity: It appears that the survey segment comprised of young adults sometimes has significantly weaker positive attitudes and nature protection beliefs than those of older groups of people. Furthermore, socially well-off milieus have a more pronounced awareness of biological diversity than milieus with more difficult social conditions. Based on this situation, the following recommendations for action are given:

First, the focus should be placed on a **target group-specific orientation of nature conservation communication for the upper social milieus**: This group of individuals is characterized by the high level of consumption on the one hand, and at the same time insight into their own responsibility to protect the biological diversity, which simultaneously sets the working direction. Due to the greater individual design options, the activities and willingness to act for the protection of biological diversity in these groups should be increasingly promoted and also demanded. In particular, a well-thought-out transfer of values is encouraged in order to deepen the processes of self-reflection or, respectively, in order to convert the disconnect between attitude and action into a process of deliberate confrontation. The promotion of dealing with the topic of "social justice" should also be mentioned in this context; after all, it is the leading milieus, with their social creative power, that can and must establish social justice in society. This is not to be expected of socially disadvantaged milieus.

Secondly, a stronger **target group-specific orientation in nature conservation measures and communication work for socio-economically disadvantaged groups that are not as in-touch with nature** should be encouraged: The experience of nature often remains largely foreign and closed to population groups that are disadvantaged in terms of income and education, so that they are unable to benefit from such experience. For this group of people, a commitment to protect biodiversity can only be associated with a greater awareness of the practical and ideal value ('good life') of nature. In order to get to the bottom of the findings on the supposedly less pronounced nature awareness of younger adults, a separate study concerning nature awareness among young people is already being planned.

1 Introduction

The present study is based on a nationwide representative survey on nature awareness in Germany, which took place in the autumn of 2017. Nature awareness studies have been conducted and published every two years since 2009 on behalf of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and the Federal Agency for Nature Conservation (BfN).

The fundamental task of the nature awareness study is to assess social attitudes towards nature and biological diversity. The study provides up-to-date and empirically verified data, which are valuable foundations for nature conservation policy, public discourse and educational work.

The population of this study is the German-speaking resident population 18 years of age and older. For the survey, 2,065 people were interviewed in Computer Assisted Personal Interviews (CAPI). The study was designed by Dr Christoph Schleer from SINUS Market and Social Research GmbH, Dr habil. Fritz Reusswig of the Potsdam Institute for Climate Impact Research (PIK), Prof. Dr Immo Fritsche from the University of Leipzig and the specialist support of the BMU and BfN. The data collection was carried out by Ipsos GmbH. When interpreting the data, the project team was advised by a working group of experts, including: Dr Uta Eser (Büro für Umweltethik, Tübingen), Prof. Dr Ulrich Gebhard (University of Hamburg), Dr Christa Henze (University of Duisburg-Essen), Prof. Dr Michael Kurschilgen (Technical University of Munich), Prof. Dr Jörg Lindenmeier (University of Freiburg) and Katrin Wollny-Goerke (Meeresmedien, Hamburg).

More detailed analyses of the survey results are carried out in a more in-depth scientific report. This report is due to be published in early 2019. As with the previous nature awareness studies, the data set with all survey results will be made available to the scientific research community as an SPSS file via the data archive for the social sciences at the GESIS Leibniz Institute upon completion of the research project.

This brochure as well as the previous studies and the respective in-depth reports can be downloaded from the BfN website (www.bfn.de/naturbewusstsein.html). The basic data brochure is available in English at www.bfn.de/nature-awareness-study.html in the autumn of 2018.

1.1 Objectives and concept

The nature awareness study is an instrument for monitoring the social awareness of nature, nature conservation and biological diversity. The surveys of nature awareness are anchored as a concrete goal of action in the “National Strategy on Biological Diversity” (NBS). The study provides the data needed to calculate the indicator on the “importance of environmental objectives and tasks” set forth in NBS reporting requirements, (the so-called “societal indicator”). In addition, sound advice and strategies for nature conservation policy, general and target group-specific nature conservation communication and educational work are to be derived based on the findings and against the background of a wide range of scientific findings (including environmental psychology, sociology, communication sciences).

In order to uncover trends in the nature awareness of the population, a basic set of consistent questions is retained in every nature awareness study. In addition, each study takes up new topics that make it possible to link up with current discussions and areas of nature conservation policy.

The guiding topic of the 2017 Nature Awareness Study is “marine conservation”:

the oceans and therefore the diversified habitats of thousands of plant and animal species are threatened as a result of overfishing and pollution load, shipping and extraction of natural resources, plastic waste and tourism. However: What about society’s awareness of the threat to marine nature? The present study presents results on which of the many ecological problems of the oceans the German population assesses as particularly urgent. More precisely: what does the population see as the main threats to the seas? What are its thoughts on marine conservation? What does it say regarding the establishment of marine conservation areas? And to what extent is it willing to contribute to marine conservation itself?

In addition to the guiding topic of marine conservation, the 2017 Nature Awareness Study will also cover the topic of "nature conservation at a regional and global level" for the first time. The question is raised: does it make a difference whether Germans think of nature in the region or of nature on earth in general: What causes greater concern for Germans: how to deal with nature in one's own region or how to deal with nature worldwide? How important is regional nature conservation and how important is global nature conservation? And what are they willing to do personally?

The topics of "social awareness of biological diversity", "attitudes towards genetic engineering" and "acceptance of the energy revolution" from the previous studies are continued and have been updated.

The range of topics on biological diversity is an integral part of every Nature Awareness Study. The study measures the social awareness of the importance of biological diversity and thus the so-called "social indicator" of the National Strategy on biological diversity (NBS) based on questions pertaining to knowledge, attitude and behaviour. The attitudes of the population to genetic engineering in agriculture were already queried in 2009 and 2013. In 2015, further questions were raised which, for the first time, explore the causes of the high degree of social rejection of genetic engineering observed since the measuring began. The current nature awareness study builds on this by repeating some questions from 2015 and adding new ones. The question of the social acceptance of the energy revolution was included in the questionnaire of the nature awareness study in 2011, and has been continued since.

1.2 Introduction to the Sinus-Milieus

Since 2009, the socio-cultural approach of the social model of the Sinus-Milieus has been integrated into the research design of the Nature Awareness Study. By considering the milieus, the socio-demographic analysis is supplemented by lifestyle and value components.

The evaluation of the data set according to different social milieus is based on the insight that socio-demographic characteristics such as age, gender and school education are insufficient to explain individual attitudes, patterns of action and approaches to nature. How people experience, use and value nature depends at least as much on their lifestyles and value orientations.

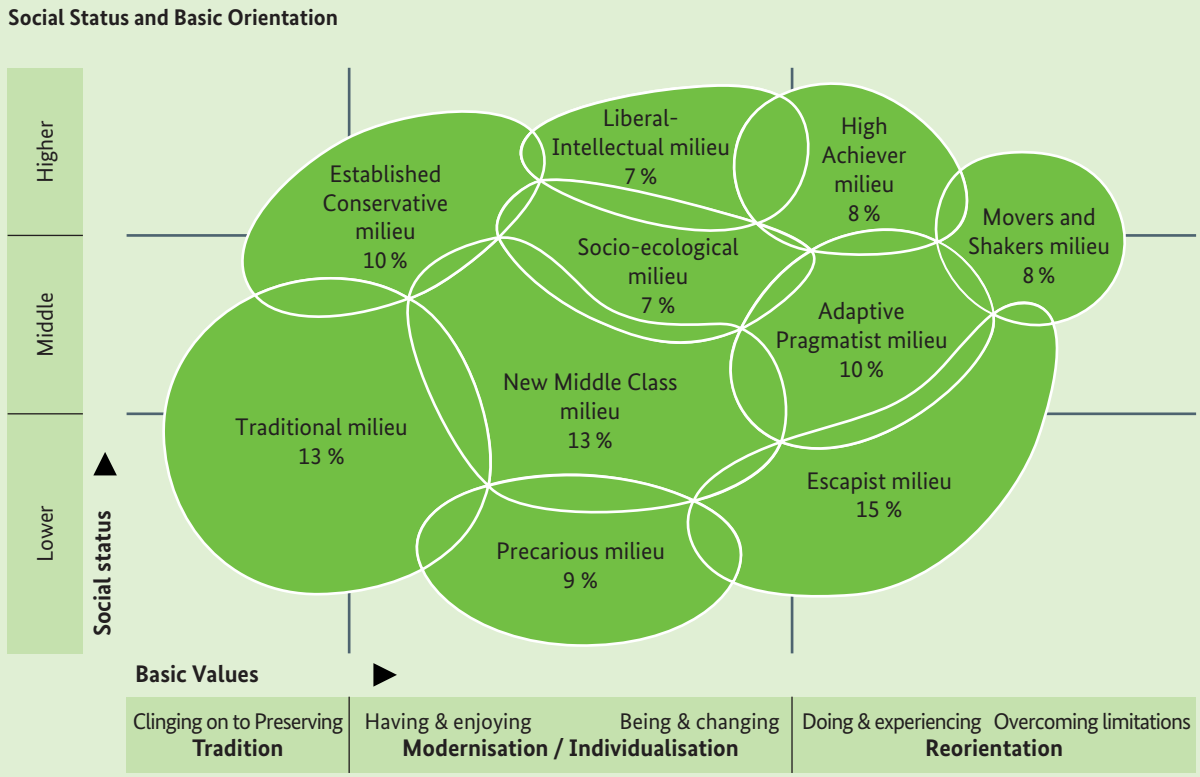
The Sinus-Milieus are a scientifically sound target group model which is based on the lifeworld analysis of our society. Unlike traditional stratification and lifestyle models, it is a socio-cultural classification. Basic values that determine lifestyle and life goals are considered, as well as attitudes in everyday life, such as work, family, leisure and consumption. Sinus-Milieus do not refer to partial aspects of everyday reality, as does the usual lifestyle typology, but instead bring the human being and the entire frame of reference of his lifeworld holistically into focus.[2]

By integrating the Sinus-Milieu indicator[3] into the design of the nature awareness study questionnaire, the members of the various milieus can be quantitatively mapped to the adult population. It shows that the individual lifeworlds represent very different proportions of the population (see Figure 1).

The Sinus-Model for Germany 2017 consists of ten different lifeworlds. The milieus are situated in a plane that is spanned by two axes; the basic socio-cultural orientation, and the social situation. The higher a milieu is located in this graph, the more upscale its social class (in terms of characteristics such as education, income, occupational group)[4]; the further to the right it is situated, the more modern in socio-cultural sense is its basic orientation. The boundaries between the milieus are fluid, however. It is in the nature of social reality that lifeworlds cannot be restricted as (supposedly) precisely – according to income or educational level obtained for example, as social classes. SINUS calls this the uncertainty principle of everyday reality. This is a fundamental part of the milieu concept: there are points of contact and transitions between the different milieus. Otherwise, it would not be possible to speak of a life-like model.

The short profiles of the Sinus milieus and nature awareness in the lifeworlds are presented below.

Figure 1: The Sinus-Milieus in Germany 2017



Up-market milieus

The Established Conservative milieu represents the classic establishment. The preservation of proven traditions and ways of life is a central concern of the members of the milieu. On the other hand, they reject postmodern arbitrariness and a hedonistic experience orientation. The self-image of those in the Established Conservative milieu is that of a responsible social elite. Achievement coupled with the postulate of individual responsibility is its guiding credo. They are very interested in society, politics and the church, are relatively strongly socially engaged and demand a say in decision-making. Many claim social opinion leadership.

In the Established Conservative milieu, nature is associated with creation. Nature is valued because it is fundamental to human existence. Nature as a cultural asset fulfils an important function for those in the Established Conservative milieu, as well as a possibility for identification with one's own home. Many members of this milieu are concerned about the loss of biodiversity, especially if native species and traditional cultural landscapes are the focus, as a piece of history and culture is to be lost. Since their self-image corresponds to that of a responsible social elite, they see it as a duty and a virtue to leave an intact nature to future generations. They are thereby willing to lead the way to set a good example.

Socio-demographic characteristics:

- Milieu of the middle-aged to advanced aged: Age concentration over 50 years of age, average: 54 years of age.
- Average to higher education levels.
- Very often married; children who often do not live at home any more.
- Senior and qualified employees, senior civil servants; well situated, higher income.

The Liberal-Intellectual milieu is the enlightened educated elite with a liberal, cosmopolitan attitude, post-material roots and the desire for a self-determined life. The world view of this mostly well-situated milieu is based on global thinking and distanced from ideologies of any kind. It perceives the increase in complexity in a global world as a challenge and affirms cultural pluralism. What is typical is the need for intellectual stimulation through art, music or culture. Liberal Intellectuals accept competitive society, but also perceive themselves as having a duty to seek a better and more just world.

Nature plays an important role in life for Liberal Intellectuals. Above all, it serves to compensate for the demanding daily work routine. A conscious stay in nature helps them to find a work-life balance; the right balance between work, private life and relaxation. Due to their proximity to nature and their knowledge of the hazards posed to nature, they are sensitized to the protection of nature and the environment to a high degree. They are aware that man is dependent on nature and that damage to nature also affects humans. So they know about the decline of the biological diversity and are willing to take responsibility for the preservation of nature.

Socio-demographic characteristics:

- Middle age groups: Age concentration 40 to 60 years of age, average: 51 years of age.
- High level of formal education; highest percentage of academic degrees in a milieu comparison.
- Often married; with children in the household.
- Disproportionately often fully employed; above-average number of self-employed, also many qualified and senior employees; high net household income.

The High Achievers have a competitive attitude in all areas of life (job, leisure, sport). They want to meet challenges and be among the best. The world view of the High Achievers is shaped by neoliberal convictions; they focus on efficiency orientation, global thinking, cosmopolitan lifestyle, market freedom and deregulation. Their concept of achievement is consistently individualized, their confidence in themselves is high. The members of this milieu have a doer-mentality, and see themselves as smart, dynamic and visionary. The new media are naturally integrated into everyday life. There is a distancing from comfort, contentment on principle, dogmas and ideologies.

High Achievers have a rational rather than an emotional relationship to nature. Of all the milieus, they visit inner-city nature attractions the least often. When it comes to the market value of land and buildings, however, the percentage of those who rate nature in the city as a particularly relevant factor is greatest in the lifeworld of the High Achievers. Economic growth is seen as a prerequisite for more nature conservation. In this world view, sustainability is above all compatible where it is associated with new technology, high quality and efficiency: Principles of sustainability and green innovations are welcomed when they bring with them a direct benefit (including profitability, health, enjoyment).

Socio-demographic characteristics:

- Age concentration 30 to 50 years of age; average: 43 years of age.
- Men are slightly over-represented.
- There is a high percentage of couples both with and without marriage certificate; frequently have (younger) children.
- Frequently have higher educational qualifications.
- Highest percentage of full-time employees in a milieu comparison; many work in qualified and senior positions; high net household income.

The Movers and Shakers is a very new milieu that views itself as a postmodern avant garde. Members of this milieu reject external constraints, traditional roles and routines. They are fleeing the mainstream. Contentment, small-mindedness, bourgeois conventions and ideological corsets are not their thing. Rather, members of this milieu want to break boundaries and experience new things. Many of those in the Movers and Shakers milieu have unconventional careers (for example in the creative industry) and patchwork biographies. In search of movement, innovation and inspiration, they lead a mentally and geographically mobile life, preferably in urban niches.

In the Movers and Shakers milieu, a strong attachment to nature is rather rare. Instead, their attention is focused on their own creative self-development, career advancement and networking with like-minded people. Nevertheless, nature is valued, especially the wild and untamed nature that one often encounters when travelling to distant lands. Although this young, educated and very mobile milieu does not cultivate a sustainable lifestyle, it is certainly sensitized to nature conservation. Many are willing to find out about biodiversity and its conservation and tell friends about it. As long as they are not required to cut back on their own demands, they are not averse to a “greener” lifestyle.

Socio-demographic characteristics:

- Youngest milieu: nearly two-thirds are under 30 years of age; average: 31 years of age.
- Many are singles without their own children; many still live in their parents’ household.
- High level of formal education: An above average number have the German university entrance qualification.
- Above average percentage of pupils, students and apprentices; many have never yet been in employment; above-average household income (well-off parents); the personal income is (still) in the lower range.

Middle-class milieus

The New Middle Class milieu represents the down-to-earth mainstream of society. Those in this milieu strive for a harmonious life in orderly conditions. The centre of life is family and involvement in the local world with a dense network of friends, neighbours and relatives. Many members of this milieu are bothered by the fear of social decline, as well as the fear of no longer being able to get along technologically, socially and financially, and of not meeting the demands of a globalised economy in the long term. Their self-image is that of being at the centre of society. They see themselves as the "average consumer" and the backbone of the society.

For the New Middle Class, nature is part of life. It is valued above all as a source of raw materials for industry, as a basis for food production and as a family travel destination. For the members of the New Middle Class, the protection of nature is indeed important and there is a basic level of sensitization, but nature conservation is not the most pressing issue. The New Middle Class sees the responsibility for nature conservation as belonging more to politics than the citizen. Conservation issues become interesting above all when benefits such as health, safety and financial savings are added, and when these benefits have become a trend in the mainstream.

Socio-demographic characteristics:

- Middle-age group and older people over 40 years of age; average: 56 years of age.
- Low and average level of education; low percentage of university graduates.
- High percentage of married people in the milieu comparison with children; often have older children in the household, but also includes "empty nesters".
- Slightly over-represented in the eastern German federal states.
- Mostly employed; basic/mid-range employees, skilled workers; many are already retired; middle income brackets.

The Adaptive Pragmatist milieu embodies the well-educated, partially over-adapted, purposeful and unideological young middle-class society. Typical of this milieu is a balancing act between achievement and a family orientation, between the need for experience and security, and between autonomy and rootedness. As such, they demonstrate a highly functional, utilitarian way of thinking, are benefit-oriented rather than risk-oriented, and identify with the meritocracy and competitive society. Extreme is not of interest to those in the Adaptive Pragmatist milieu. Although they want to make life as comfortable as possible and can afford what they like, they remain flexible and realistic.

The young, modern core of the Adaptive Pragmatist milieu has a benefit-oriented approach to nature. Nature primarily means health and recovery for them and they like to relax with their family in nature. Inner-city nature is especially valued. Against the background of their pragmatic attitude and their desire to make life as uncomplicated as possible, they tend to prefer inner-city nature to a (in their view, rather time-consuming) trip to the countryside. The pragmatism typical of this milieu is also reflected in their environmental behaviour. Although they see nature conservation as a duty of society, they see themselves as less responsible, since they see the significant of their own contribution as low.

Socio-demographic characteristics:

- Women are slightly over-represented.
- Age concentration under 50 years of age; average: 40 years of age.
- Frequently married or living with a partner, often without children or with small children.
- Intermediate to advanced level of education (Mittlere Reife: high school diploma/O levels; Abitur: university entrance qualification) or still in education.
- Basic, mid-level and skilled employees; above-average number of full-time or part-time employees or still in education; middle to high income brackets (frequently double earners).

Scepticism about growth and globalization are firmly anchored in the **Socio-ecological milieu**. Idealism and a sense of mission dominate in the world view of those in the Socio-ecological milieu. Many see themselves as the conscience of society, the bearers of global responsibility, and ruthless critics of maladministration. Their consumer behaviour is bound to the principle of sustainability. In general, efforts are made to achieve a consistently ecological lifestyle in everyday life on topics such as nutrition, housing, energy and mobility, but this milieu is not hostile towards technology per se; for example, it accepts innovative technologies for solving environmental problems.

In the lifeworld of the Socio-ecological milieu, nature has a central meaning. The members of this group try to be in nature as often as possible. Seeing, smelling and feeling nature makes them happy and gives meaning to their lives. In particular, they appreciate the untouched, raw, primordial nature. Its diversity is an end in itself and thus worthy of protection. Those in the Socio-ecological milieu care particularly about the destruction of nature. They do not think just about the benefits to humans. In particular, they also award animals and plants their own right to exist.

Socio-demographic characteristics:

- Wide age range from 30 years of age; average: 52 years of age.
- Mostly married.
- High level of formal education: A third have Abitur (university entrance qualification) or degree course (total: 31 percent).
- Highest percentage of part-time employees in a comparison of milieus; many qualified employees and senior civil servants, including small self-employed and freelance workers; middle income bracket.

Lower middle class / Lower class milieus

The Traditional milieu represents the war and post-war generation which loves security and order. The world view of this milieu is characterized by conformity and traditional moral concepts, as well as hierarchical-authoritarian structures. Often, moral decay and alienation are criticized. Action is guided by modesty and adaptation to needs and there are no lofty goals. Rather, those in this milieu keep to routines, and cultivate rituals and customs. Accordingly, there is a great deal of unease about change and little willingness to engage in something new or unfamiliar.

Even the Traditional milieu can be described as connected to nature. Being in your own garden or taking a walk in the (municipal) forest, nature stands for harmony and tranquillity for this milieu, which promises security and stability in the face of a world that is becoming ever more complex. Its knowledge of the endangerment of nature is limited, however. Those in the Traditional milieu perceive environmental problems first and foremost when these are interpreted as an expression of social divergence. For example, the illegal dumping of trash is often considered to be the epitome of environmental pollution, which runs counter to this milieu's traditional ideas of order rather than the ecosystem.

Socio-demographic characteristics:

- The oldest milieu: Concentration in the age segment of 60+; average: 68 years of age.
- Correspondingly high percentage of women as well as many pensioners and widowed people.
- Mostly low level of formal education (primary school/secondary school).
- Low to moderate income.

The Precarious milieu is the lower social stratum seeking participation and orientation. The pronounced consumption-materialistic wishes of the Precarious milieu ("able to afford something") are counteracted by the struggle to cope with their everyday lives. They must make sure they stay on top of their work demands and their family, keep their job, and not slip (even further) down socially. In this milieu, there is a great yearning for social belonging. Those in this milieu see themselves as disadvantaged by society through no fault of their own, and as victims of global change and political reforms. The experience of deprivation and exclusion often leads to bitterness, but there is very little willingness to protest.

In the lifeworld of the Precarious, nature plays only a subordinate role. From a young age, Precarious have little contact with nature. They hardly think about environmental threats. Far too much of the focus is on their own problems. In any case, they see the state as being responsible, with nature conservation being given political priority comparatively rarely. Certainly, the members of this milieu know from the media that nature conservation is a socially controversial topic. Protecting nature has no everyday relevance given the challenges to those in this milieu, however. A connection between environmental policy and the improvement of one's own quality of life is hardly perceived.

Socio-demographic characteristics:

- Middle age groups and older people, focus in the age cohort of 50+; average: 55 years of age.
- Above average number of single people and widowed; highest percentage of divorced people in a milieu comparison.
- Significantly over-represented in the East German federal states.
- Mostly low level of education (secondary school with or without vocational training).
- More than half are not gainfully employed (pensioners and the unemployed); above-average number of workers or skilled workers; low net household income.

The Escapist milieu is characterized by a strong orientation towards fun and adventure. In the Escapist world view, there is a detached attitude towards the rules and requirements of competitive society. Those in the Escapist milieu are convinced that life has more to offer than just work. They live in the here and now, think as little as possible about the future and go where the wind takes them. Their life strategy is self-centred, they want as few restrictive commitments or stress as possible, and want to get the best for themselves without too much effort. Typical for those in the Escapist milieu is their great love of change, life and experimentation, with little frustration tolerance and willingness to do without.

Of all milieus, the Escapist milieu has the least relation to nature. Nature hardly makes an appearance in their lives and is therefore foreign to them. They think first and foremost about fun and entertainment and find "traditional nature experiences" (including hiking, gardening) to be rather uninteresting by comparison. Whether in or outside of the city, nature is primarily seen as a backdrop for sporting activities: Skateboarding, mountain biking or rock climbing; this is where this milieu gets its money's worth. Those in the Escapist milieu live in the here and now. There is little concern about the endangerment of nature. Environmental policy is perceived more as an imposition or "killjoy".

Socio-demographic characteristics:

- Primarily younger but also middle age groups: Focus up to 40 years; average: 41 years of age.
- High percentage of single persons (with and without partners in the household); one in two has children.
- Low and moderate level of education.
- Often workers or skilled workers; slightly above-average unemployment rate.
- Above average percentage of pupils, students and trainees; low to average income distribution.

1.3 Explanatory notes on this brochure

The survey results of the Nature Awareness Study 2017 are presented in the following chapters. The new topics (Chapter 2: "Marine conservation" and Chapter 5: "Nature conservation at the global and regional levels") are covered in greater detail than those topics already examined and discussed in the previous surveys. To illustrate the findings, pivotal survey results are shown in diagrams and tables. For questions with a multilevel response scale, all answer categories are shown. These are predominantly scales with four-levels: The first two categories indicate the degree of approval (for example "agree strongly" / "agree somewhat"), the last two levels indicate the degree of disapproval ("disagree somewhat" / "don't agree at all"). If applicable, the category "do not know / no answer" is listed. This answer option was not openly available for selection, however, but was only noted by the interviewers if respondents were unable or unwilling to assess a question or statement.

For reasons of readability and comprehensibility, decimal places have been omitted from the stated percentages and the figures rounded up to whole numbers. If the sum of the figures for all the answer categories was more or less than 100 percent, an adjustment of up to 1.4 percentage points was made for the category "do not know / no answer". In very rare cases, this approach was not sufficient so that in addition, the highest value was slightly adjusted.

The data set was examined for differences in the response behaviour of subgroups. The following socio-demographic characteristics of respondents were considered: gender, age (18 to 29 years of age, 30 to 49 years of age, 50 to 65 years of age, 66 years of age and older), formal education (low, medium, high)[5], net household income (up to 999 euros, 1,000 to 1,999 euros, 2,000 to 3,499 euros, starting at 3,500 euros) and BIK size of town (population below 5,000, 5,000 to below 20,000, 20,000 to below 100,000, 100,000 to below 500,000, 500,000 and more)[6]. The sinus milieu indicator was integrated into the questionnaire in order to allow an evaluation by milieu affiliation, as described in Chapter 1.2. Significant differences are explained in the text. In addition, particularly interesting findings were graphically presented in figures or tables.

Established test methods of empirical social research were used in order to test for statistical significance. Differences in the response behaviour of population groups were examined by means of the chi-squared test (see Sedlmeier 2013, Eid 2013 or Janssen and Laatz 2010). This is based on a confidence interval of 95 percent (over or under-represented) and 99 percent (significantly over or under-represented), which is customary for social science purposes. Accordingly, traits are interpreted as over-represented (above average) or under-represented (below average) in the sample if the probability is at least 95 percent (significance level of $p < .05$). Features are considered to be significantly over-represented or significantly under-represented if a probability of 99 percent (significance level of $p < .01$) can be assumed. Over-representation and under-representation are colour coded in the figures and tables,

and explained in the legend.[7] It should be noted that the results of significance tests are also dependent on the size of the group being studied. The larger the group examined (for example, people with a high level of education), the more likely it is to prove the significance of weak over-representations or under-representations (see Janssen and Laatz 2010, page 276). For this reason, in some cases, identical numerical values are shown as being over- or under-represented to varying degrees.

For time series, i.e. questions recurring in each study, parametric (t-tests) and non-parametric test procedures (Mann-Whitney test) were used to test the significance of the temporal change.

The degree of approval of a question as well as the frequency with which a feature occurs in a population group were colour coded as described above, and explained in the legend. In addition, the numbers were colour coded: In the case of over-represented values and approval (for example, “agree strongly” / “agree somewhat”), the numbers are presented in black; for under-represented values and “disagree somewhat” / “don't agree at all” numbers are presented in white. Thus, even with a black and white printout, all colour codings are distinguishable from one another. In the case of the milieu diagrams, the areas of overlap between two milieus are marked in the colour of the milieu that has the higher percentage of the response category that is to be represented.

An overview of the response behaviour of the total sample can be found in the appendix to the statistics.

Prior to the main survey of the 2017 Nature Awareness Study, an experimental pre-test was conducted to examine the extent and expected impact of the tendency towards socially desirable responses in the context of the current nature awareness study. The results will be published in a separate report.

In-depth analyses of the main survey will be presented in the final scientific report. This focuses on selected topics. At www.bfn.de/naturbewusstsein.html, the scientific report as well as the other publications can be downloaded.

2 Marine conservation

With the guiding topic of marine conservation, this Nature Awareness Study addresses a core area of nature conservation that has not been dealt with in depth in previous surveys. There are many good reasons to focus on marine conservation: The sea is the largest habitat on earth. The marine ecosystems play an important role in earth as a system. Life originated in the sea. There is significantly greater biological diversity in the sea than there is on land. More than one million species have been recorded in the world's oceans over the past two centuries. Perhaps a much higher number has not yet been recorded. Oceans are among the most species-rich and, at the same time, the most endangered ecosystems worldwide.

Seas and coasts are very fragile but at the same time intensively used ecosystems. In Germany, the entire North Sea coast and large parts of the Baltic coast are among the "landscapes most worthy of protection" (BfN 2016, page 45). For example, half of the FFH habitat types in the German North Sea identified under European nature conservation legislation are in poor condition (BfN 2016, page 39). The cause for this is the high settlement density on the coasts and the high degree of utilization pressure on marine nature as a whole. In and around the sea there are hardly any areas where no human exploitation takes place or is planned. With approximately 6.9 million inhabitants, 8.3 percent of the German population currently lives in the coastal regions. In addition to fishing and its ancillary effects (for example, by-catch of non-target species or damage to the seabed by ground-breaking fishing gear), maritime energy and raw material extraction plays a central role, for example in the case of sand and gravel mining. In addition, the German coastal regions are important tourist destinations. With 21.8 million people arriving, destinations near the sea in 2016 accounted for approximately 12.7 percent of all arrivals in Germany (see Federal Statistical Office 2017).

Presence in the media plays a decisive role in the social perception of utilization pressure and the resulting threats to marine nature. In addition to topics such as overfishing or contamination with crude oil, the issue of "plastic waste" has increasingly been communicated in the media in recent years. And quite rightly so, because 300 million tons of plastic are produced worldwide every year, approximately two percent of which (about eight million tons) ends up in the sea (Heinrich-Böll-Stiftung 2017, page 18). Much of this is pulverized and decomposes over time. This microplastic (particles of less than five millimetres) is particularly critical because it is ingested by fish and sea birds. The majority of the plastic waste collects on the seabed and only a small portion is washed up onto the beaches. On the German North Sea coast, for example, there are on average approximately 390 pieces of trash on a beach section of 100 metres in length, of which almost 90 percent is plastic. On the Baltic beaches, there are 70 pieces of trash per 100 metres, and 70 percent of that is plastic waste. 94 percent of the northern fulmars found dead within the context of pilot monitoring had plastic particles in their stomachs; according to an ecological quality objective, it should not exceed ten percent (see UBA 2017).

But do people know about the endangerment of the seas? Which of the many ecological problems of the oceans do they consider to be particularly urgent? Before this is discussed in this chapter, the associative space of marine nature will be explored. The first section is therefore devoted to the question of what people understand when they hear the term "marine nature" and subsequently, what they see as the main threats.

The second section is dedicated to the topic of marine conservation areas: Well-managed marine conservation areas are an important tool for marine nature conservation, however setting up concrete protection rules is a formidable political challenge. Trade-offs must be made, compromises made. Although approximately 45 percent of the German marine areas are designated protected areas (43 percent in the North Sea, 51 percent in the Baltic Sea), the associated protection rules are often not far-reaching enough. There are a number of reasons for this, such as the lack of national jurisdictions and the associated need to negotiate EU or international regulations, as well as the economic interests of user groups (including the fishing industry, shipping, energy and raw materials extraction), who see themselves as being excessively limited by regulations. It is all the more important to find out what the population thinks about marine conservation and the establishment of new protected areas.

In addition, it is important to know whether the population also sees marine conservation as a starting point for their own actions, such as in the consumption of fish. Therefore Chapter 2.3 addresses various facets of sustainable fish consumption.

2.1 The sea and its major problems

Initially, respondents were asked to express what they associate with the subject of "marine nature". The nature of the question specified something: By asking about "marine nature" and not about the "sea", a concept was chosen that pre-structured the associative space towards nature. The background for the way in which this question was formulated was the intention of specifically asking participants in the study about aspects relating to nature (and not simply about aspects relating to tourism). In so doing, they were asked to comment freely about which terms spontaneously come to mind on the subject of "marine nature".

In the consciousness of the Germans, marine nature first and foremost refers to a realm for experiences and life.

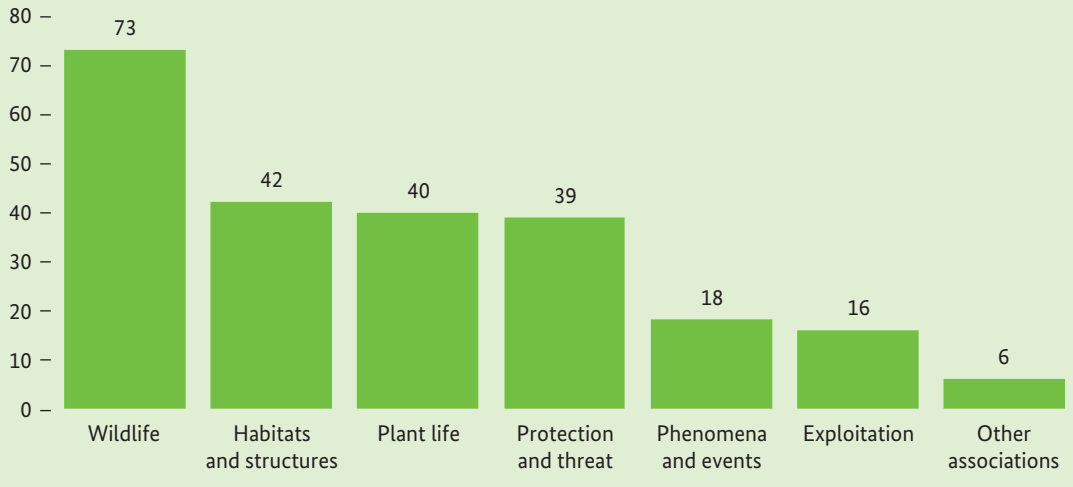
In terms of the answers to the open question, marine life comes first at 73 percent (see Figure 2). As such, people primarily think of fish (47 percent), followed by corals (27 percent), mussels (twelve percent), whales (nine percent), crabs (eight percent) and birds (five percent). For respondents, jellyfish, seals, dolphins and sharks come to mind with equal frequency, with a share of five percent each. Three percent think of plankton,[8] while two percent of respondents think of starfish. Turtles, penguins, octopuses, seahorses, sea urchins, snakes, herrings and polar bears are comparatively rarely mentioned (each at one percent). "Biodiversity in wildlife" is generally also considered on occasion (two percent).[9]

With 42 percent of respondents, maritime habitats and structures came second in terms of spontaneous associations. At 15 percent, sea/ocean or, respectively, water as an element and habitat is thereby mentioned somewhat more frequently than beach and dunes (14 percent), stones and gravel (four percent), islands (three percent) or tidal flats (three percent). Two percent of respondents mentioned cliffs and crags, the seabed and the deep sea each. Equally often, respondents stated that the North Sea and the Baltic Sea sprang to mind (two percent each). Underwater mountains, minerals, rivers / canals / fjords, coasts / shores and ice / icebergs are among the rarer associated terms (each at one percent).

The third most commonly association with marine nature is marine plant life (40 percent). Algae and seaweed are mentioned almost exclusively here. One percent of respondents refer to "biodiversity in plant life".

Figure 2: Associations with marine nature, items mentioned sorted by category

I would like to know what spontaneously comes to mind regarding the topic of marine nature. What does marine nature mean to you? Please list as many terms as you can think of.



Data in percent

More than a third of respondents spontaneously think of the endangerment of marine nature.

Protection and endangerment are ranked in fourth place, with 39 percent of the associations. Foremost among these is the contamination of the seas with (plastic) waste (eleven percent) and "clean water" or "clean seas" (eleven percent). Six percent of respondents think of overfishing, and five percent think of oil pollution. Within this context, "healthy animals and plants" (three percent), as well as diversity of species/biodiversity (three percent) also spring to respondents' minds. Equally frequent reference is made to decline in species and the decline in the fish population (three percent each). In each case, two percent of respondents think of the discharge of polluted waste water, the ecological balance and the rising of the sea level. The key words, "clean air", "clean nature", "destruction of the coral reefs", "destruction of seas", "whaling", "increase in water temperature", "high water/floods" and "climate change" are mentioned comparatively infrequently (each at one percent). Three percent of respondents explicitly demand increased nature conservancy and environmental protection ("the seas must be better protected"). All in all, there is a comparatively high percentage of spontaneous associations with regard to conservation aspects when comparing the present results with the results of similar association questions from earlier nature awareness studies (for example, on wilderness or urban nature).

In fifth place with a total of 18 percent mentions, are associations that denote the general, inanimate nature of the sea and its manifestations that are perceptible to human experience. These include, in particular, waves/current (eight percent), tides/low tide/high tide (five percent), wind/storms/tsunami (five percent), salt water (four percent) and the sound of the sea (one percent). One percent of respondents mention colours like blue and turquoise.

16 percent refer to human exploitation of the seas without evaluating such exploitation in terms of its effects. Specified here are ships and boats (five percent), fishing (four percent), gas production and oil exploration (two percent), wind turbines/wind farms (two percent), but also water sports/swimming/diving (three percent) and holiday at the sea (two percent). The category "other associations" (six percent total) includes value-neutral statements such as nature in general, people or summer/sun (one percent each).

It should be noted: In the consciousness of respondents, marine nature is spontaneous and primarily not an economic area of use, but rather a characteristic experience and experiential space that harbours a diverse variety of plant and animal species. The manifold human exploitation of this habitat also comes to mind, but above all as a source of danger to diversity, functionality and beauty of marine nature.

But what is the assessment of the population about possible causes of threat to the seas? In order to find out, we asked respondents to rank a list of twelve known causes of threat to marine nature by importance.

The fact that plastic waste in the sea is an especially significant problem is almost undisputed by the population.

The problem of plastic waste ranked number one among perceived causes of threat to the seas (see Figure 3). 78 percent regard it as a "very significant problem", an additional 18 percent regard it as a "significant problem", while only three percent consider plastic waste to be a "somewhat insignificant problem".[10]

Contamination with crude oil (very significant problem: 71 percent) and radioactive waste (66 percent) follow in places two and three. 65 percent assess the loss of marine plant and animal species and 64 percent assess the loss of coral reefs and other marine habitats as very problematic. This is followed by the problem areas of fertilizers and waste water (60 percent), overfishing (55 percent), rising sea levels (53 percent) and fishing methods that damage nature (50 percent). Less than half of the respondents see a big problem in by-catch and in the reduction of natural resources (44 and 37 percent, respectively). In the last place is the problem of underwater noise caused by ships or offshore drilling, for example. Nevertheless, 31 percent of respondents say they consider this a "very significant problem" and an additional 41 percent consider it "somewhat of a problem".

The fact that only three percent of the population regards plastic waste in the sea as a "minor problem" could, at least in part, be attributed to the fact that waste can be perceived directly when on holiday at the seaside, and can also perceived as very bothersome. This does not account for all facets of this striking perception of the problem among the population: Microplastic as well as radioactive waste or a high percentage of fertilizers in waste water often elude personal perception: media coverage and environmental education work are likely sources of public perception of the problem in this case.

Overall, it was shown that the percentage of respondents who perceive no problem for the seas or a somewhat insignificant problem (response category "somewhat insignificant problem" or "no problem"), did not exceed 25 percent in any of the causes of threat specified, and in most cases, was significantly lower. Thus, a vast majority of respondents assesses the condition of the oceans as critical. On closer examination, it is also noticeable that the series of problems surrounding "waste, trash, waste water" is the most significant factor in the perception and evaluation of the population, followed by the problem of "loss of biodiversity" (species, habitats) and the utilization complex "comprised of fishing, the excavation of natural resources, noise". The rise in sea levels is a special case and ranks in the middle of the range.

If one examines the answers pertaining to the primary concerns regarding the seas according to different sociodemographic characteristics of the respondents, the following conspicuous features can be observed: Younger people (under 30 years of age) are somewhat

Figure 3: Evaluation of the primary concerns regarding the seas

Please give an assessment of the following aspects of the seas. Do you consider the following aspects to be a very significant problem, a somewhat significant problem, a somewhat insignificant problem or not a problem?

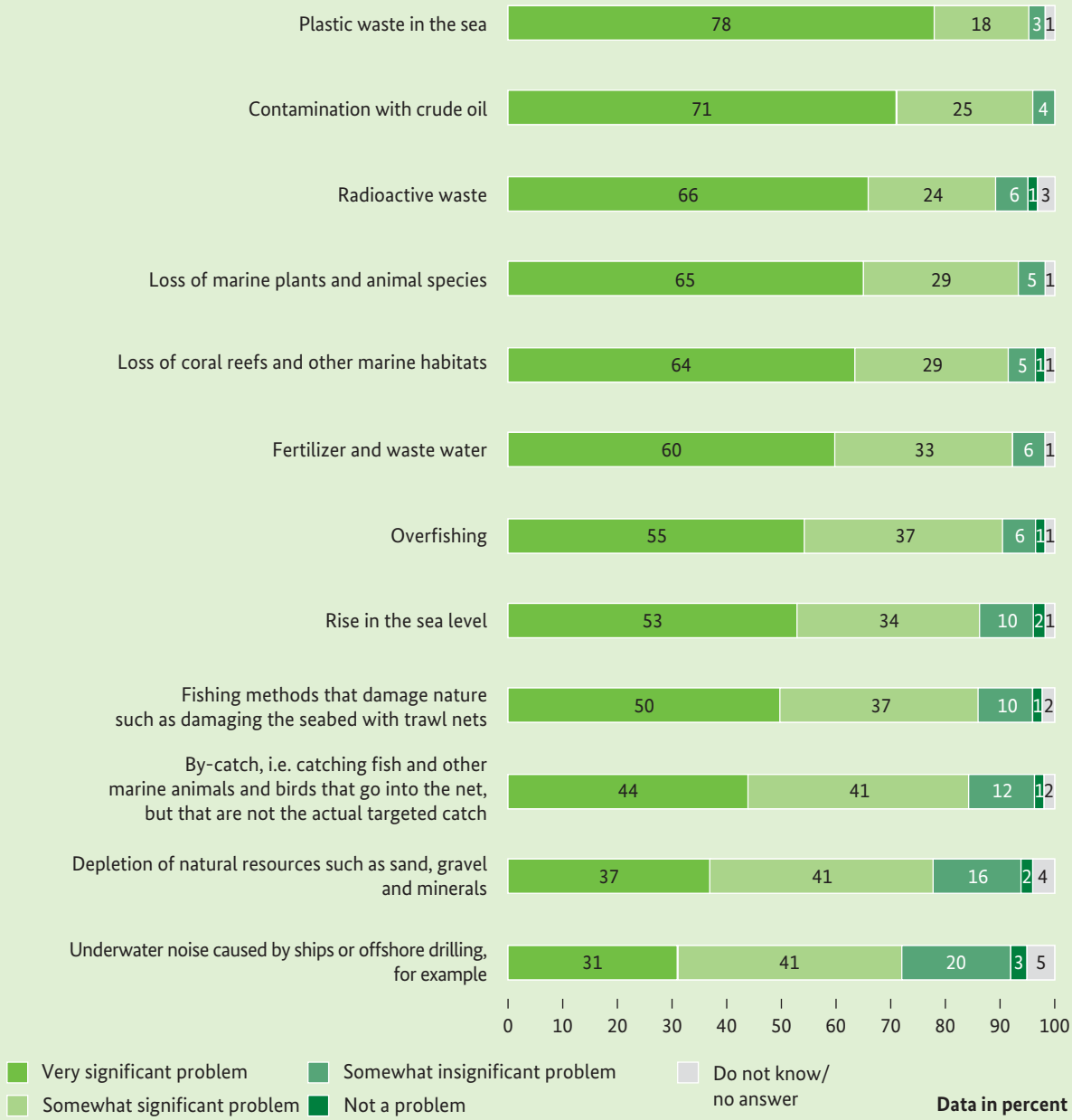


Table 1: Evaluation of the primary concerns regarding the seas by milieu

Please give an assessment of the following aspects of the seas. Do you consider the following aspects to be a very significant problem, a somewhat significant problem, a somewhat insignificant problem or not a problem?

Response category: Very significant problem Data in percent	Average	Established Conservative milieu	Liberal-Intellectual milieu	High Achiever milieu	Movers and Shakers milieu	Adaptive Pragmatist milieu	Socio-ecological milieu	New Middle Class milieu	Traditional milieu	Precarious milieu	Escapist milieu
Plastic waste in the sea	78	79	87	86	84	80	92	77	74	74	65
Contamination with crude oil	71	67	85	74	75	80	84	68	70	62	58
Radioactive waste	66	64	77	74	67	72	74	72	59	56	55
Loss of marine plants and animal species	65	61	81	68	74	72	76	59	64	53	56
Loss of coral reefs and other marine habitats	64	62	76	66	77	70	77	58	63	53	55
Fertilizer and waste water	60	57	76	67	65	70	72	55	55	46	53
Overfishing	55	55	73	63	63	60	68	51	55	46	40
Rise in the sea level	53	50	67	60	58	61	67	46	47	40	49
Fishing methods that damage nature	50	50	58	54	54	58	62	43	50	44	42
By-catch	44	41	54	47	50	47	47	36	44	35	41
Depletion of natural resources	37	32	42	45	52	39	47	32	35	26	35
Underwater noise	31	22	35	36	39	32	43	25	33	25	30

Heavily over-represented | Over-represented | Under-represented | Heavily under-represented

under-represented in terms of perceiving most issues, while a higher level of education is associated with a slightly higher perception of these issues. For example, 47 percent of those under 30 consider overfishing of the seas to be a big problem, while the population average is 55 percent and in the group with a high level of education, 59 percent.

The members of the Precarious and Escapist milieus are the least sensitized to the problems of the seas.

On the other hand, the differences between the milieus are clearer: By far the greatest awareness of the problem is in the Socio-ecological and Liberal-Intellectual milieu. Overfishing, for example, is perceived as particularly problematic in these milieus with approximately 70 percent each (see Table 1).

Those in the Movers and Shakers, High Achievers and the Adaptive Pragmatist milieus have become increasingly aware of marine problems. For example, the rise in the sea-levels is considered to be a particularly serious problem by 58 percent of those in the Movers and Shakers milieu, 60 percent of those in the High Achiever milieu, and 61 percent of those in the Adaptive Pragmatist milieu (population average: 53 percent, Liberal-Intellectual milieu and Socio-ecological milieu: 67 percent each). By contrast, the awareness of the problem in the Precarious and Escapist milieus is much less pronounced. In almost all the questions asked, they consider the problems to be less urgent than the rest of the population. It is obvious that the members of the New Middle Class have an awareness of the problem that falls somewhat below the average. This is especially true for the by-catch problem (very significant problem: 36 percent as compared to 44 percent on average) and for fishing methods that damage nature (43 percent as compared to 50 percent on average). The assessment of the primary concerns about the seas by those in the Traditional and Established Conservative milieus largely correlates with the population average.

2.2 Marine conservation: Marine protected areas

As is the case with the mainland, the designation of nature reserves in the sea is a way to protect the sea and its biodiversity from multiple threats. This raises the question of which rules should apply in these protected areas or, in other words: what should be allowed there and what should be prohibited. In order to find out what the Germans' views are, the participants in this study were asked about their opinion about marine conservation areas (see Figure 4).

The establishment of marine conservation areas is gaining popularity among the population.

A majority of respondents (56 percent) "completely" agrees with the statement that more nature conservation areas should be established to protect nature, 37 percent "tend to agree", and only five percent "tend not" to agree. Thus, the designation of marine conservation areas generally enjoys widespread popular support, with no closer specification as to which area is meant and which rules should apply there.

Responding to the question concerning the rules, respondents were asked to comment on various activities and measures. As the survey results show, the rejection of oil and gas pipelines in marine conservation areas is particularly high: 92 percent of respondents think that they have no business there (both levels of approval), two-thirds are even "completely" of this opinion. The rejection of fisheries in nature reserves is also significant, accounting for 90 percent. The picture is rather ambivalent with regard to the question of exactly how this rejection should be implemented: 57 percent believe that voluntary regulations with the fishing industry would be better than government regulations (both levels of approval), while 40 percent would prefer government regulations. 79 percent believe that no wind turbines should be in marine conservation areas while 18 percent disagree with this.

The socio-demographic evaluation of this questionnaire shows: Among the clear advocates for the designation of nature reserves at sea, the younger respondents (under 30) are under-represented (highest approval level: 50 percent as compared to 56 percent on average). Older people and those with lower formal education are also less likely to object to wind turbines in marine conservation areas (highest approval level: over 65 years of age: 44 percent, low levels of formal education: 43 percent, average: 48 percent). The fact that oil and gas pipelines have no place in marine conservation areas is emphasized by women (69 percent) and those with a high level of education (70 percent as compared to 66 percent on average).

Figure 4: Attitude towards marine protected areas

The following statements refer to your opinion regarding marine conservation areas. Do you completely agree, somewhat agree, somewhat disagree or completely disagree with the following statements?

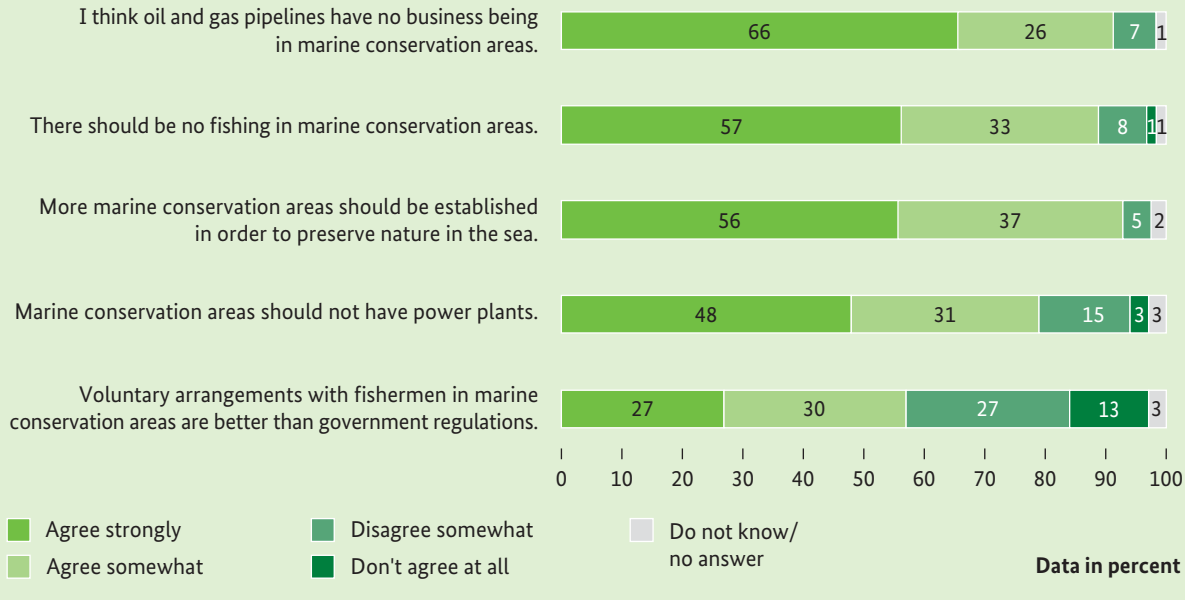
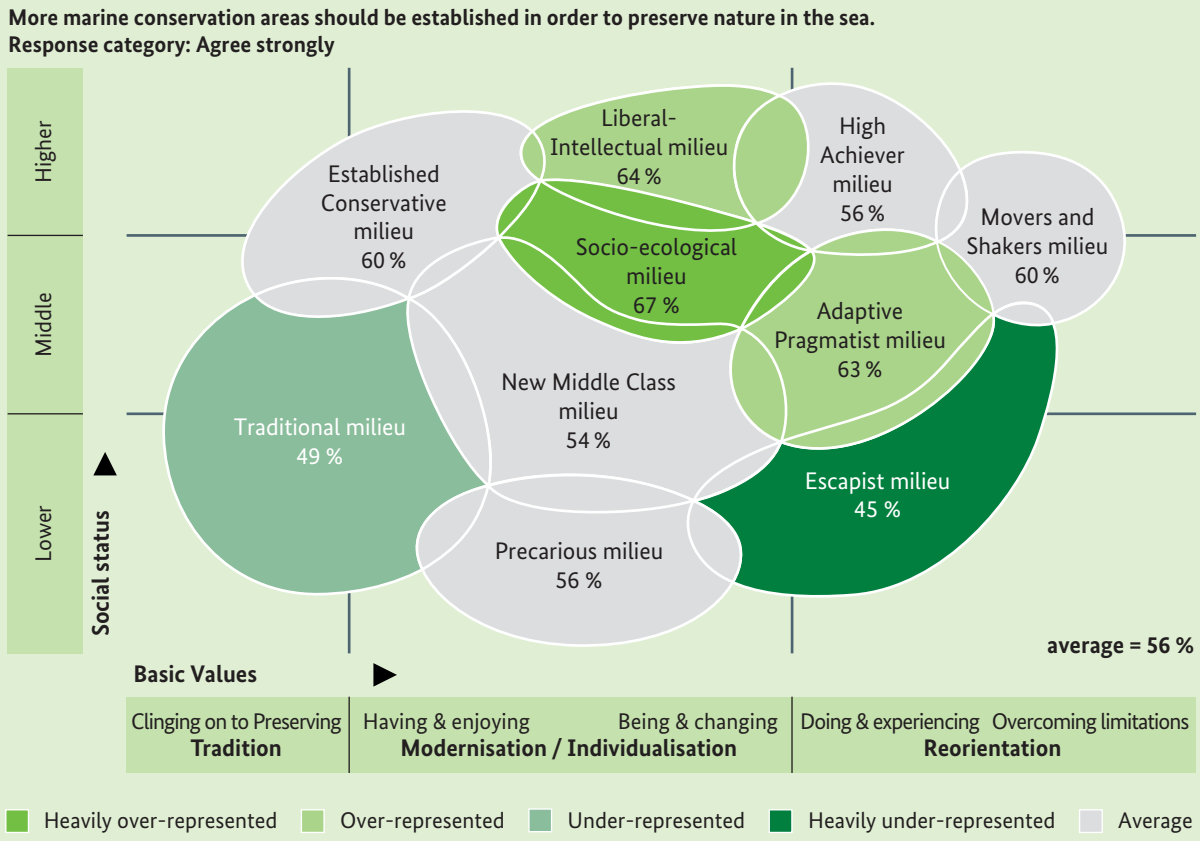


Figure 5: Attitudes towards marine protected areas by milieu



Moreover, differentiating based on the size of the town/city: With the exception of the required ban on oil and gas pipelines, agreement with all other limitations on exploitation in locations with a population of at least 500,000 was below average (highest approval level: five percentage points less than average). This finding fits in with the results already revealed in previous studies, according to which nature awareness in the largest cities in particular is generally less pronounced than in smaller cities and municipalities (see BMUB and BfN 2016).

Approval of more marine conservation areas is lowest in the Escapist milieu.

In a comparison of milieus, those in the Escapist milieu are the least supportive of stricter rules for the preservation of nature in the sea in all the points listed. They are also significantly under-represented among the advocates of more marine conservation areas (highest approval level: 45 percent as compared to 56 percent on average). The strongest proponents can be found in the Social-ecological milieu (highest approval level: 67 percent), among those in the Liberal-Intellectual milieu (64 percent) and those in the Adaptive Pragmatist milieu (63 percent) (see also Figure 5).

Those in the Liberal-Intellectual and Socio-ecological milieus are most vocal in opposing power plants in marine nature reserves.

An interesting finding relates to the construction of power plants: 48 percent of all respondents strictly reject construction in marine nature reserves (highest approval level). Given the importance of wind energy (whether on- or offshore) for climate protection and the energy revolution, it seems reasonable to assume that those in the Socio-ecological and Liberal-Intellectual milieus, as the most important backer milieus for wind energy (see Chapter 3), would make an exception in terms of protected area management. This is not the case, however. On the contrary: both milieus agree "fully and completely" with the statement, "in marine conservation areas there should be no power plants" more often than the average, with 58 percent (Liberal-Intellectual milieu) or 56 percent (Socio-ecological milieu). Obviously these milieus see the potential for conflict between nature conservation and climate protection in a differentiated manner, at least within the context of these questions.

Most Germans did not know about the planned establishment of new nature conservation areas in the North Sea and the Baltic Sea, but they still consider it to be appropriate and important.

In September 2017, the Federal Environment Ministry newly established six large nature reserves in the North Sea and Baltic Sea. These include "Doggerbank", "Borkum Riffgrund" and "Sylt Outer Reef - Eastern German Bight" in the North Sea, as well as "Fehmarn Belt", "Kadetrinne" and "Pomeranian Bay - Rönnebank" in the Baltic Sea. These areas are located in the exclusive economic zone of Germany (EEZ), which adjoins the zone 12 nautical miles seaward, for which the federal government, not the federal states, is responsible. But had the citizens taken notice of the planned establishing of the reserves? And regardless of whether they responded with yes or no, did they consider the establishment of nature conservation areas in the North Sea and Baltic Sea to be appropriate and important?

As the survey results show, only six percent of the citizens had previously heard about the planned establishment of the nature reserves and at the same time, felt well informed about it (see Figure 6). A good third reported that they had heard of it, but knew nothing more about it. The vast majority of 60 percent among the younger (less than 30 years of age) had not heard of it at all, while among those with a low level of formal education it was 66, and in the Traditional and Precarious milieus, 68 respectively 70 percent.

Figure 6: Knowledge about the establishment of new nature protected areas in the North Sea and Baltic Sea

Six large nature conservation areas in the open sea are being newly established in the German North Sea and Baltic Sea. Were you aware of this?

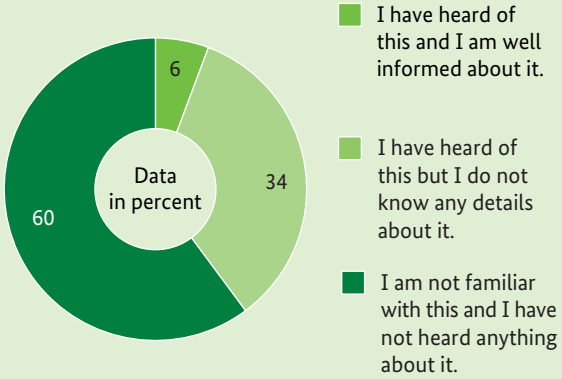
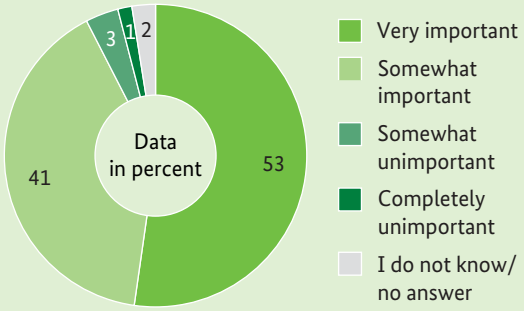


Figure 7: Attitude towards the establishment of nature protected areas in the North Sea and Baltic Sea

What is your view on setting up these protected areas in the North Sea and Baltic Sea? Do you consider such areas as very important, somewhat important, somewhat unimportant or completely unimportant?



A vast majority of 94 percent of respondents support the establishment of nature reserves in North Sea and Baltic Sea, and 53 percent even consider such areas "very important" (see Figure 7). In the group of people with a high level of education, full agreement percent is even higher with 57. The strongest proponents can be found in the Socio-ecological and Liberal-Intellectual milieu, however (very important: 63 and 70 percent, respectively). Those in the Escapist milieu gave less, but still substantial approval (46 percent unrestricted approval).

2.3 Marine conservation: Sustainable fish consumption

The extent and type of fish consumption play a central role in the development of fish stocks; a fact that respondents basically acknowledge. After all, 92 percent of them believe that overfishing poses a very significant problem, or at least a somewhat significant problem for the seas (see Chapter 2.1).

In Germany, approximately 3.8 billion euros was spent on fish and fish products in 2016, and Germans consume almost 15 kilograms per capita every year, despite rising prices. The most popular fish is salmon, followed by Alaska pollock (also in the form of fish fingers), herring, tuna and trout (Fisch-Informationszentrum e. V. 2018). Aquacultures play a growing role for fish products worldwide, including in Germany, but are often critically evaluated due to their husbandry conditions and their environmental impact (see BfN 2018). Conscious handling on the part of

consumers with regard to origin, fishing methods and fish keeping conditions is therefore a first step towards implementing the basic idea of nature conservation on the consumer side of commerce.

Eight percent of respondents in this study say they do not eat fish. This is in contrast to 24 percent, who eat fish one or more times per week, and additional 35 percent, who do so more than once per month and 33 percent, who consume fish once per month or less. But just how interesting is it for Germans to find out about the origin and catch conditions in order to make consumption compatible with nature and the environment? This question was first examined within the context of the nature awareness study in 2011 (BMU and BfN 2012), and has now been asked again in the current study.

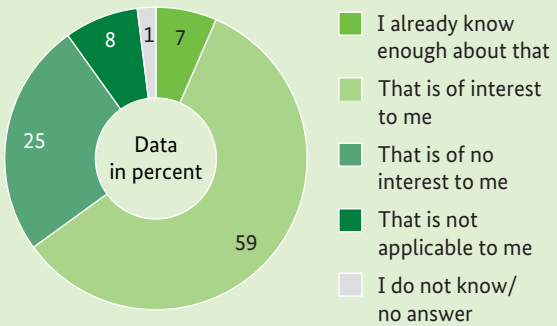
A majority of Germans express an interest in information about the origin and conditions under which the fish were caught.

In 2017, a majority of 59 percent expressed an interest in information about the origin and conditions under which the fish were caught. Those most likely to say this include women (63 percent), those over 65 (63 percent) and those with high level of formal education (66 percent). On the other hand, one in four respondents is not interested. Seven percent say that they already know enough, and the question does not apply to eight percent because they do not consume fish (see Figure 8).

Interestingly, the inhabitants of large cities (having a population of at least 500,000) are more frequently interested in information on sustainable fishing (63 percent as compared to 59 percent in the population average). By contrast, interest in the smallest communities (population of less than 5,000) was below average (43 percent); here, respondents frequently indicate that they already know enough about it (16 percent as compared to seven percent on average).

Figure 8: Interest in information on the origin of fish and conditions under which fish are caught

How interested are you in information about the origin of fish and conditions, under which fish were caught, in order to make your consumption as eco-friendly and environmentally-friendly as possible?



In a comparison of milieus, it is those in the Socio-ecological milieu above all, who frequently state that they already know enough to be able to make their own consumption compatible with nature and the environment (15 percent). Particularly interested in information are those in the Established Conservative milieu (72 percent), those in the Liberal-Intellectual milieu (70 percent) and those in the Movers and Shakers milieu milieu (68 percent). In the Socio-ecological milieu, it is 63 percent. There is significantly less interest among those in the Escapist milieu (45 percent) and members of the Precarious milieu (43 percent).

Comparing the survey results with the results of the survey in 2011, no significant differences can be identified: In 2011, 61 percent of respondents indicated that they were interested in information about the origin and conditions under which fish were caught, while in the current survey this is two points lower at 59 percent. Conversely in 2011, 23 percent indicated that they had no interest in such information, while in 2017, 25 percent did so.

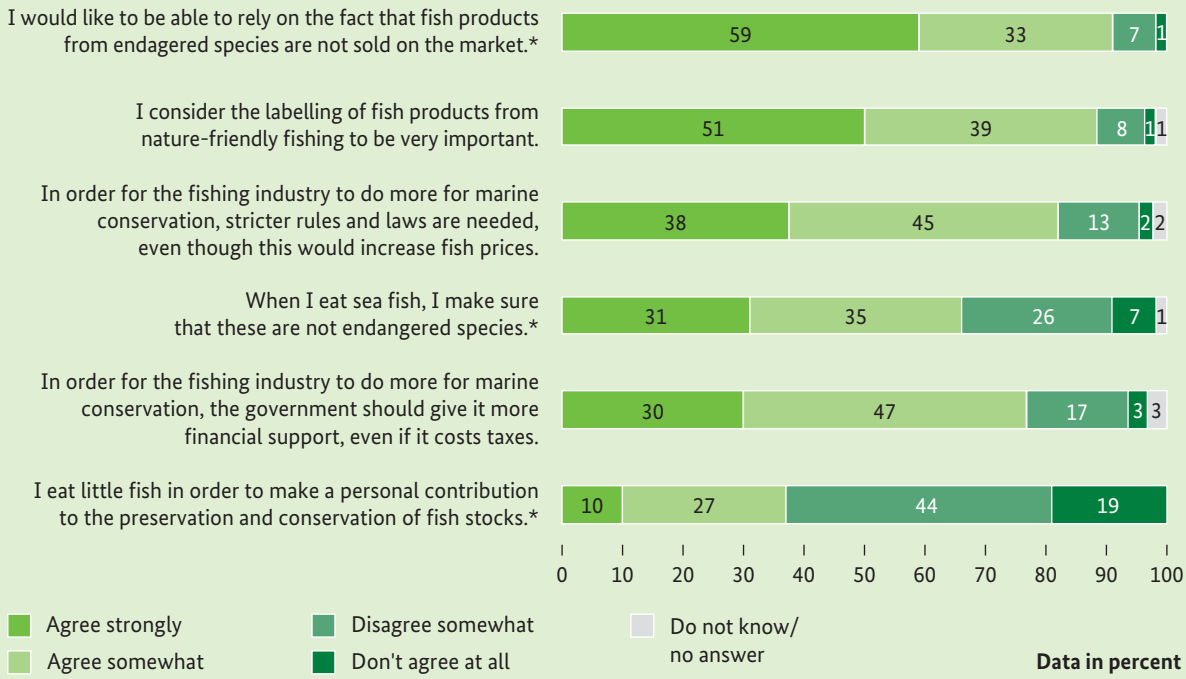
Nine out of ten Germans are in favour of labelling fish products from sustainable fisheries.

When asked about their attitudes towards sustainable fishing, it is clear that concrete measures that can help consumers make purchases are well received by respondents: 92 percent would like to be able to rely on the fact that there is no trade in fish products from endangered species, 90 percent favour the labelling of fish products from environmentally friendly fishing (both levels of approval taken together, see Figure 9). Women and well-educated people are most clearly in favour of both measures. By comparison, men and the younger respondents (under 30 years old) are somewhat more non-committal (see Table 2).

There are high approval ratings for the financial support of the fishing industry so that it can do more for marine conservation, as well as the adoption of stricter conservation of marine nature rules: 83 percent are “completely” or at least “somewhat” in favour of stricter rules and laws so that the fishing industry can do more for nature conservation, even if it increases fish prices. 77 percent believe that the state should financially support the fishing industry so that it can do more for marine conservation. However: When

Figure 9: Sustainable fish consumption and attitude towards sustainable fishing

The following statements refer to some opinions about the fishing industry. Do you strongly agree, somewhat agree, somewhat disagree or don't agree at all with these statements?



* The statements were not given to respondents who claimed not to eat fish.

taking into consideration the highest approval level, the picture is relativised. Only 38 percent are fully in favour of stricter regulations and only 30 percent for financial support. Both measures are particularly well received by well-educated people (highest approval level: stricter rules and laws: 47 percent, financial support: 34 percent). Older people (over 65 years of age) and those with a low level of education are below average for stricter rules and laws (highest approval level: over 65: 32 percent, low level of formal education: 34 percent), men were below average for financial support (28 percent, see Table 2).

Based on their own fish consumption, 31 percent of respondents say that they are careful not to eat any fish products from endangered species, while another 35 percent "somewhat" agree. However, since only seven percent of respondents previously reported that they were sufficiently informed about the origin and fishing conditions of fish, it can be assumed that the relatively high figure of 31 percent of unqualified approval is more a behavioural intention than a routine practice. Men and especially the younger respondents are less likely than average to be careful not to eat sea fish from endangered species (see Table 2).

Only a minority eat little fish to help conserve and conserve fish stocks.

Given the overfishing of the seas, it would be obvious to restrict fish consumption. The present survey results indicate, however, that most Germans are (somewhat) unwilling to eat little fish in order to make a personal contribution to the preservation and conservation of fish stocks ("somewhat disagree" / "don't agree at all": 63 percent). By contrast, there are ten percent who do so by their own admission (highest approval level) and another 27 percent who restrict their fish consumption "sometimes more, sometimes less" (see Figure 9).

The evaluation of the survey results according to social milieus can be summarized as follows: The labelling of fish products and a proactive trade stance (that is, no trade in fish products from endangered species) is demanded first and foremost by the Liberal-Intellectual milieu (highest approval level: labelling of fish products: 71 percent, proactive trade stance: 80 percent) and the Socio-ecological (labelling of fish products: 72 percent, proactive trade stance: 67 percent). Both of these requirements are also very popular with those in the Movers and Shakers milieu, however, (highest approval level: labelling of fish products: 62 percent, proactive trade attitude: 73

Table 2: Sustainable fish consumption and attitude towards sustainable fishing by gender, age and level of education

The following statements refer to some opinions on the subject of fishing. Do you strongly agree, somewhat agree, somewhat disagree or don't agree at all with these statements?

Response category: Agree strongly Data in percent	Aver-age	Gender		Age (years)				Education		
	Ø	M	F	up to 29	30 to 49	50 to 65	over 65	low	mid	high
I would like to be able to rely on the fact that there is no trade in fish products from endangered species.	59	54	63	52	62	62	57	57	59	63
I consider the labelling of fish products from environmentally friendly fishing to be very important.	51	49	53	44	55	51	51	48	50	58
In order for the fishing industry to do more for marine conservation, stricter rules and laws are needed, even though this would increase fish prices.	38	38	39	39	39	43	32	34	37	47
When I eat sea fish, I make sure that these are not endangered species.	31	28	34	22	35	33	31	31	30	33
In order for the fishing industry to do more for marine conservation, the state should give it more financial support, even if it costs taxes.	30	28	32	27	30	33	29	28	29	34
I eat little fish in order to make a personal contribution to the preservation and conservation of fish stocks.	10	10	10	10	10	9	10	10	9	12

Heavily over-represented | Over-represented | Under-represented | Heavily under-represented

percent) and with those in the Adaptive Pragmatist milieu (labelling of fish products: 60 percent, proactive behaviour by commerce: 68 percent). Not surprisingly, it is once again those in the Escapist milieu (approval level: labelling of fish products: 37 percent, proactive trade stance: 46 percent) and members of the Precarious milieu (labelling of fish products: 34 percent, proactive trade stance) are again: 44 percent), who are less convinced of both measures. It is noticeable that the High Achievers also indicate that they want to "fully and completely" rely on there being no trade in fish products from endangered species less frequently than average (highest approval level: 49 percent).

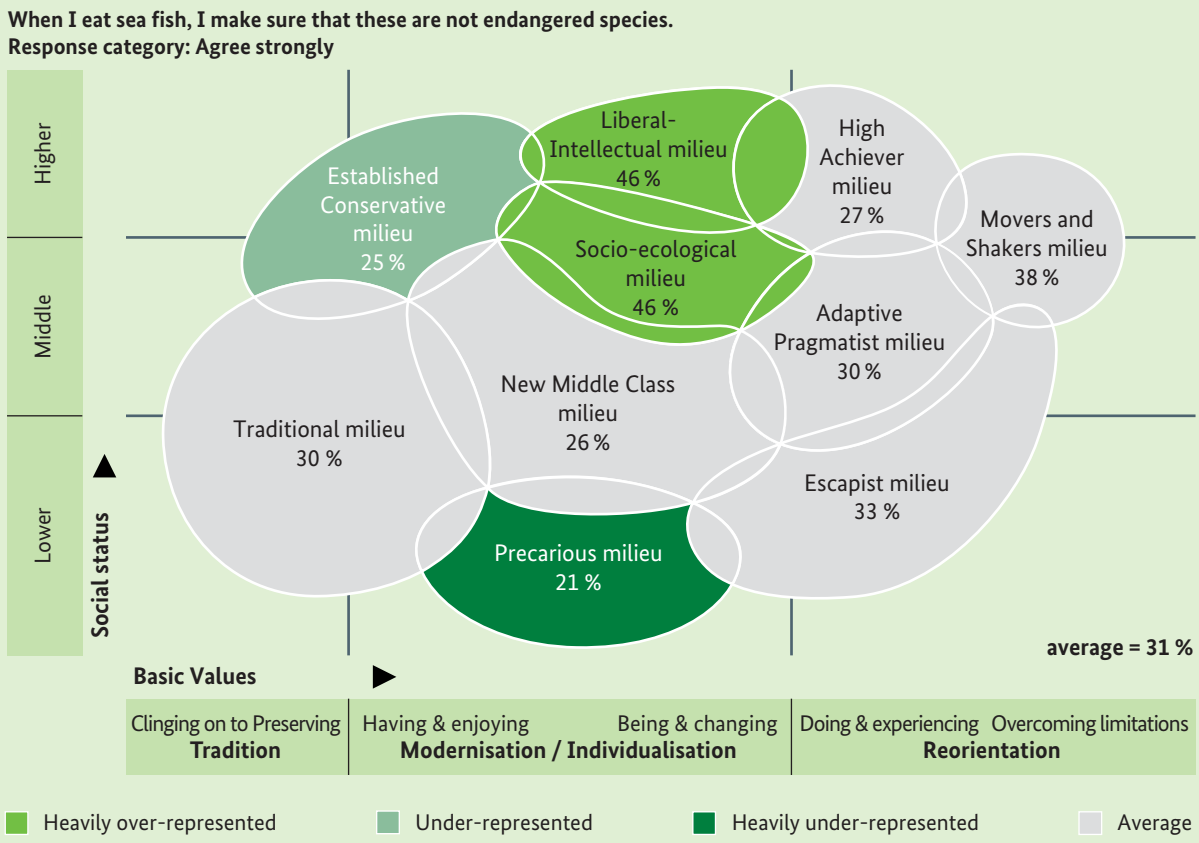
The Socio-ecological milieu (highest approval level: 57 percent), the Liberal-Intellectual milieu (56 percent) and those in the Movers and Shakers milieu (47 percent) are over-represented among those who advocate for stricter rules in the fishing industry, while those in the Escapist milieu (33 percent), the Traditional milieu (26 percent) and those of the Precarious milieu (26 percent) were under-represented. Only those in the Liberal-Intellectual milieu "completely" support financial support at an above average frequency (39 percent as compared to 30 percent on average), while in the Traditional and Precarious milieus, only about a quarter fully agree (25 and 23 percent respectively).

Finally, figure 10 shows that the Liberal-Intellectual milieu and the Socio-ecological are by far the most concerned with not eating fish products from endangered species (highest approval level: 46 percent each). Those in the Precarious milieu (21 percent) and the Established Conservative milieu (25 percent) pay considerably less attention to this.

55 percent of Germans are aware of the MSC seal, but many do not know what it means.

In view of the labelling of fish products from environmentally friendly fishing, which many respondents favour – 90 percent consider labelling "(very) important"), a final question was asked as part of this range of topics: the recognition of the MSC label as the most common and most widely used certification of sustainably caught fish. The MSC (Marine Stewardship Council) organization operates an international certification program for fish and seafood from sustainable fishing. The official goal of the MSC is to secure fish stocks for the future. The MSC was founded by the food company Unilever and the environmental organization WWF, but is now independent. Currently approximately twelve percent of fish caught worldwide

Figure 10: Sustainable fish consumption by milieu

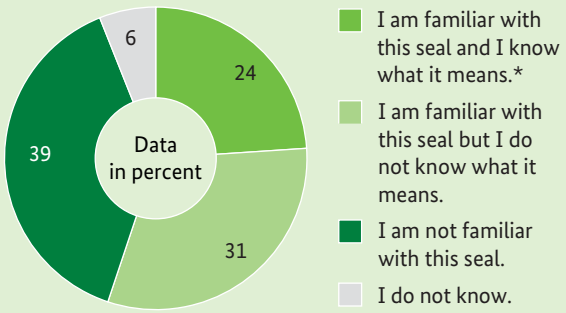


is MSC certified (MSC 2018). According to the Federal Environment Agency, in the case of fish caught in the wild, MSC-certified fish in Germany already make up a market share of approximately 64 percent.[11] And nevertheless: Only 24 percent of respondents can explain what the MSC seal stands for. This is compared to 39 percent, who are not familiar with the seal, and another 31 percent who are familiar with the seal, but who do not know what it means (see Figure 11). As such, knowledge about the meaning of the seal is strongly dependent on the formal education: In the group with a high level of education, 31 percent know what the MSC seal means as compared to just 20 percent in the group with modest education. The age and gender of respondents also play a role: While the younger generation of those under 30 years of age are the least familiar with the content-related meaning of the seal (14 percent), women are able to explain what the MSC seal stands for more often than men (26 as compared to 22 percent).

The milieu analysis reveals that the members of the Socio-ecological milieu most frequently know what the MSC seal means (42 percent). Those in the Liberal-Intellectual milieu and those in the Movers and Shakers milieu know more frequently than the average (34 percent each). This knowledge is least common in the Traditional and in the Precarious milieus (18 and eleven percent respectively).

Figure 11: Familiarity with the MSC seal

Please tell me next whether you are familiar with this seal/logo.
(Interviewer shows the respondent the MSC seal)



* Respondents who claimed to know what the MSC seal means but did not name sustainable fishing upon request were assigned to the group of respondents who are familiar with the seal but do not know what it means.

3 Energy transition

The energy revolution is a major political project that involves far-reaching changes in all areas of life. What is particularly noticeable are the rapid and widely visible technical facilities in our landscape. An example of this are wind farms, which represent an intrusion into the ecosystem: Birds and bats can be killed by rotors of wind turbines, forest areas are increasingly being chosen by the wind power operators as sites, the turbines change the landscape and are also associated with noise effects.

Nevertheless: Following the Fukushima nuclear accident in March of 2011, the Federal Government decided to phase out nuclear power and to adopt a policy of targeted renewable energy expansion. In so doing, the energy revolution was widely accepted by the general public, as all poll numbers showed.

Acceptance of the energy revolution 2011 and in subsequent years was also examined in nature awareness studies. Whether the popular approval has changed over time and how it is currently expressed is discussed below.

Approval of the energy revolution consistently remains at a high level.

The current data makes it clear that in 2017, Germans continue to be predominantly behind the energy revolution. 61 percent consider the energy revolution to be correct, 30 percent are undecided and only seven percent position themselves against it. Thus approval of the energy revolution remains at a consistently high level and neither the proportion of “yes” votes nor the proportion of “no” votes has changed since the last survey period (see Figure 12).

Respondents with a high level of education more frequently consider the energy revolution to be correct than average (66 percent “yes” votes, average: 61 percent). The same applies to the age group of 30 to 49-year-olds (66 percent). The response behaviour differs even more based on social milieu than based on socio demographics (see Figure 13): those in the Socio-ecological milieu (74 percent “yes” votes) and the Liberal-Intellectual milieu (79 percent) form the "core" of the proponents. Over-represented are those in the Movers and Shakers milieu (70 percent) and the Established Conservative milieu (69 percent). Significantly fewer advocates are found in the Precarious milieu (53 percent), the Traditional milieu (52 percent), and among those in the Escapist milieu (48 percent).

Figure 12: Agreement with the energy transition compared over time

Do you think the energy transition towards predominantly renewable energies is the right way to go?

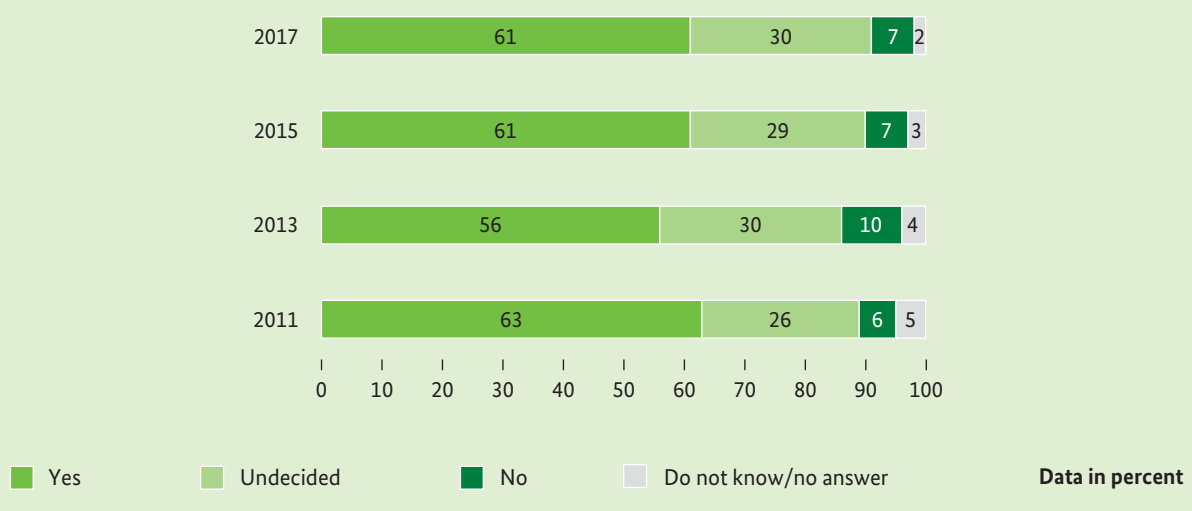
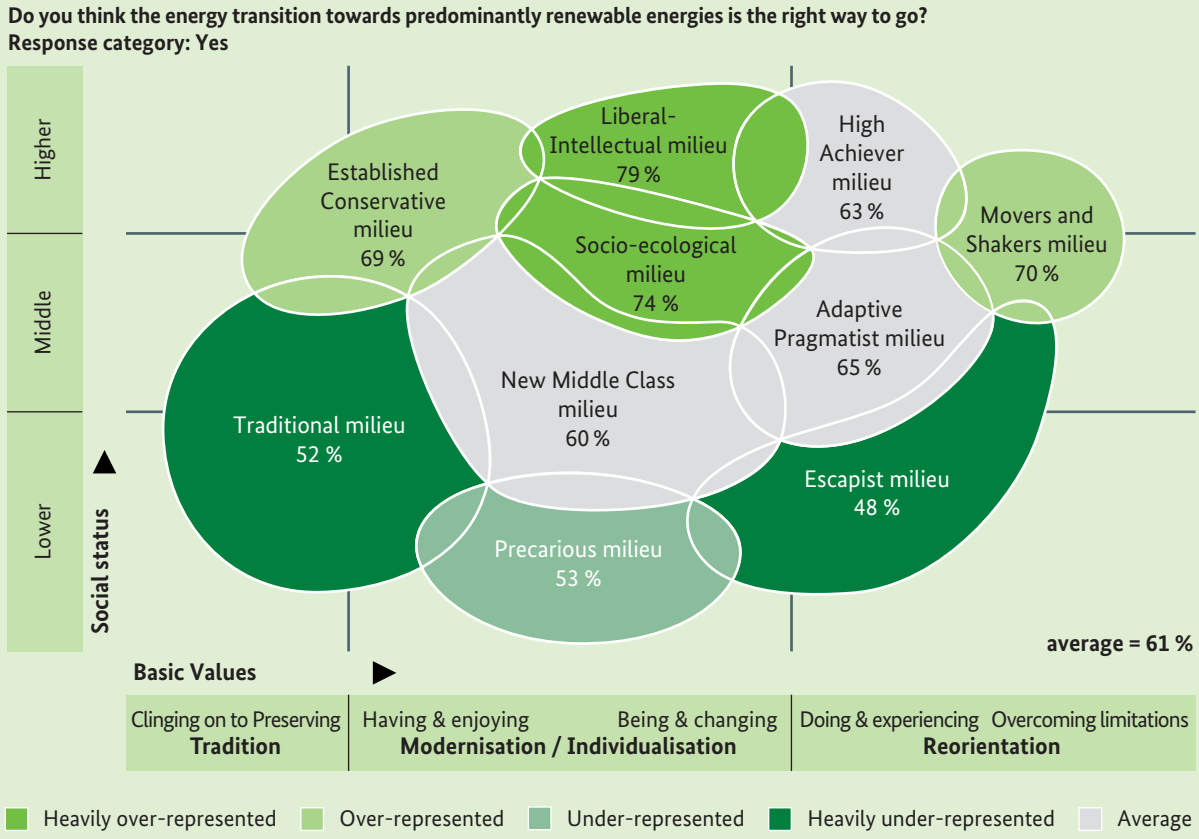


Figure 13: Agreement with the energy transition by milieu



Compared to the last survey period, approval values within the milieus have remained relatively stable. It is noticeable, however, that the approval in the Movers and Shakers milieu and the Adaptive Pragmatist milieus has decreased by five percentage points in each case. The opposite is true in the Precarious milieu:

In 2015, 48 percent indicated that they believed the energy revolution was correct, while in 2017 it was 53 percent. The latter value is remarkable in that, in the Precarious milieu, it represents the highest figure since the beginning of the measurement (see Table 3).

Table 3: Agreement with the energy transition by milieu compared over time

Do you think the energy transition towards predominantly renewable energies is the right way to go?

Response category: Yes Data in percent	Average	Established Conservative milieu	Liberal-Intellectual milieu	High Achiever milieu	Movers and Shakers milieu	Adaptive Pragmatist milieu	Socio-ecological milieu	New Middle Class milieu	Traditional milieu	Precarious milieu	Escapist milieu
2017	61	69	79	63	70	65	74	60	52	53	48
2015	61	69	78	61	75	70	74	59	50	48	51
2013	56	66	72	65	69	63	81	53	45	33	45
2011	63	72	83	61	72	70	84	62	61	47	45

Heavily over-represented | Over-represented | Under-represented | Heavily under-represented

4 Agro-genetic engineering

"Genetic engineering" refers to processes by which the genetic material of organisms is modified using molecular genetic techniques in a way that does not occur in nature (for example crossing of species boundaries, introduction of new properties). In agriculture, the application of genetic engineering is also referred to as "green genetic engineering" or agro-genetic engineering. In so doing, agricultural crops are usually changed in practice in such a way that they are pest-resistant or have a resistance to pesticides.

Agro-genetic engineering can pose a number of risks: damage to non-target organisms (such as beneficial insects), the uncontrolled spread of genetic engineering properties of crops, or potential harm to human health. While agro-genetic engineering is widely used in agriculture in North and South America and also plays a role in some developing countries, virtually no genetically engineered organisms (GMOs) are cultivated in the European Union (EU). In addition, the use of GMOs in the EU is limited to imports, primarily for animal feed.

In Germany, no entries have been made in the so-called location register of the Federal Office for Consumer Protection and Food Safety since 2015. Thus no field research was carried out on genetically engineered organisms. However: There are currently some far-reaching technical breakthroughs in this area. With new molecular biological techniques such as CRISPR / Cas and other methods of genome editing,[12] the genetic material of organisms can be extensively, quickly and selectively biotechnologically modified. The development of these processes is progressing rapidly and there is significant potential, both in terms of possible applications and in terms of possible risks to consumers, nature and the environment. Whether applications of the new molecular biological techniques will be subject to an environmental review in the future, is currently politically and socially very controversial, and in 2018, is subject to a procedure before the European Court of Justice, among other things. The issue concerning the social acceptance of agro-genetic engineering is therefore highly topical. The situation will be presented in this chapter.

Genetic engineering in agriculture continues to be met with widespread rejection among the population.

In the previous studies (BMUB and BfN 2016, BMUB and BfN 2014, BMU and BfN 2012, BMU and BfN 2010), it was already made clear that the population largely rejects genetic engineering in agriculture. In the current nature awareness study, 79 percent of respondents argue in favour of a ban on genetic engineering in agriculture. 13 percent consider such a prohibition to be "somewhat unimportant", while only two percent consider it "completely unimportant" (see Figure 14). Thus, the basic approval for a ban on genetically engineered organisms has been relatively stable at a high level for years ("very/somewhat important": 2009: 87 percent, 2013: 84 percent, 2015: 76 percent, 2017: 79 percent). A look at the unqualified agreement also shows that the percentage of those, who consider a ban on genetic engineering in agriculture to be "very important", has gone down by 14 percentage points since 2013 ("very important": 2009: 51 percent, 2013: 56 percent, 2015: 44 percent, 2017: 42 percent).

The socio-demographic analysis shows that the age of respondents plays a role in their assessment of a ban on genetic engineering in agriculture: The older the respondents, the more often they state that a ban would be "very important". It is also noticeable that respondents who voted in favour of a ban are slightly under-represented in the financially better-off group of people (see Table 4).

In a comparison of the lifeworlds, it becomes clear that

Figure 14: Agreement with the banning of genetically modified organisms in farming

Please tell me whether you find the following measures very important, somewhat important, somewhat unimportant or completely unimportant:
The use of genetically modified organisms in farming will be banned.

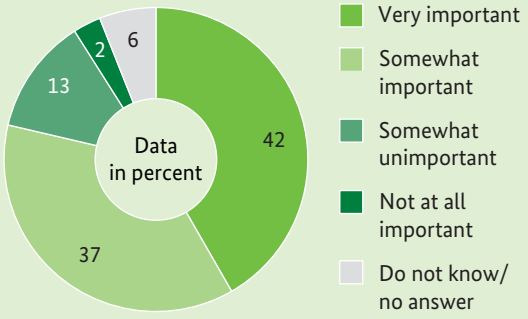


Table 4: Agreement ("very important") with the banning of genetically modified organisms in farming by age, level of education and net household income

Please tell me whether you consider the following measures to be very important, somewhat important, somewhat unimportant or not at all important:

Response category: Very important Data in percent	Aver-age	Age (years)				Education			Net household income (€)			
	Ø	up to 29	30 to 49	50 to 65	over 65	low	mid	high	up to 999	1,000 to 1,999	2,000 to 3,499	3,500 and more
The use of genetically modified organisms in farming will be banned.	42	35	40	43	51	41	45	43	42	44	43	38

Heavily over-represented | Under-represented | Heavily under-represented

the members of the Socio-ecological milieu are most opposed to genetic engineering in agriculture. In the current survey, 61 percent fully agree with a ban (see Table 5). At least 50 percent of the Liberal-Intellectual milieu and the New Middle Class also consider a ban to be "very important" (52 and 50 percent unqualified approval respectively). In the younger Escapist milieu ("very important": 36 percent), Movers and Shakers milieu (34 percent) and the Adaptive Pragmatist milieu (33 percent), agreement is more subdued.

Unqualified approval of a ban on genetically engineered organisms has decreased in all milieus as compared to 2013. Especially in the Established Conservative milieu, Liberal-Intellectual milieu and Movers and Shakers milieu, the figures have fallen sharply (by up to 27 percentage points in the Established-Conservative milieu). Nonetheless in principle, more than 70 percent of people in every milieu support a ban on genetic engineering in agriculture.

Most Germans strictly reject genetically engineered foods.

The great significance of adhering to the precautionary principle with regard to genetic engineering in agriculture and its new applications is shown above all by the fact that 93 percent of respondents believe that possible effects on nature should always be investigated when plants are genetically engineered in a targeted manner. 70 percent are even "completely" of this opinion (see Figure 15). Furthermore, respondents express major concerns about genetically engineered food: Only 31 percent say that they consider eating genetically engineered foods to be no problem or a somewhat insignificant problem. This is more when compared to 2015 (no problem / somewhat significant problem: 25 percent), however most Germans continue to strictly reject genetically engineered food. Freedom of choice is also important in this context for almost all respondents: As many as 93 percent are

Table 5: Agreement ("very important") with the banning of genetically modified organisms in farming by milieu as compared over time*

Please tell me whether you consider the following measures to be very important, somewhat important, somewhat unimportant or not at all important: The use of genetically modified organisms in farming will be banned.

Response category: Very important Data in percent	Average	Established Conservative milieu	Liberal-Intellectual milieu	High Achiever milieu	Movers and Shakers milieu	Adaptive Pragmatist milieu	Socio-ecological milieu	New Middle Class milieu	Traditional milieu	Precarious milieu	Escapist milieu
2017	42	36	52	40	34	33	61	50	48	39	36
2015	44	47	57	37	41	43	67	43	50	35	34
2013	56	63	75	56	58	44	77	57	52	50	45

Heavily over-represented | Over-represented | Under-represented | Heavily under-represented

* This question was not asked in 2011, 2009 the results refer back to the milieu prior to the last milieu model update and therefore are not readily comparable.

in favour of commerce labelling food made from animals that have been fed genetically engineered food (both levels of approval).

A clear majority expresses ethical reservations about the genetic manipulation of nature.

In addition to concerns about genetically engineered food, respondents express ethical reservations: As was already the case in 2015, a significant majority of respondents "completely" agree or at least "somewhat" agree with the statement that human beings have no right to genetically modify plants and animals. In 2015 it was 75 percent, while in the current survey it is 78 percent. Most respondents do not want to accept ("somewhat disagree" / "don't agree at all") the argument that genetic engineering in agriculture is an important element in the fight against global hunger, even if the proportion of those who reject this argument has decreased as compared to 2015 (2015: 62 percent, 2017: 52 percent).

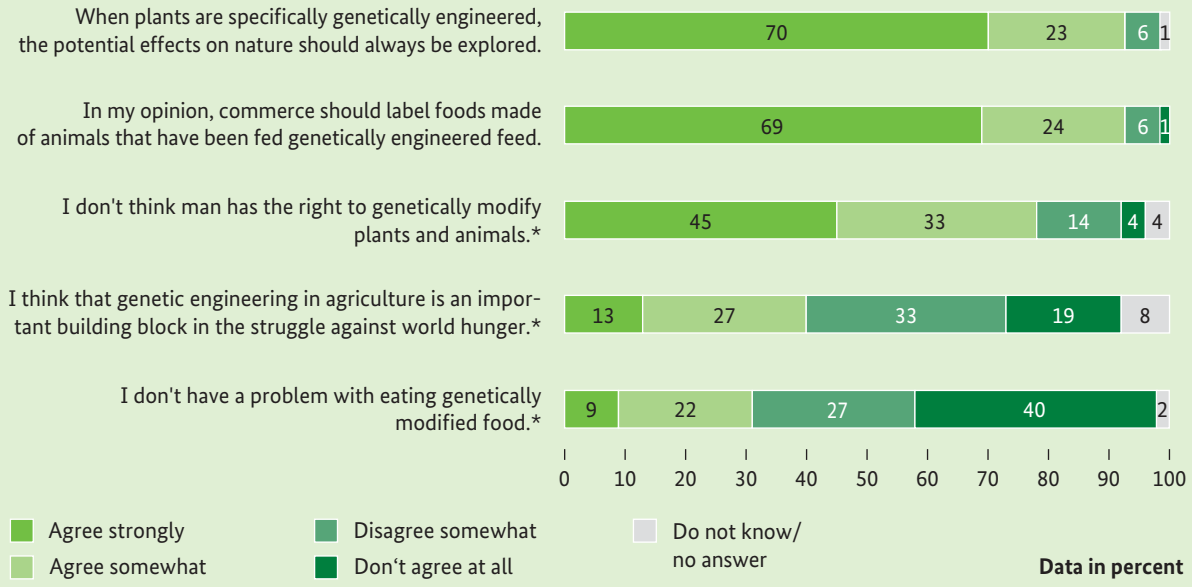
The rejection of genetic engineering is lower in the younger generation.

In again examining the socio-demographic characteristics of the respondents, age as a factor is once again striking: The rejection of genetic engineering in agriculture is significantly less pronounced among those in the age group up to 29 years of age than the average for the population. While 45 percent of all respondents unreservedly believe that humans have no right to genetically engineer plants and animals, for example, it is 35 percent among those in the age group up to 29 years (highest level of agreement), while this was still 40 percent in 2015 (as compared to 49 percent on average). In addition, findings suggest that women are more critical of genetic engineering than men (see Table 6). Finally, the educational comparison shows: the demand that foods made from animals that are fed genetically engineered food be identified increases as respondents' level of education increases. The ethical argument that humans have no right to genetically modify plants and animals is particularly strongly pronounced in the group with a moderate level of formal education. It is remarkable, however, that in all other statements, the educational background of the respondents plays no role.

What is also revealing is the differentiation according to social milieus: overall, those in the Socio-ecological and Liberal-Intellectual milieus position themselves most strongly against genetic engineering. Members of the Precarious and Escapist milieus have the fewest reservations. That commerce label food made from animals that are fed genetically engineered food is de-

Figure 15: Attitudes towards the deployment of genetic engineering in agriculture

Please assess the following statements on the topic of genetic engineering in agriculture. Do you strongly agree, somewhat agree, somewhat disagree or don't agree at all with these statements?



* This statement has already been asked in the previous survey 2015.

manded with far less emphasis in both lifeworlds, for example (see Table 7). In addition, it was striking that in the Escapist milieu, a comparatively high number of people had no problem or a somewhat insignificant problem with eating genetically engineered food. After all, 45 percent of those in this milieu say this, while the average among all respondents is 31 percent (both levels of approval).

Table 6: Attitude towards the deployment of genetic engineering in agriculture by gender, age and level of education

Please assess the following statements on the topic of genetic engineering in agriculture. Do you strongly agree, somewhat agree, somewhat disagree or don't agree at all with these statements?

Response category: **Agree strongly** Data in percent	Average	Gender		Age (years)				Education		
	Ø	M	F	up to 29	30 to 49	50 to 65	over 65	low	mid	high
When plants are specifically genetically engineered, the potential effects on nature should always be explored.	70	69	72	66	70	73	71	69	72	73
In my opinion, commerce should label foods made of animals that have been fed genetically engineered feed.	69	68	70	60	70	74	69	66	71	73
I don't think man has the right to genetically modify plants and animals.	45	43	48	35	45	50	48	43	50	45
I think that genetic engineering in agriculture is an important building block in the struggle against world hunger.	13	15	10	16	14	12	9	13	12	13
I don't have a problem with eating genetically modified food.	9	10	7	12	7	6	12	9	8	10

Heavily over-represented · Over-represented · Under-represented · Heavily under-represented

Table 7: Attitude towards the deployment of genetic engineering in agriculture by milieu

Please assess the following statements on the topic of genetic engineering in agriculture. Do you strongly agree, somewhat agree, somewhat disagree or don't agree at all with these statements?

Response category: **Agree strongly** Data in percent	Average	Established Conservative milieu	Liberal-Intellectual milieu	High Achiever milieu	Movers and Shakers milieu	Adaptive Pragmatist milieu	Socio-ecological milieu	New Middle Class milieu	Traditional milieu	Precarious milieu	Escapist milieu
When plants are specifically genetically engineered, the potential effects on nature should always be explored.	70	70	88	69	77	74	88	64	67	63	61
In my opinion, commerce should label foods made of animals that have been fed genetically engineered feed.	69	68	89	68	79	70	88	67	69	57	54
I don't think man has the right to genetically modify plants and animals.	45	51	53	40	43	36	58	50	50	39	36
I think that genetic engineering in agriculture is an important building block in the struggle against world hunger.	13	12	18	13	17	14	11	12	7	10	15
I don't have a problem with eating genetically modified food.	9	9	6	8	12	7	3	11	9	11	10

Heavily over-represented · Over-represented · Under-represented · Heavily under-represented

5 Nature conservation at a global and regional scale – an issue of identity?

The perception of natural and environmental problems depends heavily on the regional context. A finding of the environmental awareness study, conducted jointly by the BMU and the Federal Environment Agency every two years, which has remained stable over the last few years is as follows: the closer people live to the environment, the better they rate its condition to be, while the further away the environment being considered, the worse they rate its condition (see BMUB and UBA 2017, page 43 et seq.). Is the same true of the topics of nature and nature conservation? Does whether we speak of nature in our own region or of nature on earth generally even make a difference in terms of the problem perception, but above all, in terms of our willingness to act? Do people identify more or less with nature, depending on how close to or far from it they are? And what about the perceived effectiveness of action? To what extent do you see opportunities to contribute to the world either independently or through joint efforts to protect nature in the region and protect nature around the world?

These and similar questions are discussed in more detail below. They focus on the difference between global and regional identity, and the role that nature plays here. These questions are therefore of great significance for conservation policy because they distinguish for the first time which nature people want to see more protected: nature
"in their own region" or nature "on earth".

In order to obtain direct comparison values, perceived connectedness (place identity)[13], the awareness of the problem, behavioural intentions as well as personal norms and efficacy perceptions were examined for both types of relevance to nature (global and regional). The respondents were divided into two groups. One group answered those questions that had regional relevance while the other group answered those questions with a global relevance to nature.[14]

While the concept of global nature (referred to here as "nature on earth") forms a unity, despite the richness of its content, regional nature ("nature in my region") remains spatially blurred: depending on the person interviewed, regional nature may refer to more or less large areas of nature (including the small-scale immediate vicinity, nature in the city, among other things). It is not about the evaluation of concrete natural spaces in this case but rather, about the importance of nature as part of the regional consciousness of people, regardless of how they define "nature in the region" spatially for themselves.

5.1 Nature and identity

In the following, the question that is first asked is what opinion the population has regarding the role of nature in the identity of the people in the region and the mankind as a whole.

Nature plays an important role in the identity of human beings, both globally and regionally.

"What makes up our identity as human beings is essentially the nature on earth." 68 percent of respondents agree with this statement (both levels of

Figure 16: Significance of nature for regional and global identity

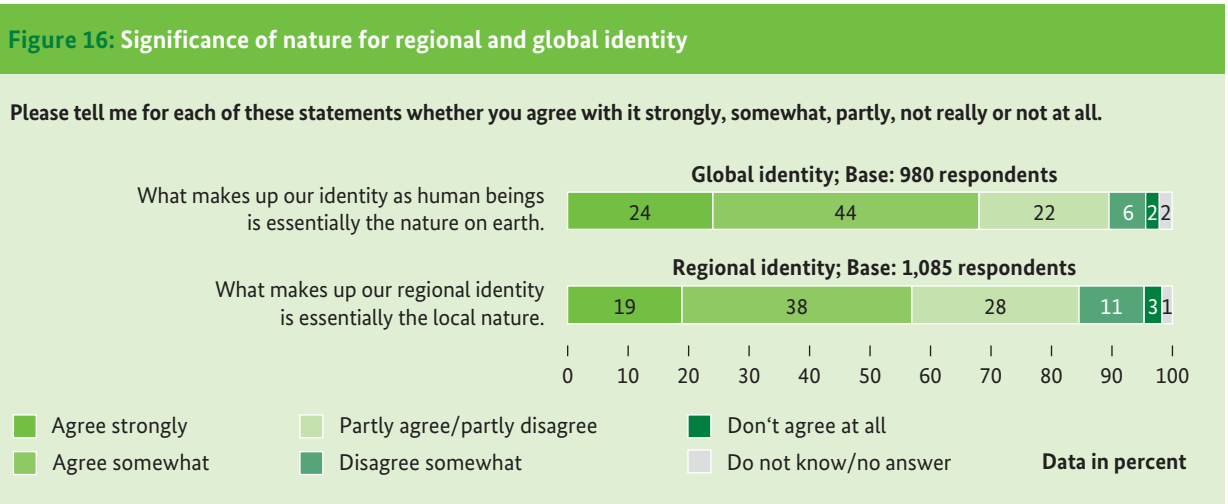


Table 8: Significance of nature for regional and global identity by age

Response category: Agree strongly / agree somewhat Data in percent	Average	Age (years)			
	Ø	up to 29	30 to 49	50 to 65	over 65
What makes up our identity as human beings is essentially the nature on earth. (Global identity; base: 980 respondents)	68	56	69	69	71
What makes up our regional identity is essentially the local nature. (Regional identity; base: 1,085 respondents)	57	49	53	63	58

Heavily over-represented | Under-represented | Heavily under-represented

approval), while 22 percent are undecided. 57 percent claim that the identity of the region is significantly influenced by the local nature, while 28 percent indicate that they are undecided about this (see Figure 16). At first glance, this result is surprising: According to respondents, mankind as a whole is more strongly impacted by nature than the people in the region. Nonetheless, this finding also shows that nature plays a major role in people's identity, both globally and regionally: the significance of nature for people's regional and global identity is confirmed by considerably more respondents than denied, and this applies to global identity (68 versus eight percent) as well as for regional identity (57 versus 14 percent).

The socio-demographic analysis shows that the significance of nature for the regional and global identity is seen more strongly by older people than by younger people (see Table 8). In a comparison of milieus, it is above all the members of the Liberal-Intellectual milieu who attribute great importance to nature for the identity of the region (both levels of approval: 73 percent). When it comes to the question of the extent to which nature plays an important role in global identity, the highest levels of approval come from the New Middle Class (both levels of approval: 75 percent) and from the ranks of those in the Adaptive Pragmatist milieu (83 percent). Under-represented is the Escapist milieu (56 percent).

5.2 Perception of the problems

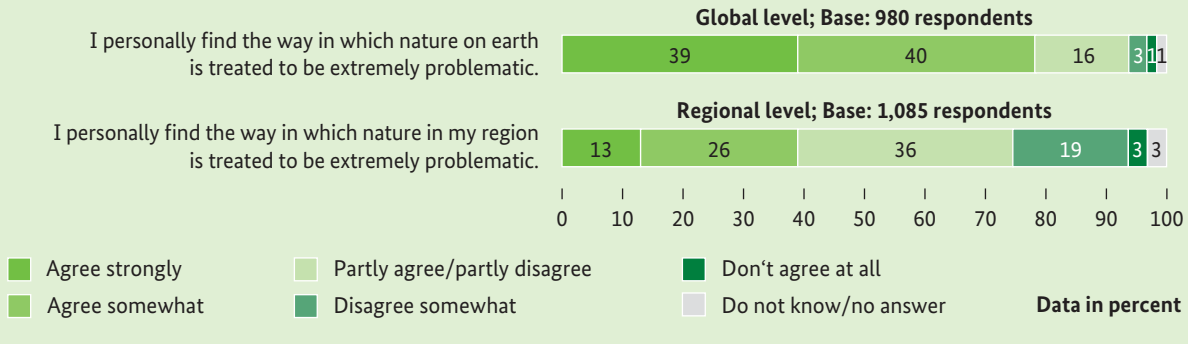
The next question pertains to people's awareness of the problem: How great is the concern about the way in which nature is treated globally and regionally?

The way, in which nature is treated globally concerns Germans more than the way, in which nature is treated regionally.

79 percent consider the way, in which nature on earth is treated to be extremely problematic (both levels of approval); only four percent disagree with this, while 16 percent are undecided (see Figure 17). The Germans are much less worried about the treatment of nature

Figure 17: Perception of the problems

Please tell me for each of these statements whether you agree with it strongly, somewhat, partly, not really or not at all.



in the region: 39 percent see a problem in how nature is treated at a regional level (both levels of approval). This is in contrast to 22 percent, who (somewhat) believe there are no significant hazards.

The socio-demographic analysis of the questions reveals only a few abnormalities: When it comes to dealing with global nature, women express a slightly greater awareness of the problem than men: 83 percent of women and 76 percent of men consider the way, in which nature on earth is treated, to be problematic (both levels of approval). People under 30 years of age have a below-average awareness of the problem (both levels of approval: 70 percent, average: 79 percent).

In comparing the lifeworlds, members of the Socio-ecological milieu are most aware of how nature is treated globally (both levels of approval: 94 percent). The awareness of the problem is below average of those in the Escapist milieu (both levels of approval: 71 percent, average: 79 percent). In terms of dealing with regional nature, no differences in the awareness of the problem were observed among the milieus.

5.3 Personal relevance of nature conservation and intended actions

Past nature awareness studies have already frequently asked about the personal significance of the nature conservation and the willingness, to work to protect nature. This is again the case in the current study, although here too, an explicit distinction should be made between nature worldwide and nature in the region.

The personal relevance of nature conservation at a global level is rated higher than nature conservation in the region.

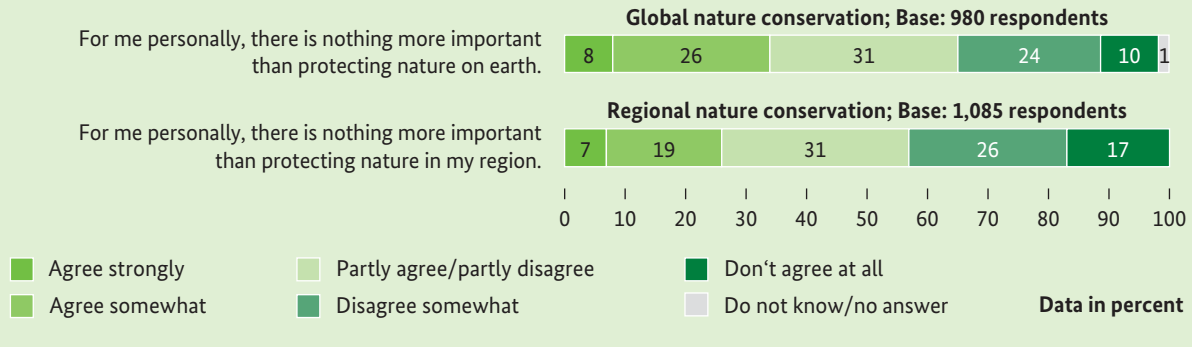
How important is nature conservation for citizens? 34 percent of respondents agree that they personally see nothing more pressing (both levels of approval) than protecting nature on earth, thus that global conservation has a high personal priority, and just as many disagree (see Figure) 18). But how is the relevance of regional nature conservation assessed? 26 percent of respondents state that they personally see nothing more pressing than protecting nature in the region (both levels of approval), however a relative majority of 43 percent does not agree. The relevance of conservation at the global level is therefore rated higher than that of nature conservation at the regional level. This result fits with the finding that the state of global nature is seen as more critical than the state of regional nature. The fact is, however: There are fewer opportunities that allow the individual to exert an influence on a global level than at the regional level.

Women say that the protection of nature on earth has a personally high priority more frequently than men (both levels of approval: women: 39 percent, men: 29 percent). The age group of those under 30 years of age is under-represented (both levels of approval: 26 percent). The personal significance of nature conservation in the region is emphasized above all by high-income individuals (both levels of approval: Net household income starting at 3,500 euros: 34 percent, average: 26 percent).

In principle, most Germans are willing to contribute something to global and regional nature conservation, at least insofar as the effort is not great.

Figure 18: Personal significance of global and regional nature conservation

Please tell me for each of these statements whether you agree with it strongly, somewhat, partly, not really or not at all.



The following applies both to global and to regional nature conservation: more than 70 percent respectively are willing to do something personally for nature conservation (both levels of approval) by following the rules of conduct in protected areas (see Figure 19). This example only deals with compliance with the rules, however, i.e. compliance with prescribed and legally established rules instead of deviation from said rules. In the latter case, not only would nature have been harmed but a social or even legal norm would also have been violated.

The other three polled behaviours, collecting trash, participating in demonstrations, working in a conservation group, require a greater personal commitment. Accordingly, the approval ratings are significantly lower: One third of respondents respectively agree to collect trash once a week in nature, to participate in demonstrations to protect nature, and to work in a nature conservation group.

Behaviours that require greater personal effort are less popular, especially among older people.

Differentiated according to socio-demographic characteristics, an age comparison shows that the younger respondents clearly declare less willingness to observe behavioural rules in protected areas in order to protect global and regional nature (both levels of approval: for those under 30 years of age: 63 percent in global

Figure 19: Personal willingness to contribute to global and regional nature conservation

Please tell me for each of these statements whether you agree with it strongly, somewhat, partly, not really or not at all.

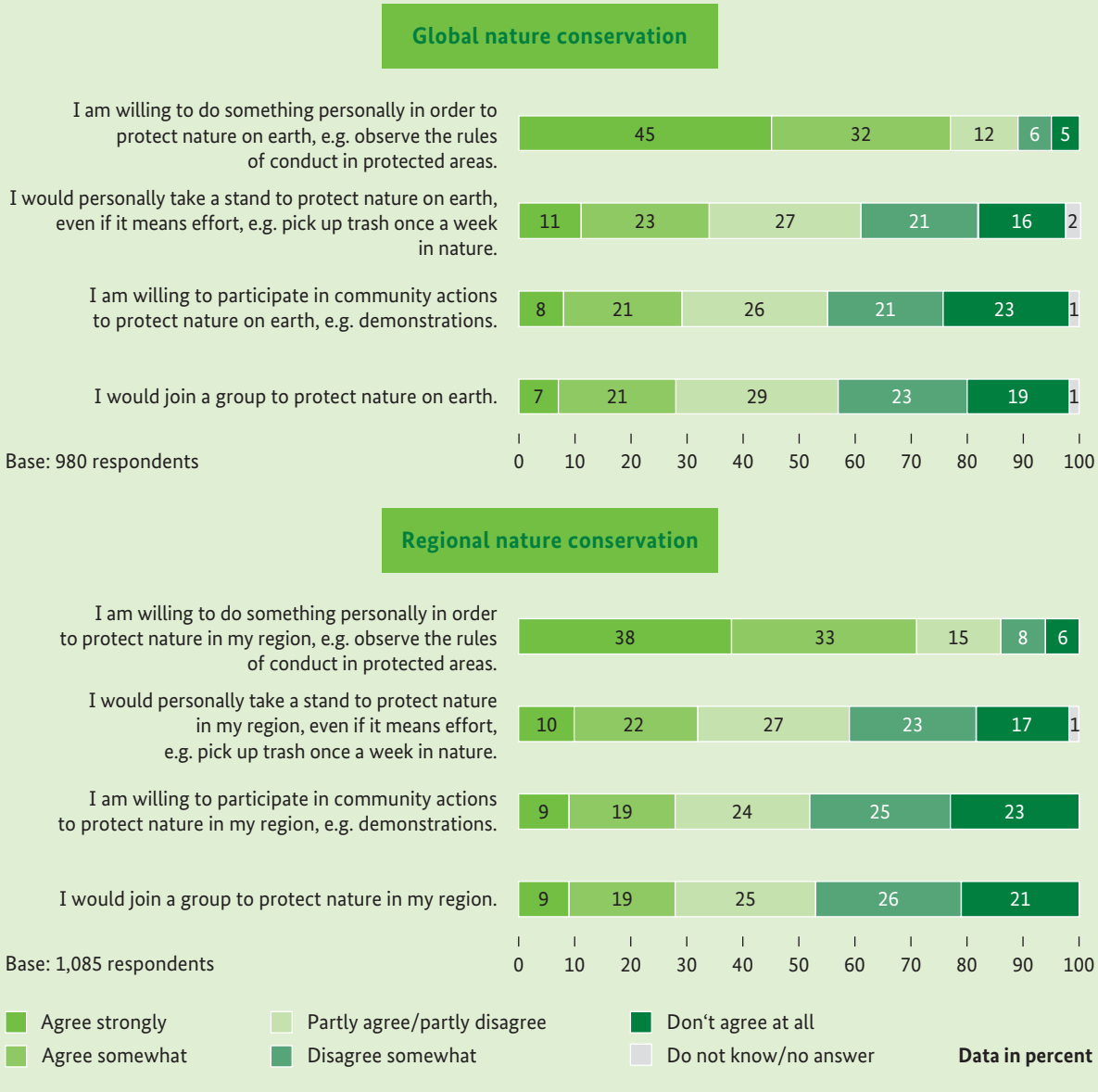


Table 9: Personal willingness to contribute to global nature conservation by city/town size

Response category: Agree strongly / agree somewhat Data in percent	city/town size (in 1000)					
	Ø	< 5	5 to below 20	20 to below 100	100 to below 500	at least 500
I am willing to do something personally in order to protect nature on earth, e.g. observe the rules of conduct in protected areas.	77	60	78	84	82	72
I would personally take a stand to protect nature on earth, even if it means effort, e.g. pick up trash once a week in nature.	34	18	41	46	28	33
I am willing to participate in community actions to protect nature on earth, e.g. demonstrations.	29	18	22	39	27	28
I would work in a group to protect nature on earth.	28	14	33	42	23	25

Heavily over-represented | Over-represented | Under-represented | Heavily under-represented

nature conservation, 64 percent; for those over 65: 80 percent for global nature conservation, 75 percent for regional conservation). When it comes to behaviours that require more effort, older respondents show less willingness. For example, 18 percent of people over the age of 65 are willing to work in a local group to protect nature in the region (both levels of approval) as compared to 29 percent among those under 30. In addition to age, education also plays a role: In the case of more complex behaviours, a modest level of formal education is associated with lower levels of willingness, regardless of whether the focus is on protecting global nature or protecting regional nature. For example, 18 percent of those with a modest level of formal education are willing to participate in demonstrations to protect nature in the region (both levels of approval), and in the group with a high level of education it is 34 percent.

Differences are also discernible in the response behaviour of women and men: when it comes to the global nature conservation, when compared with men, women express slightly more willingness to observe behavioural codes in protected areas (women: 81 percent, men: 74 percent) and participate in demonstrations (both levels of approval: women: 32 percent, men: 26 percent). The differentiation according to the size of the municipality ultimately shows that the willingness to contribute personally to protecting global nature is highest in small and medium-sized cities, (population: 20,000 to below 100,000) (see Table 9). In terms of the behavioural willingness to protect the regional nature, no significant differences between municipalities of different size can be identified.

When considering milieu, additional differences are found: The willingness to observe codes of conduct in protected areas is most widespread in the Socio-ecological and Liberal-Intellectual milieus: Whether global or regional nature conservation, the approval values in both milieus are in the range of 85 to 89 percent (both levels of approval). Those in the Escapist milieu are significantly less willing (both levels of approval: 65 percent respectively). In terms of more laborious measures, the lowest level of behavioural willingness is found in the Traditional milieu, regardless of whether these measures are focussed on global or regional nature. For example, only ten percent of those in the Traditional milieu participate in demonstrations in order to protect nature at a regional level (average: 28 percent). In the High Archiever milieu, more sophisticated measures are most appealing, at least as far as the protection of global nature is concerned. For example, 41 percent of those in the High Achiever milieu say they are willing to work in a local group to protect nature at the global level (both levels of approval, average: 28 percent). When it comes to regional nature, however, those in the Liberal-Intellectual milieu are most often willing to get involved. 43 percent of those in the Liberal-Intellectual milieu are willing to collect trash once a week in order to protect local nature, for example, and thus to increase their personal effort (both levels of approval, average: 32 percent).

5.4 Perceived behavioural control and norms

Even if one has behavioural intentions, the question remains regarding how effective one sees one's own actions to be. And since it is possible to act individually as well as collectively (through joint efforts), a distinction must also be made between individual (personal) and collective perceived behavioural control. Following the guiding topic of this chapter, a distinction was made between personal and collective perceived behavioural control for global and regional nature conservation. The aim was to examine which level of nature conservation is perceived by the population as being more effective: the global level or the regional. In so doing, perceived behavioural control was divided into two facets: action activation ("We are able to work together for nature conservation") and achievement of goals ("I believe that together we can achieve something for nature conservation").

In addition to perceptions of effectiveness, personal norms can also influence action: How strongly is the individual's sense that they are obliged to act? This question will be dealt with at the end of this chapter. Again, a distinction should be made between nature conservation on a global level and on a regional level. The relevance of this question is that behaviours that are perceived as personal standards receive more subjective attention and are more likely to positively impact one's actions.

Collective perceived behavioural control is valued more at the global level than at regional level.

The fact that the collective (achieved through joint efforts) perceived behavioural control is valued higher than the individual is not very surprising, given the size of the task. What is interesting is that respondents tend to be of the opinion that conservation-friendly collective action is more effective in the global context than in the local context: 82 percent find that together, "we as human beings" can do something to protect nature in the world (both levels of approval); just as many believe that "we as human beings" are capable of working together for global nature conservation. In the local context, only 67 percent believe in the achievement of objectives and 62 percent in terms of action activation (both levels of approval each). This pattern is also repeated when surveying individual action, however in a weakened form: Personal perceived behavioural control is rated slightly higher on the global level than at the local level. For example, 42 percent say that they are personally capable of achieving something for the protection of the global nature (both levels of approval), while 37 percent say this in the regional context (see Figure 20).

This comparatively high degree of confidence in the perceived behavioural control of collective action in comparison to purely personal action suggests that nature conservation should point to the community character of nature conservation activities whenever this is possible and meaningful. Wherever the individual sees him/herself easily overwhelmed and doubts the effectiveness of individual action, confidence can be increased enormously if a collective effort is pointed out.

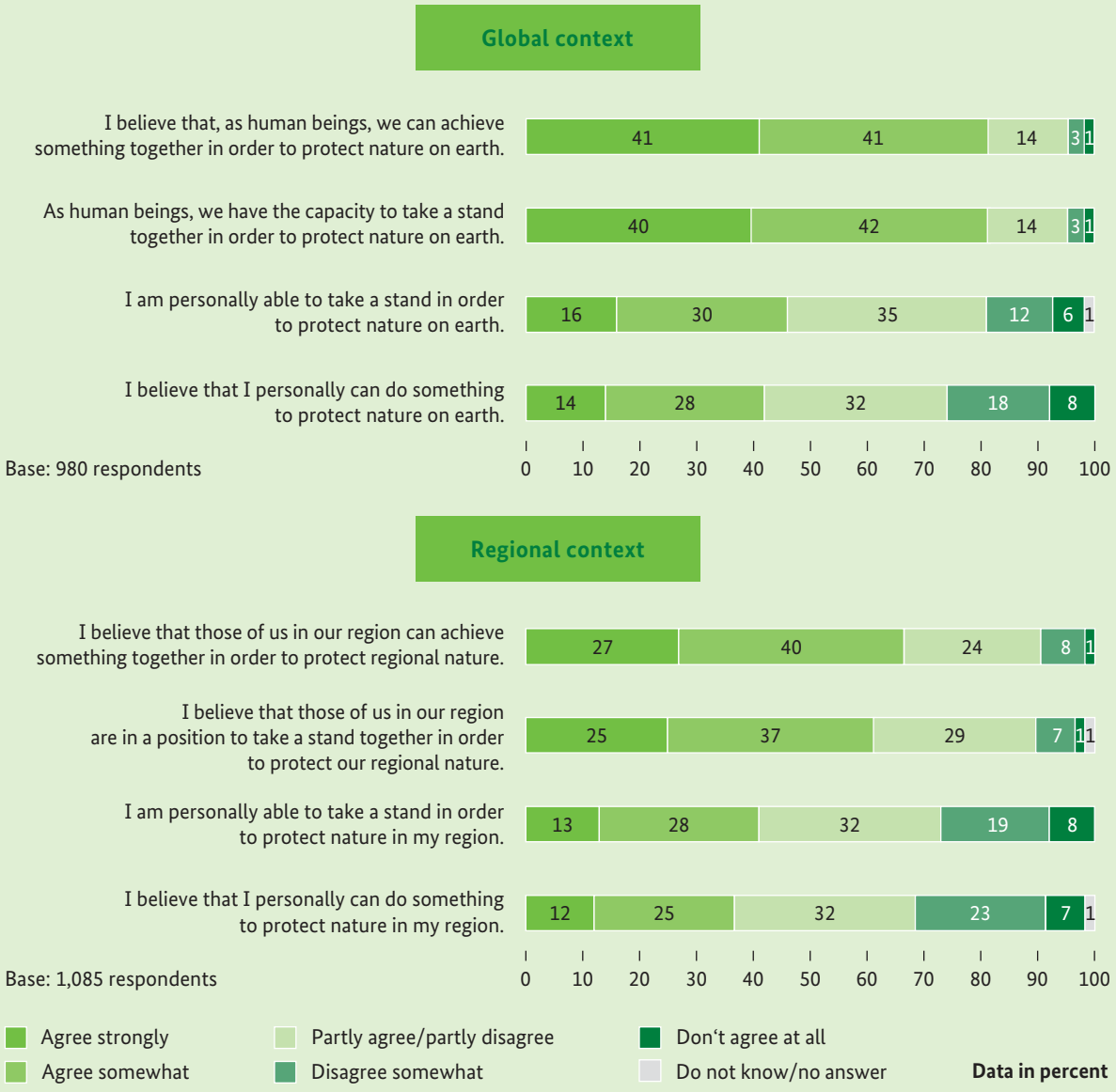
The weaker assessment of the perceived behavioural control of collective as well as individual action at the regional level as compared to the global may also be a cause for concern. If a positive assessment of the perceived behavioural control of one's own (collective or individual) action is a prerequisite for wanting (deciding, preparing) to take an action, then the present findings point towards a weaker capacity to mobilize individuals for regional nature conservation.

Older persons express less confidence in their ability to work towards global or regional nature conservation and to achieve something.

The age comparison shows that, on the whole, the oldest respondents have the least confidence that they can commit themselves to global or regional nature conservation and achieve something. Among other things, only 30 percent of people over the age of 65 believe that they can personally achieve something for regional nature conservation (both levels of approval); the average for the population is 37 percent. The educational background of respondents plays a role in measures aimed at regional nature conservation. In this case, the collective as well as personal effectiveness of persons with a low level of educational is rated below average. For example, only 32 percent of those with a modest level of formal education see themselves as being able to work for regional conservation (both levels of approval). The average is 41 percent. Gender comparison reveals differences in measures that relate to the global nature: here, women rate collective and personal effectiveness higher than men do. While 45 percent of women see themselves as able to do something to protect global nature (both levels of approval), for example, only 39 percent

Figure 20: Collective and personal perceived behavioural control in a global and regional context

Please tell me for each of these statements whether you agree with it strongly, somewhat, partly, not really or not at all.



of men share this view. The view of the size of the municipality is also worth mentioning. Here again the response behaviour in small and medium-sized cities is notable: whether global or regional conservation, it is always citizens of small and medium-sized cities (population of 20,000 to less than 100,000) who value the effectiveness of collective and individual action the highest. An example: In these cities, 80 percent are convinced that people in the region can achieve something collectively for the protection of regional nature (both levels of approval: 80 percent). 67 percent say this among all respondents, while in large cities with a population of at least 500,000, it is only 60 percent.

Only a few differences can be observed in the response behaviour of the social milieus: In the case of measures aimed at regional nature conservation, the effectiveness of collective and personal action is most strongly seen in the Liberal-Intellectual milieu, whereas collective as well as personal effectiveness is most often questioned in the Traditional milieu and Precarious milieu. For example, 51 percent in the Liberal-Intellectual milieu believe that one can personally achieve something for the protection of nature in the region, but only 24 percent in the Precarious milieu and 17 percent in the Traditional milieu believe this (both levels of approval).

Figure 21: Personal norms in a global and regional context

Many Germans see the protection of the global nature as a higher obligation than the protection of the regional nature.

Personal standards seem to be stronger in the global context than in the regional context (see Figure 21): 49 percent of respondents feel internally committed to contributing to the protection of global nature (both levels of approval), while 40 percent consider it a duty to protect regional nature. A look at the other end of the scale confirms this finding: While only 17 percent disagree with the feeling of inner commitment in the global context, in the regional context, it is 28 percent ("somewhat inaccurate" / "completely inaccurate"). Thus for many respondents, the protection of the global nature represents a higher inner obligation than the protection of the region.

Younger people feel less personal commitment to global and regional nature conservation.

The socio-demographic analysis reveals the following differences: Women feel a personal commitment to global nature conservation (both levels of approval: 54 percent) more often than men (45 percent). Moreover it is revealed that: Among those who embrace personal standards, the youngest respondents are under-represented, both in terms of global and regional conservation. As an example, 33% of those under 30 years of age have a sense of inner commitment to work for the protection of regional nature (both levels of approval); the average among all respondents is 40 percent. The local size comparison suggests that a commitment to the protection of global and regional nature in small and medium-sized cities is more often seen as a personal obligation than is true of the average: In cities with a population of 20,000 to less than 100,000, 61 percent see it as their duty to personally work towards the protection of global nature (both approval values) and 50 percent see it as their duty to be involved in the protection of regional nature. Among all respondents, this share is 49 percent in the global context and 40 percent in the regional context.

In a comparison of milieus, it is once again those in the Traditional milieu that least see personal norms in global and regional nature conservation. Only 35 percent of the members of this milieu feel obliged to make a contribution to global nature (both approval levels, average: 39 percent). In the regional context, this is 28 percent compared to 40 percent on average (both levels of approval). By contrast, there is a high inner commitment to regional nature conservation in the Liberal-Intellectual milieu. At least 54 percent say they are committed to protecting nature in the region (both levels of approval, average: 40 percent).

6 Biodiversity

The term "biological diversity" or "biodiversity" encompasses the diversity of plant and animal species, the diversity of ecosystems and habitats, as well as the diversity of genes, genetic information and genetic material. Preserving biodiversity and protecting it from damage or even destruction is a major challenge because it is in severe decline worldwide. Biological diversity continues to be lost in Germany as well (see the Red List[15] and BfN 2015):

- 29 percent of the approximately 14,000 native ferns and flowering plants studied are endangered or threatened with extinction, while just under four percent are considered extinct or lost;
- 27 percent of the more than 16,000 native species assessed are at least endangered, while eight percent even extinct or lost;
- approximately two thirds of the habitats are classified as endangered.

The protection of biological diversity has therefore long been one of the national and international areas of activity regarded as politically important. In November 2007, the Federal Government adopted the National Strategy on Biological Diversity (NBS). It implements the United Nations Convention on Biological Diversity (CBD) at national level and includes a catalogue of 330 objectives and around 430 measures in all biodiversity-relevant areas. A key objective of the strategy is to raise public awareness of the conservation of biodiversity and intact nature. In specific terms, the following goal was established: "In 2015, the preservation of biological diversity is one of the priority social tasks for at least 75 percent of the population. The importance of biological diversity is firmly anchored in social consciousness. People's actions are increasingly geared to this and lead to a significant slow-down of the strain on biological diversity" (BMU 2007, page 60 et seq.).

In order to make these requirements measurable and thus empirically tangible, an indicator has been developed which indicates the degree to which this objective is fulfilled (see Kuckartz and Rädiker 2009). The social indicator, "awareness of biological diversity", is part of the indicator set of the National Strategy on Biological Diversity (Ackermann et al., 2013). The data used for its calculation have been collected through nature awareness studies every two years since 2009. This chapter presents this indicator including the empirical findings of the questions underlying the calculation of the indicator.

6.1 Overall indicator: Awareness of biodiversity

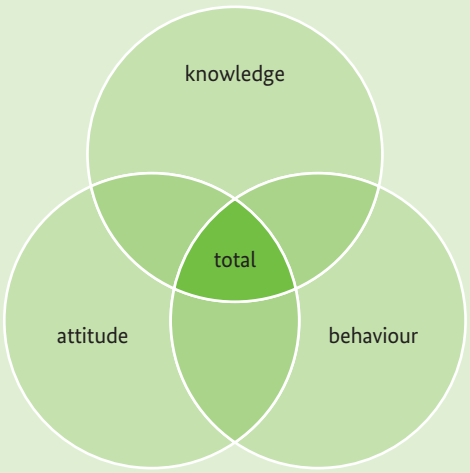
The social indicator, "awareness of biological diversity", consists of the sub-areas, "knowledge", "attitude" and "willingness to act". For each of these sub-areas, requirements are set that correspond to the objectives of the National Strategy on the biological diversity. Based on these requirements, a sub-indicator is calculated for all three areas:

- The **indicator "knowledge"** comprises the familiarity and the understanding of the term, "biological diversity".
- The **indicator "attitude"** determines the appreciation of biological diversity.
- The **indicator "willingness to act"** measures the willingness to make one's own contribution to the protection of biodiversity.

The question set for calculating the three sub-indicators consists of two questions regarding knowledge, seven questions regarding attitude and six questions regarding the willingness to act.[16] The overall indicator is computed from the three sub-indicators and records the percentage of the population that meet the requirements in all three areas (knowledge, attitude, willingness to act). According to this definition, the level of the overall indicator is the percentage of persons who (1) can name at least one sub-component of biological diversity, (2) express a positive attitude towards biodiversity, and (3) indicate a high willingness to act to contribute to the preservation of biological diversity.

Since according to the selected structure of the overall indicator, it is not sufficient if a person fulfils the defined requirements in only one or two sub-areas (for example, sufficient knowledge and positive attitude, but no sufficient willingness to act), the overall indicator can be no higher than the lowest sub-indicator (see also Figure 22).[17]

Figure 22: Sub-indicators and overall indicator "awareness of biodiversity"



The social awareness of the importance of biological diversity has scarcely changed in recent years.

According to current data, 42 percent of Germans are familiar with at least one of the three aspects of biological diversity (indicator "knowledge"), 54 percent are sufficiently sensitized to the protection of biological diversity (indicator "attitude"), and 56 percent express high willingness to contribute to the preservation of biodiversity (indicator "willingness to act"). 25 percent meet the requirements in all three sections (overall indicator). Thus, it can be verified that one in four Germans has a sufficiently high level of awareness of biological diversity. The proportion in the group of people with a high level of education (32 percent) and in the group with a net household income from 3,500 euros (30 percent) is much higher than in the population average. By contrast, those under 30 years of age (21 percent), those with a low level of formal education (21 percent) and those with a net household income of 1,000 to 1,999 euros (17 percent) are under-represented.

A comparison of milieus shows that members of the Liberal-Intellectual milieu most often meet all the requirements of the overall indicator (43 percent) by far. Those in the Socio-ecological milieu, the Established Conservative milieu and the High Archiever milieu have a higher than average awareness of the importance of biological diversity. By contrast, the figures for the Traditional, Precarious and Escapist milieus are significantly lower (see Figure 23). The figure for the overall indicator has decreased in the Movers and

Figure 23: Overall indicator by milieu

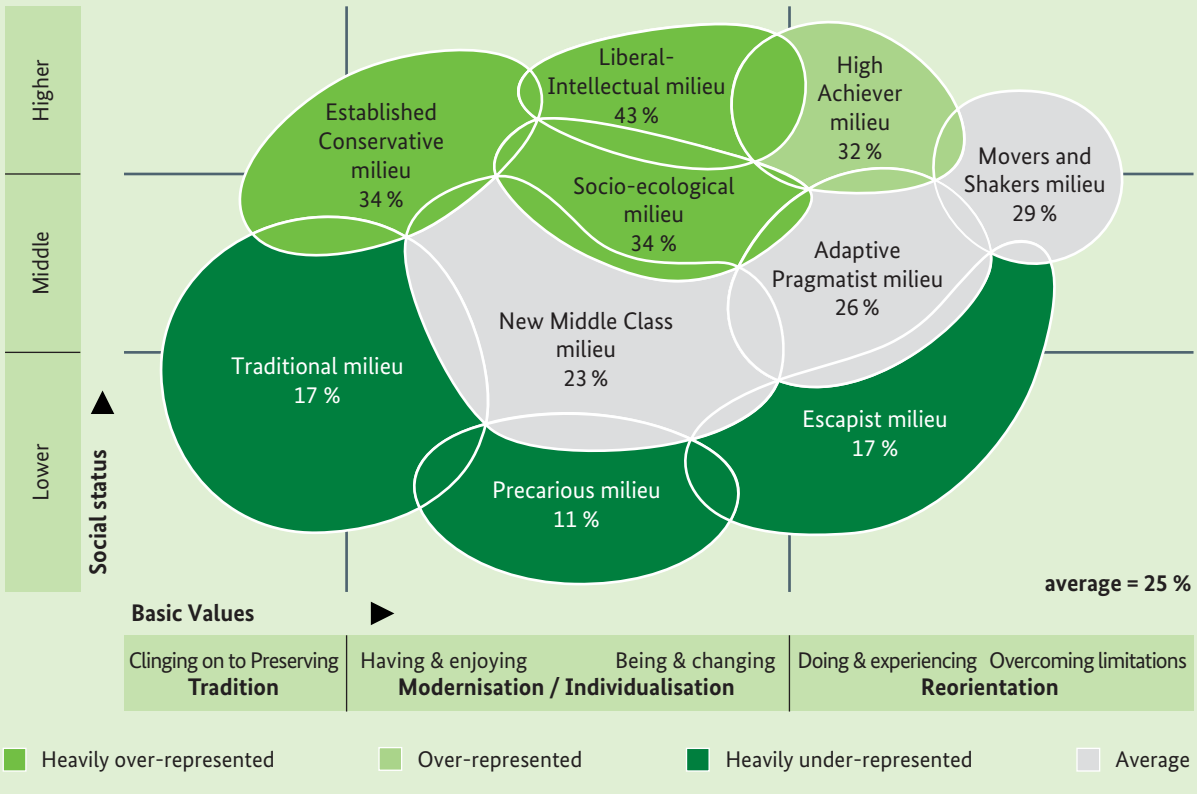


Table 10: Temporal development of the indicator "awareness of biological diversity"

Data in percent	2009	2011	2013	2015	2017
Sub-indicator "knowledge"	42	41	40	41	42
Sub-indicator "attitude"	54	51	54	53	54
Sub-indicator "willingness to act"	50	46	50	59	56
Overall indicator	22	23	25	24	25

Shakers milieu as compared to 2015 (2015: 35 percent, 2017: 29 percent), whereas it has increased slightly in the High Achiever milieu (2015: 28 percent, 2017: 35 percent). There is also an increase in the New Middle Class milieu (2015: 16 percent, 2017: 23 percent).

Compared over time, the overall indicator has been relatively stable and has fallen between 22 and 25 percent since the beginning of the survey in 2009. Even in the "knowledge" and "attitude" sections, only slight fluctuations in the measured value of up to three percentage points can be detected. The sub-indicator, "behavioural willingness", is somewhat different: The willingness to make a contribution to the preservation of biological diversity increased by nine percentage points between 2009 and 2015. The current figure has dropped by three percentage points as compared to 2015, however (see Table 10).

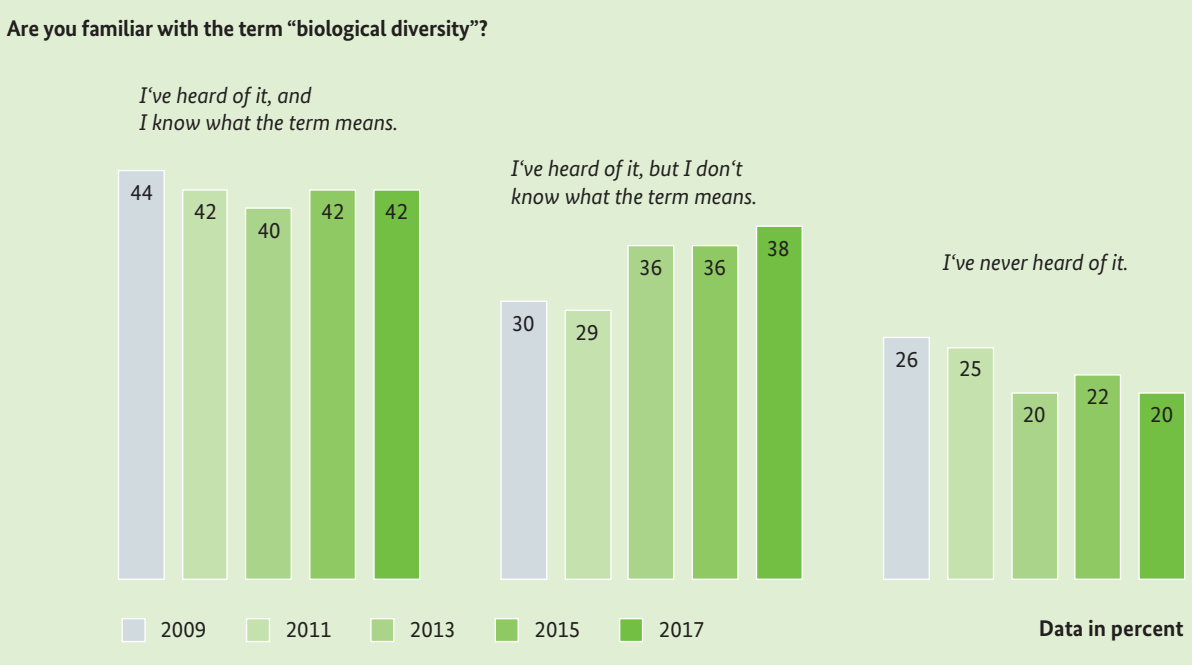
The survey results used to calculate the sub-indicators are presented in the following sections, for a more detailed examination of the findings.

6.2 Sub-indicator: Knowledge

The majority of Germans do not know what the term "biological diversity" means.

20 percent of Germans have never heard of the term biodiversity. 38 percent have heard of it, however they do not know what biological diversity means. This leaves 42 percent who not only know the term "biological diversity", but also know what it means (see Figure 24).

Figure 24: Familiarity with the term "biological diversity" compared over time



It is above all those who are well-educated and well-paid (net household incomes starting from 3,500 euros) who know the meaning of biodiversity (well-educated: 55 percent, high earners: 47 percent). By comparison, individuals with low formal education are not very familiar with the term. Within this group, 33 percent indicate that they do not know what biological diversity means, while in 2017, an additional 26 percent indicate that they have never heard of it.

The comparison of lifeworlds shows that the significance of biodiversity in terms of content is strongly linked to the social situation. Those in milieus of a socially elevated position are much more frequently familiar with what the term, "biological diversity" means than those in milieus having a socially modest position (see Figure 25). More than twice as many members of the Liberal-Intellectual milieu can connect the term with its content (63 percent) than members of the Traditional milieu (31 percent), Precarious milieu (27 percent) and those in the Escapist milieu (28 percent).

There are no significant changes vis-à-vis 2015 (see Figure 24): As in the previous survey, the proportion of those who claim to know what the term means is 42 percent. The number of people who do not know the meaning, but have heard the term before, has barely increased. Only slightly fewer people indicated that they have no idea what to make of the term "biological diversity" than two years ago.

Biological diversity is most often equated with the diversity of species.

Nine out of ten respondents who are familiar with the term "biodiversity" thus associate it with the diversity of plant and animal species (see Figure 26). After all, 61 percent (also) consider the diversity of ecosystems and habitats. Those with a high level of education (67 percent) and a high net household income starting at 3,500 euros (69 percent) know this more frequently. The fact that biodiversity also includes the diversity of genes, genetic information and genetic material is less well known to respondents (38 percent). Again, it is the well-educated (43 percent) and respondents with the highest income level (48 percent), who have more knowledge about this.

What is interesting is the finding that, unlike the previous surveys, the diversity of ecosystems is mentioned in no other milieu more frequently than

Figure 25: Familiarity with the term "biological diversity" by milieu

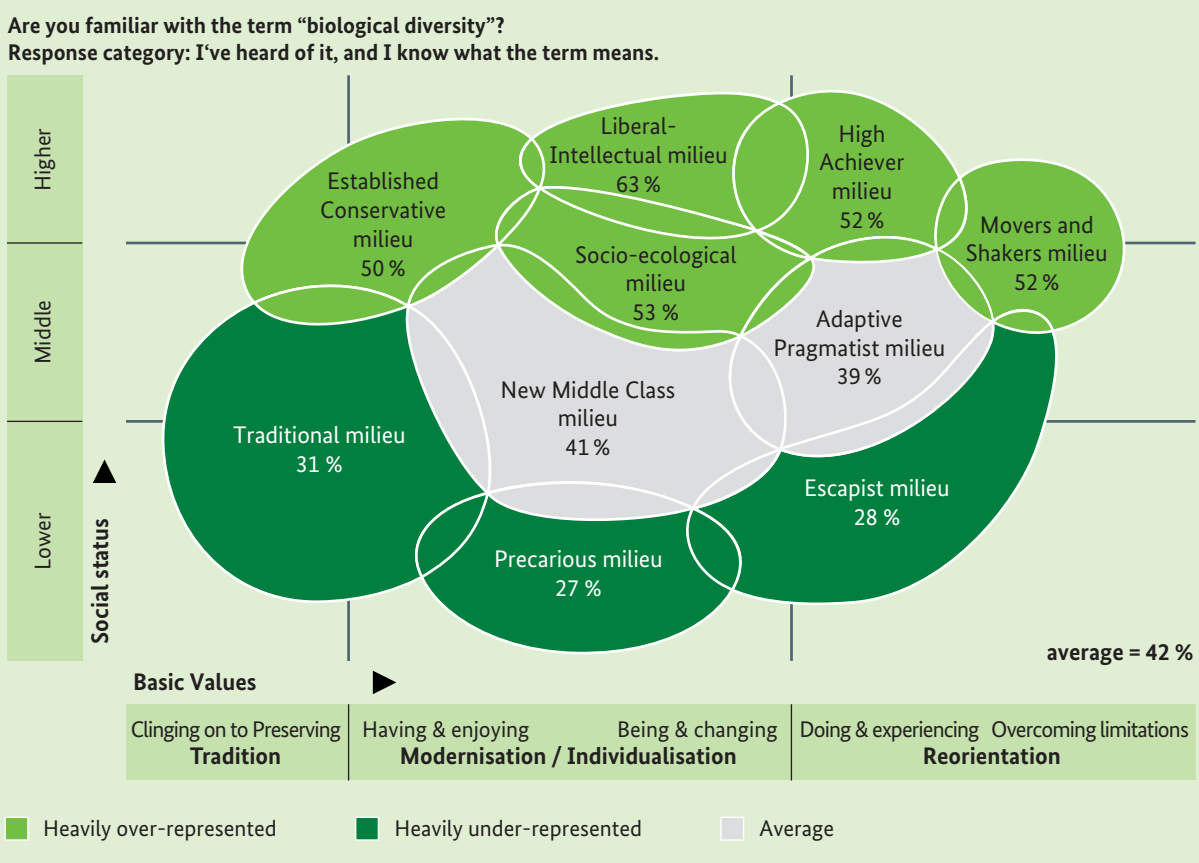
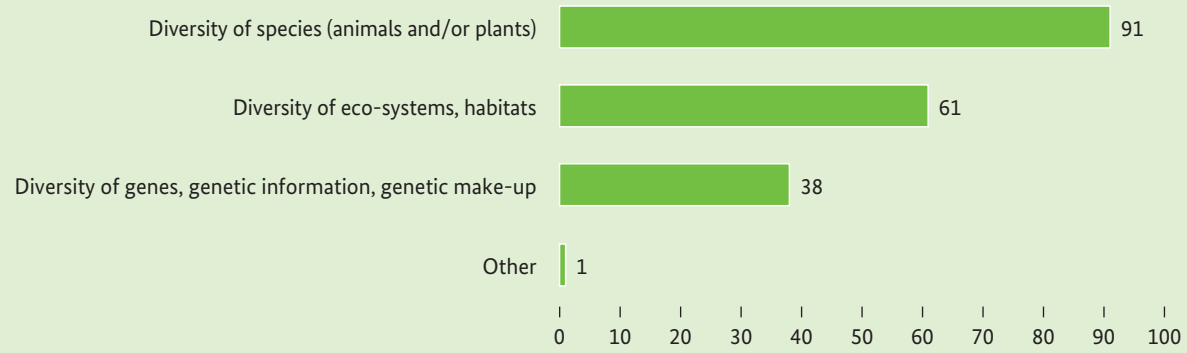


Figure 26: Understanding of the term "biological diversity"

Can you please tell me what the term "biological diversity" means to you? (Open question)



Basis: 860 cases; only respondents who have at least heard of "biological diversity" before

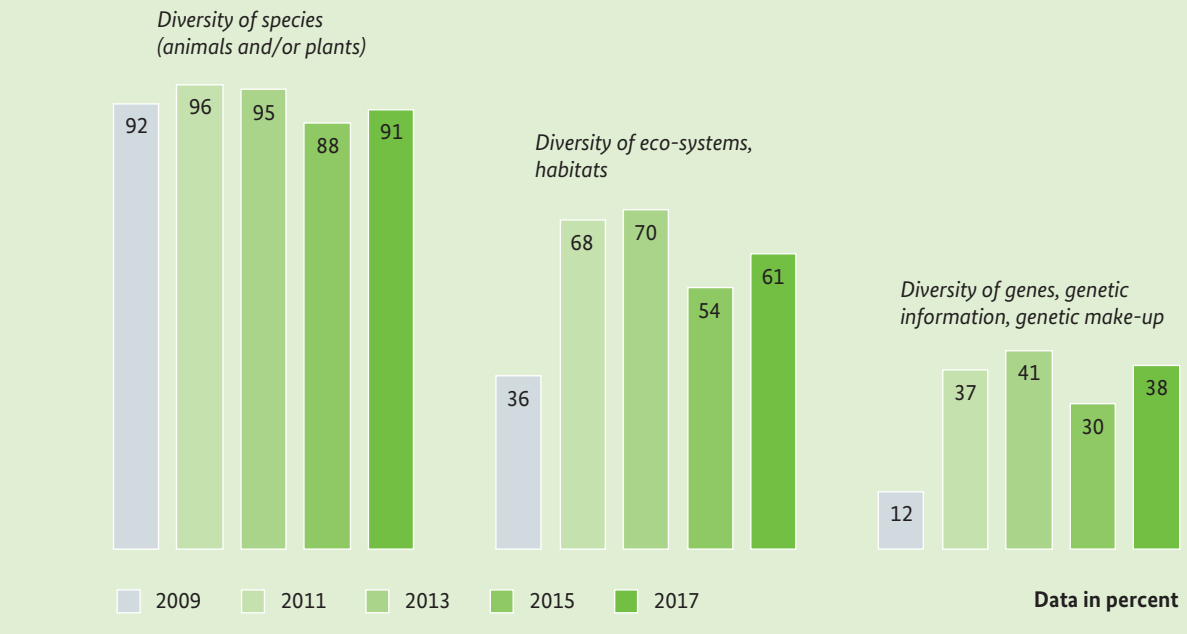
Data in percent

in the High Achiever milieu (73 percent). One possible explanation could be that over time, this aspect of biodiversity has become particularly important for the highly economic and efficiency-oriented members of the High Achiever milieu, since the protection of ecosystems often clashes with short-term economic interests, but secures economic prosperity in the medium and long term. In contrast, the number of those who consider the diversity of ecosystems when thinking about biodiversity is lowest in the Escapist milieu (48 percent).

When compared to 2015, knowledge about the three partial aspects of biological diversity had increased within the group of those familiar with the term: The percentage of respondents who associate biological diversity with species diversity has increased by three percentage points. The percentage of those who understand biodiversity (among other things) as the diversity of ecosystems has risen by seven percentage points. In 2015, 30 percent were aware that biological diversity (also) equates with the diversity of genes, while in 2017 it is 38 percent. Nonetheless, the current figures for all three sub-aspects are still below the 2013 levels (see Figure 27).

Figure 27: Understanding of the term "biological diversity" compared over time

Can you please tell me what the term "biological diversity" means to you? (Open question)



Data in percent

6.3 Sub-indicator: Attitude

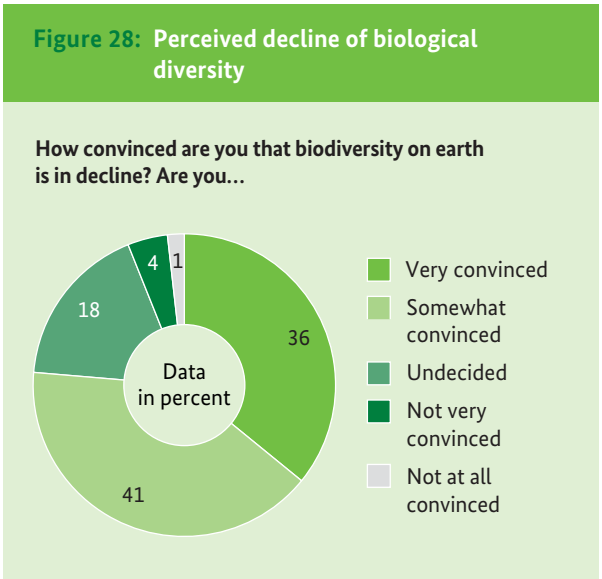
Following the questions in the "knowledge" section, all respondents were presented with a definition of biological diversity in order to bring them to a comparable level of knowledge with regard to the meaning of the term, and so that they could answer the questions concerning attitude.[18]

The vast majority of the population is aware of the decline in biological diversity.

77 percent of respondents believe that biological diversity on earth is diminishing, 18 percent are undecided, and only a fraction of five percent believe it is somewhat not diminishing or not diminishing at all (see Figure 28). It is striking that the percentage of those who are firmly convinced of the decline in biological diversity has increased by ten percentage points as compared to 2015 ("very convinced": 2015: 26 percent, 2017: 36 percent). It is those with a high level of education in particular who are sensitized to the threat to biological diversity (42 percent).

In the education-oriented and environmentally-aware Socio-ecological ("very convinced": 59 percent, "very / somewhat convinced": 89 percent) and Liberal-Intellectual milieus ("very convinced": 57 percent, "very / somewhat convinced": 84 percent), the awareness of the decline in biological diversity is more pronounced than in the population average ("very convinced": 36 percent, "very / somewhat convinced": 77 percent). Even in the comparatively young lifeworld of the Movers and Shakers milieu, the problem of decreasing biodiversity is particularly present ("very convinced": 50 percent, "very / somewhat convinced": 88 percent). Awareness is the least pronounced and least widespread in the less educational- and information-oriented Precarious milieu ("very convinced": 29 percent, "very / somewhat convinced": 69 percent) and in the Escapist milieu ("very convinced": 30 percent, "very / somewhat convinced": 64 percent).

Figure 28: Perceived decline of biological diversity



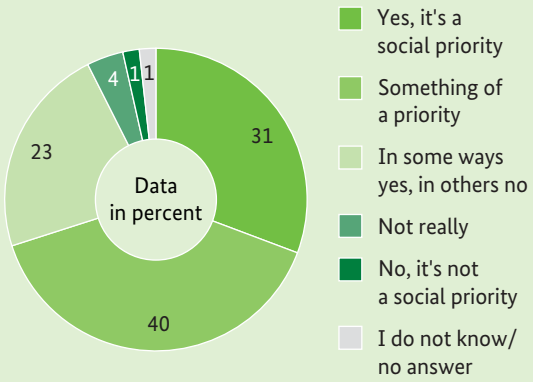
For a large part of the population, maintaining biodiversity is a top social priority.

Asked whether conservation of biodiversity is a top social priority, 31 percent unconditionally respond with "yes", while another 40 percent with "somewhat yes" (see Figure 29). Thus, a rather stable perception of a political pressure to act can be observed in the population and the agreement was only slightly higher in the previous study (2015: both levels of approval: 74 percent). The approval ratings for those who are under 30 years of age (61 percent), males (69 percent), and persons with a modest level of formal education (69 percent) are below the average.

Differentiated according to social milieus, the following differences can be identified: The view that the conservation of biodiversity is one of the top social priorities is most often expressed in the Liberal-Intellectual milieu ("yes" / "somewhat yes": 81 percent) and Socio-ecological milieu ("yes" / "somewhat yes": 86 percent). Among those in the Liberal-Intellectual milieu, 50% of people unconditionally consider the preservation of biological diversity to be a central social concern ("yes": 52 percent); among those in the Socio-ecological milieu, it is 46 percent. Even those in the Adaptive Pragmatist milieu rate the conservation of biological diversity as a top social priority ("yes" / "somewhat yes": 79 percent, "yes": 34 percent) to an above-average extent. In the milieus which are less connected to nature, including the Escapist and Precarious milieus, the awareness of the problem is less pronounced. Although over 60 percent respectively of those in each of these milieus make the preservation of biological diversity a top social priority ("yes" / "somewhat yes": those in the Escapist milieu: 62 percent, Precarious milieu: 61 percent), those giving full approval comprise only 24 percent in the Escapist milieu and 22 percent in the Precarious milieu.

Figure 29: Perceived social importance of conserving biodiversity

To what extent do you personally consider the preservation of biological diversity to be social priority? Would you say,...



The vast majority of Germans fear that the decline in biodiversity has negative consequences for their own lives, but many do not feel a personal responsibility for the conservation of biological diversity.

For most Germans, the immediate consequences that a loss of biodiversity can have on one's own life are a central argument for the preservation of biological diversity: 81 percent of respondents "completely" or at least "somewhat" shared the view that biodiversity in nature benefits their wellbeing and quality of life. Moreover, 70 percent say it would personally affect them if biological diversity fades (see Figure 30). In particular women (73 percent), those who are financially well-off (household incomes starting at 3,500 euros: 74 percent) and those with a high level of education (76 percent) associate negative consequences for their own lives with the decline in biodiversity.

The fact that the conservation of biodiversity is an important concern for many Germans is also demonstrated by the fact that demands for political measures are met with approval from more than three quarters of respondents: 78 percent "completely" or at least "somewhat" agree with supporting poorer nations in protecting their native biodiversity, 77 percent advocate the use of land areas for settlements and transport routes in order to preserve biodiversity. Both demands have the highest approval ratings among those in the group with the high level of education (both levels of approval: 83 percent and 80 percent, respectively). By contrast, the lowest ratings are found in the group of those under 30 years of age (both levels of approval: 73 percent and 68 percent, respectively). Compared to the previous survey, support for poorer states has not changed significantly (highest level of approval: 2015: 33 percent, 2017: 30 percent, both levels of approval: 2015: 77 percent, 2017: 78 percent). The percentage of those who support the reduction of the land use for housing developments and traffic in order to protect biological diversity has increased slightly:

Figure 30: Personal significance of biological diversity

Please tell me in each case to what extent you agree with the statement.

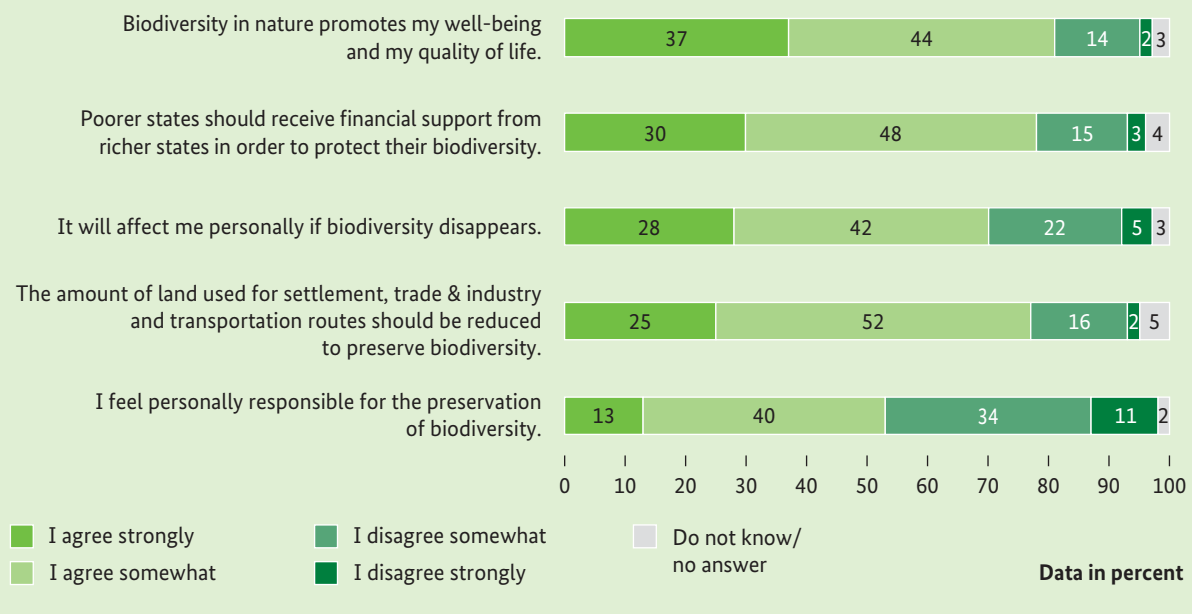
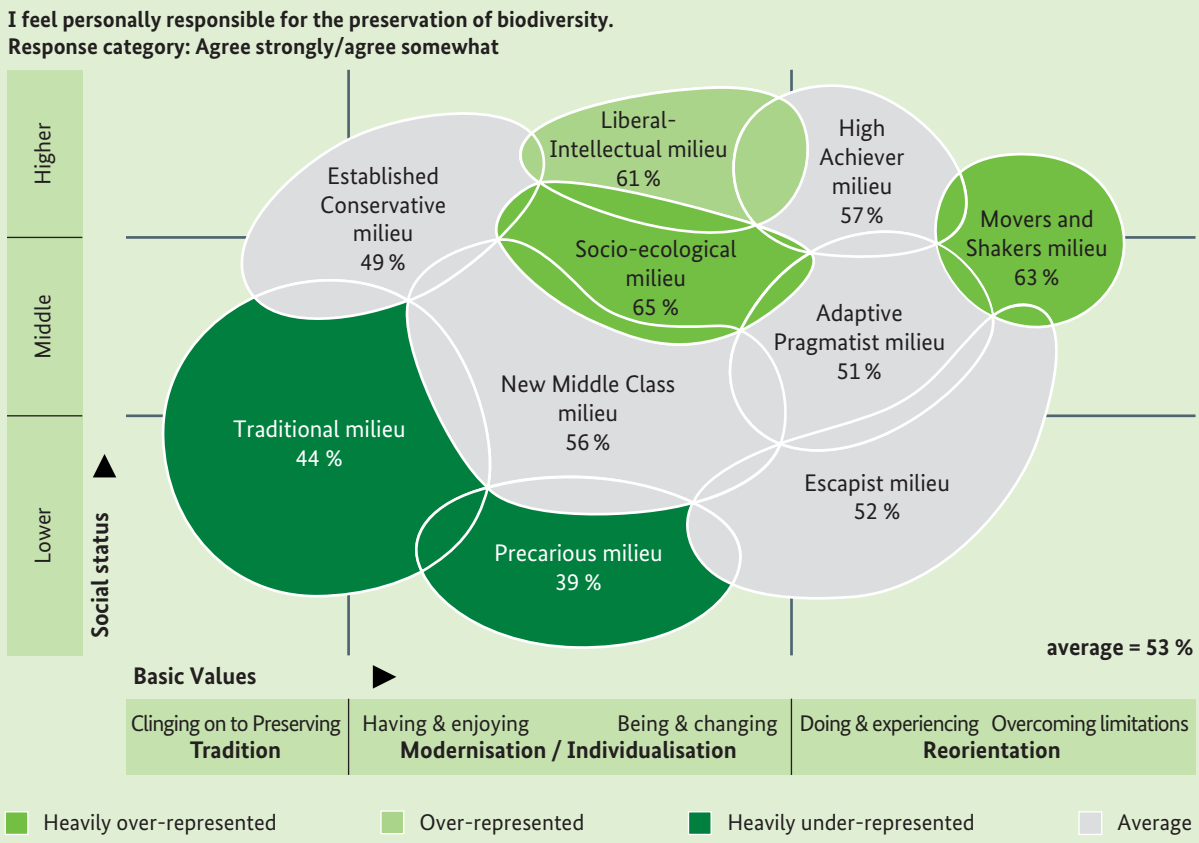


Figure 31: Perceived responsibility by milieu



In 2015, 26 percent stated that they were "completely" in favour, and 47 percent "somewhat" in favour, while in the current survey, it is 25 percent who completely agree and 52 percent who somewhat agree.

Although most respondents attribute a high degree of personal importance to biological diversity, many do not realize that they are also responsible for protecting biodiversity themselves: Only 53 percent say that they feel responsible for the preservation of biological diversity (both levels of approval), and 45 percent do not see themselves as having an obligation. More women than men (both levels of approval: 55 percent compared to 51 percent) and significantly more well-educated individuals as compared to those with a modest level of formal education than formally low educated (both levels of approval: 61 percent compared to 48 percent) feel that they themselves are responsible. When compared over time, the perceived obligation to take responsibility has not changed significantly since 2009 (both levels of approval: 2009: 53 percent, 2011: 50 percent, 2013: 51 percent, 2015: 56 percent, 2017: 53 percent).

The social milieus differ, in part considerably, in their appreciation of biodiversity. This is reflected above all in their attitude of being personally responsible for the protection of biodiversity. Those in the Precarious and Traditional milieus feel even less of a sense of duty than in the rest of the population. By contrast, the sense of responsibility expressed in the education-oriented milieus with basic values that are pronouncedly post-material – those in the Liberal-Intellectual milieu, Socio-ecological milieu and Movers and Shakers milieu – is much more widespread (see Figure 31). Nevertheless, even among the ecological pioneers of the Socio-ecological milieu, only one-fifth are fully committed to assuming responsibility (highest approval level: Socio-ecological: 20 percent, Movers and Shakers milieu: 16 percent, Liberal-Intellectual milieu: 15 percent, Precarious milieu: nine percent, Traditional milieu: seven percent, population on average: 13 percent).

6.4 Sub-indicator: Willingness to act

Germans show a great willingness to contribute actively to the preservation of biological diversity; what remains in question is the extent to which the statements are also reflected in behaviour.

The willingness to make a contribution to the protection of biological diversity, which was primarily expressed verbally, is widespread in the population (see Figure 32): for example, 81 percent are very willing or somewhat willing to switch to buying eco-friendly cosmetics. Approximately three fourths of respondents are willing to inform friends and acquaintances about the protection of biodiversity and to inquire about current developments in the area of biological diversity. Almost 70 percent stated they would be willing to use a guidebook that provides information about endangered species of fish when shopping, for example (for more on this, see Chapter 2.3, "Sustainable fish consumption"). Still, 58 percent declare themselves very willing or somewhat willing to donate for the care and preservation of a protected area. A good third of the population can imagine active participation in a nature conservation association.

The stated levels of willingness indicate that there are activatable potentials for behaviour patterns that contribute to the conservation of biological diversity. Nevertheless at the highest approval level for almost all of the listed behaviours, the willingness to actively contribute to the preservation of biological diversity falls significantly below 50 percent.

The socio-demographic analysis reveals that the willingness to act increases with the level of education and overall, is slightly more pronounced among women than among men (see Table 11). It is also striking that most of these behaviours are less well received by the youngest respondents (those under 30 years of age) than by persons 30 years of age and above. It has been possible to observe these socio-demographic differences relatively consistently since 2009.

The willingness to switch to eco-friendly cosmetics and drugstore articles has increased.

Compared to the last survey period, the unlimited willingness to switch to eco-friendly cosmetics and drugstore products has increased by six percentage points ("very willing": 2015: 40 percent, 2017: 46 percent). On the other hand, the willingness to sensitize friends and acquaintances for the protection of biological diversity has decreased by five percentage points within two years ("very willing": 2015: 32 percent, 2017: 27 percent). Nevertheless, this is still more people than in 2013 (21 percent). The proportion of those who are able to imagine their active involvement in a nature conservation association has also

Figure 32: Willingness to play an active part in conserving biodiversity

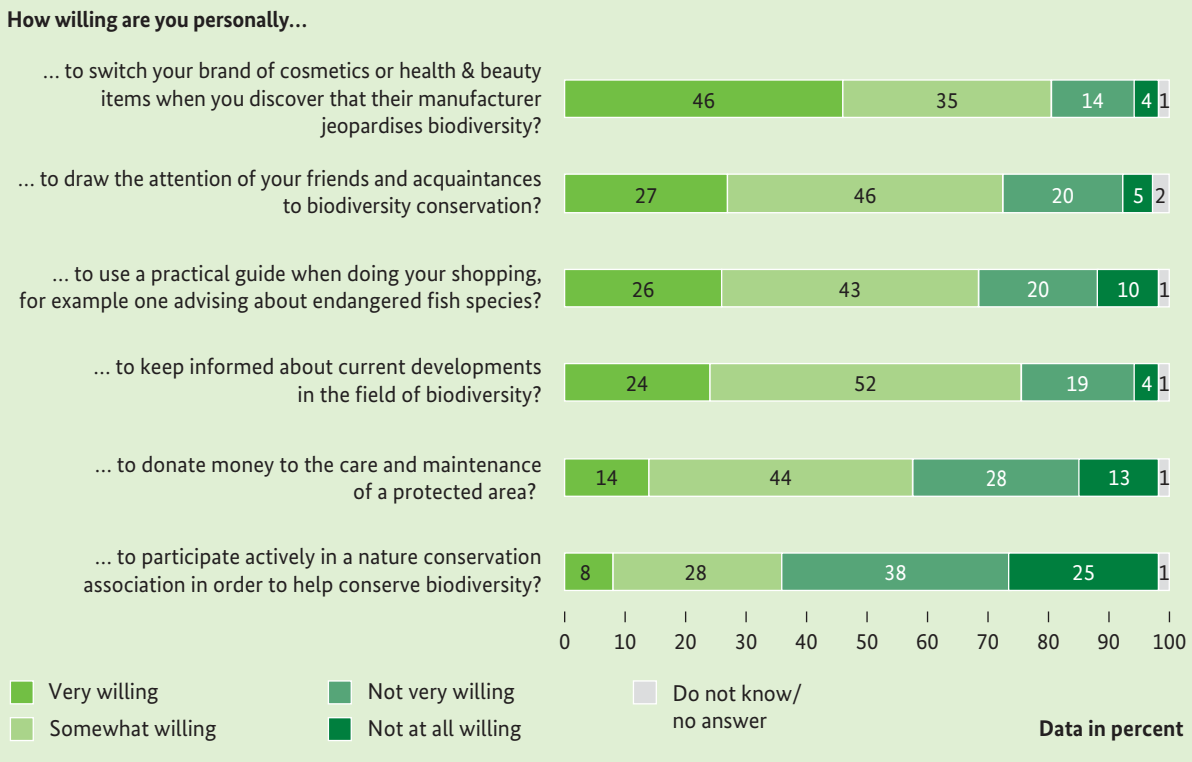


Table 11: Willingness to play an active part in conserving biodiversity, by gender, age and level of education

How willing are you personally...

Response category: Very willing Data in percent	Average	Gender		Age (years)				Education		
	Ø	M	F	up to 29	30 to 49	50 to 65	over 65	low	mid	high
to switch your brand of cosmetics or health & beauty items when you discover that their manufacturer jeopardises biodiversity?	46	43	48	38	46	48	47	42	43	54
to draw the attention of your friends and acquaintances to biodiversity conservation?	27	27	27	21	32	27	26	23	26	35
to use a practical guide when doing your shopping, for example one advising about endangered fish species?	26	24	28	20	31	25	26	22	25	34
to keep informed about current developments in the field of biodiversity?	24	22	27	21	27	26	21	18	24	33
to donate money to the care and maintenance of a protected area?	14	12	15	9	17	15	12	11	14	18
to participate actively in a nature conservation association in order to help conserve biodiversity?	8	8	8	10	8	8	6	5	8	12

Heavily over-represented | Over-represented | Under-represented | Heavily under-represented

declined again ("very willing": 2009: eleven percent, 2011: eight percent, 2013: nine percent, 2015: 13 percent, 2017: eight percent).

A high degree of willingness to contribute to the protection of biological diversity does not necessarily lead to ecologically sustainable consumption.

When looking at the social milieus, it is noticeable that of all the behavioural options listed, the willingness to switch to eco-friendly cosmetic products is the most strongly pronounced across all milieus. More than half of those in the Liberal-Intellectual, Socio-ecological and Movers and Shakers milieus are "very willing" to do so (Liberal-Intellectual milieu: 66 percent, Socio-ecological milieu: 57 percent, Movers and Shakers milieu: 54 percent). The willingness to find out for oneself and others about the topic of biodiversity is present first and foremost in those of the Liberal-Intellectual milieu: 48 percent are "very willing" to make friends and acquaintances aware of the protection of biodiversity, 42 percent can very well imagine using a guide while shopping, and 39 percent express a very high willingness to inquire about current developments in the field of biodiversity. Also, the willingness to donate to the care and preservation of a protected area is highest in the Liberal-Intellectual milieu ("very willing": 29 percent as compared to 14 percent in the population average). Those in the Movers and Shakers milieu can best imagine working actively in a nature conservation association ("very willing": 13 percent, as compared to 8 percent in the population at large). By contrast, in the case of nearly all behaviours listed, the personal willingness to protect biological diversity is lowest among those in the Precarious and Escapist milieus.

The overall higher willingness of those in the socially elevated milieus to advocate the preservation of biodiversity or exhibit behaviour that does not further endanger biodiversity does not necessarily mean that their share in the destruction of nature is less than that of members of socially disadvantaged milieus. Especially in well-established lifeworlds with their own house or large apartment, frequent long-distance travel and a high standard of consumption, their share in the destruction of nature will be higher than in less eco-sensitive milieus, but where a lower than average income or maxims such as economy and modesty create a smaller ecological footprint. For example, the lower income level in the Precarious milieu results in the fact that pronounced consumption-materialistic wishes, let alone holiday trips to distant countries, are not feasible. Those in the Liberal-Intellectual, Socio-ecological and Movers and Shakers milieus purchase environmentally friendly products more frequently, however they often endanger nature and biological diversity even more, since their lifestyle is completely different (for example, frequent long-distance travel).

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Abbreviations

BfN	Federal Agency for Nature Conservation
BMU	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BMUB	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
CAPI	Computer Assisted Personal Interview
Cas	CRISPR-associated protein
CBD	Convention on Biological Diversity
CRISPR	Clustered Regularly Interspaced Short Palindromic Repeats
DNA	Deoxyribonucleic acid
EEZ	Exclusive Economic Zone
e.g.	exempli gratia
et al	et alii/et aliae/et alia
EU	European Union
e.V.	Registered association
FFH	Fauna-Flora-Habitat Directive
GESIS	German Social Science Infrastructure Services Association
GmbH	Limited liability company
GMO	Genetically Modified Organism
i.e.	id est
MSC	Marine Stewardship Council
NBS	National Strategy on Biological Diversity
PIK	Potsdam Institute for Climate Impact Research
SPSS	Statistical and analytic software from IBM (Statistical Package for the Social Sciences)
UBA	Federal Environment Agency
UN	United Nations
WWF	World Wide Fund For Nature

Basic count

Chapter 2: Marine conservation

A2.1 I would like to know what spontaneously comes to mind regarding the topic of marine nature. What does marine nature mean to you? Please list as many terms as you can think of. (Open question, multiple answers possible) (Figure 2)

Data in percent		Data in percent	
Wildlife	73	Phenomena and events	18
Habitats and structures	42	Exploitation	16
Plant life	40	Other associations	6
Protection and threat	39		

Wildlife – subcategories

Data in percent		Data in percent	
Fish	47	Diversity of species/biodiversity in the wildlife	2
Corals/coral reefs/sea anemones	27	Starfish	2
Living beings/animals in/out of the sea	21	Turtles/sea turtles	1
Mussels	12	Penguins	1
Whales	9	Octopuses (octopus, squid)	1
Crustaceans/prawns/crabs/shrimp	8	Seahorses	1
Birds/gulls/swans/ducks	6	Sea urchins	1
Jellyfish	5	Snakes/sea snakes/water snakes	1
Seals/sea lions	5	Insects/worms/snails	1
Dolphins	5	Herring	1
Sharks	5	Polar bears	1
Plankton/microorganisms	3	Other	3

Habitats and structures – subcategories

Data in percent		Data in percent	
Sea/ocean/water	15	Seabed, sea floor	2
Beach/dunes/sand	14	Deep sea	2
Stones/gravel	4	Minerals	1
Marine nature	4	Rivers/canals/fjords	1
Tidal flats	3	Marine volcanoes/mountains	1
Islands	3	Coasts/shores	1
Cliffs/crags	2	Ice/icebergs	1
North Sea	2	Other	6
Baltic Sea	2		

Plant life – subcategories

Data in percent		Data in percent	
Plants/algae/seaweed	40	Diversity of species/biodiversity in plant life	1

Protection and threat – subcategories

Data in percent		Data in percent	
(Plastic) waste	11	Contamination with pollutants/waste water/ chemicals/fertilizer	2
Clean seas/clean water	11	Ecological balance	2
Overfishing	6	Clean/fresh air	1
Environment/nature conservation in general	6	Destruction of the seas	1
Oil pollution	5	Destruction of the coral reefs	1
Contamination of the seas in general	4	Whaling	1
Decline in the fish population/fish mortality	3	Clean nature/environment	1
Extinction of species	3	Increase in water temperature	1
Healthy animals/plants	3	Climate change	1
Appeal for more environmental/nature conservation	3	High water/floods	1
Diversity of species/biodiversity	3	Other	3
Rise in the sea level	2		

Phenomena and events – subcategories

Data in percent		Data in percent	
Waves/current	8	Sound of the sea	1
Tides/low tide/high tide	5	Colours/multi-coloured/blue/turquoise	1
Wind/storms/tsunami	5	Other	1
Salt water/salty water	4		

Exploitation – subcategories

Data in percent		Data in percent	
Ships/boots	5	Vacation/recovery	2
Fishing	4	Wind turbines/wind farms	2
Water sports/swimming/diving	3	Natural resources/treasures	1
Gas production/oil exploration/drilling rigs	2	Other	2

Other associations – subcategories

Data in percent		Data in percent	
Nature in general	1	Human beings	1
Summer/sun	1	Other	3

A2.2 The following statements refer to your opinion regarding marine conservation areas. Nature conservation areas are areas that are considered important for the conservation of nature. More marine conservation areas should be established in order to preserve nature in the sea. Do you agree strongly, agree somewhat, disagree somewhat or don't agree at all with the following statements? (Figure 4, Figure 5)

Data in percent	Agree strongly	Agree somewhat	Disagree somewhat	Don't agree at all	Do not know/ no answer
I think oil and gas pipelines have no business being in marine conservation areas.	66	26	7	0	1
There should be no fishing in marine conservation areas.	57	33	8	1	1
More marine conservation areas should be established in order to preserve nature in the sea.	56	37	5	0	2
Marine conservation areas should not have wind turbines.	48	31	15	3	3
Voluntary arrangements with fishermen in marine conservation areas are better than government regulations.	27	30	27	13	3

A2.3 Six large nature conservation areas in the open sea are being newly established in the German North Sea and Baltic Sea. Were you aware of this? (Figure 6)

Data in percent	
I have heard of this and I am well informed about it.	6
I have heard of this but I do not know any details about it.	34
I am not familiar with this and I have not heard anything about it.	60
I do not know	0

A2.4 What is your view on setting up these protected areas in the North Sea and Baltic Sea? Do you consider such areas as very important, somewhat important, somewhat unimportant or completely unimportant? (Figure 7)

Data in percent	
Very important	53
Somewhat important	41
Somewhat unimportant	3
Completely unimportant	1
I do not know/no answer	2

A2.5 The following questions no longer refer to nature conservation areas, but rather to the seas in general. Please give an assessment of the following aspects of the seas. Do you consider the following aspects to be a very significant problem, a somewhat significant problem, a somewhat insignificant problem or not a problem? (Figure 3, Table 1)

Data in percent	very significant problem	somewhat significant problem	somewhat insignificant problem	not a problem	do not know/ no answer
Plastic waste in the sea	78	18	3	0	1
Contamination with crude oil	71	25	4	0	0
Radioactive waste	66	24	6	1	3
Loss of marine plants and animal species	65	29	5	0	1
Loss of coral reefs and other marine habitats	64	29	5	1	1
Fertilizer and waste water	60	33	6	0	1
Overfishing	55	37	6	1	1
Rise in the sea level	53	34	10	2	1
Fishing methods that damage nature such as damaging the seabed with trawl nets	50	37	10	1	2
By-catch, i.e. catching fish and other marine animals and birds that go into the net, but that are not the actual targeted catch	44	41	12	1	2
Depletion of natural resources such as sand, gravel and minerals	37	41	16	2	4
Underwater noise caused by ships or offshore drilling, for example	31	41	20	3	5

A2.6 Please tell me, how often do you eat fish?

Data in percent	
More than once per week	4
Once per week	20
Several times a month	35
Once a month or less	33
Not at all	8

A2.7 How interested are you in information about the origin of fish and conditions, under which fish were caught, in order to make your consumption as eco-friendly and environmentally-friendly as possible? (Figure 8)

Data in percent	
I already know enough about that	7
That is of interest to me	59
That is of no interest to me	25
That is not applicable to me	8
I do not know/no answer	1

A2.8 The following statements refer to some opinions about the fishing industry. Do you strongly agree, somewhat agree, somewhat disagree or don't agree at all with these statements? (Figure 9, Figure 10, Table 2)

Data in percent	Agree strongly	Agree somewhat	Disagree somewhat	Don't agree at all	Do not know/ no answer
I would like to be able to rely on the fact that fish products from endagered species are not sold on the market.	59	33	7	1	0
I consider the labelling of fish products from nature-friendly fishing to be very important.	51	39	8	1	1
In order for the fishing industry to do more for marine conservation, stricter rules and laws are needed, even though this would increase fish prices.	38	45	13	2	2
When I eat sea fish, I make sure that these are not endangered species.	31	35	26	7	1
In order for the fishing industry to do more for marine conservation, the government should give it more financial support, even if it costs tax money.	30	47	17	3	3
I eat little fish in order to make a personal contribution to the preservation and conser-vation of fish stocks.	10	27	44	19	0

A2.9 Please tell me next whether you are familiar with this seal/logo. (Figure 11)

Data in percent	
I am familiar with this seal and I know what it means.	24
I am familiar with this seal but I do not know what it means.	31
I am not familiar with this seal.	39
I do not know.	6

Chapter 3: Energy transition

A3.1 Let's move on to another topic. I would now like to speak with you about the energy revolution. Do you think the energy transition towards predominantly renewable energies is the right way to go? (Figure 12, Figure 13, Table 3)

Data in percent	
Yes	61
Undecided	30
No	7
Do not know/no answer	2

Chapter 4: Agro-genetic engineering

A4.1 Please tell me whether you find the following measures very important, somewhat important, somewhat unimportant or completely unimportant: The use of genetically modified organisms in farming will be banned. (Figure 14, Table 4, Table 5)

Data in percent	
Very important	42
Somewhat important	37
Somewhat unimportant	13
Not at all important	2
Do not know/no answer	6

A4.2 Please assess the following statements on the topic of genetic engineering in agriculture. Do you strongly agree, somewhat agree, somewhat disagree or don't agree at all with these statements? (Figure 15, Table 6, Table 7)

Data in percent	Agree strongly	Agree somewhat	Disagree somewhat	Don't agree at all	Do not know/ no answer
When plants are specifically genetically engineered, the potential effects on nature should always be explored.	70	23	6	0	1
In my opinion, commerce should label foods made of animals that have been fed genetically engineered feed.	69	24	6	1	0
I don't think man has the right to genetically modify plants and animals.	45	33	14	4	4
I think that genetic engineering in agriculture is an important building block in the struggle against world hunger.	13	27	33	19	8
I don't have a problem with eating genetically modified food.	9	22	27	40	2

Chapter 5: Nature conservation at a regional and global scale

Global identity

A5.1 The following are some questions about your attitudes towards nature. Please tell me for each of these statements whether you agree with it strongly, somewhat, partly, not really or not at all.

Significance of nature for global identity (Figure 16, Table 8)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
What makes up our identity as human beings is essentially the nature on earth.	24	44	22	6	2	2

Perception of the problems (Figure 17)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
I personally find the way in which nature on earth is treated to be extremely problematic.	39	40	16	3	1	1

Personal significance of global nature conservation (Figure 18)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
For me personally, there is nothing more important than protecting nature on earth.	8	26	31	24	10	1

Personal willingness to contribute to global nature conservation (Figure 19, Table 9)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
I am willing to do something personally in order to protect nature on earth, e.g. observe the rules of conduct in protected areas.	45	32	12	6	5	0
I would personally take a stand to protect nature on earth, even if it means effort, e.g. pick up trash once a week in nature.	11	23	27	21	16	2
I am willing to participate in community actions to protect nature on earth, e.g. demonstrations.	8	21	26	21	23	1
I would join a group to protect nature on earth.	7	21	29	23	19	1

Collective and personal perceived behavioural control (Figure 20)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
I believe that, as human beings, we can achieve something together in order to protect nature on earth.	41	41	14	3	1	0
As human beings, we have the capacity to take a stand together in order to protect nature on earth.	40	42	14	3	1	0
I am personally able to take a stand in order to protect nature on earth	16	30	35	12	6	1
I believe that I personally can do something to protect nature on earth.	14	28	32	18	8	0

Personal norms (Figure 21)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
I have an inner commitment to work for the protection of nature on earth.	15	34	33	13	4	1

Regional identity

A5.2 The following are some questions about your attitudes towards nature. Please tell me for each of these statements whether you agree with it strongly, somewhat, partly, not really or not at all.

Significance of nature for regional identity (Figure 16, Table 8)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
What makes up our regional identity is essentially the local nature.	19	38	28	11	3	1

Perception of the problems (Figure 17)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
I personally find the way in which nature in my region is treated to be extremely problematic.	13	26	36	19	3	3

Personal significance of regional nature conservation (Figure 18)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
For me personally, there is nothing more important than protecting nature in my region.	7	19	31	26	17	0

Personal willingness to contribute to regional nature conservation (Figure 19)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
I am willing to do something personally in order to protect nature in my region, e.g. observe the rules of conduct in protected areas.	38	33	15	8	6	0
I would personally take a stand to protect nature in my region, even if it means effort, e.g. pick up trash once a week in nature.	10	22	27	23	17	1
I am willing to participate in community actions to protect nature in my region, e.g. demonstrations.	9	19	24	25	23	0
I would join a group to protect nature in my region.	9	19	25	26	21	0

Collective and personal perceived behavioural control (Figure 20)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
I believe that those of us in our region can achieve something together in order to protect regional nature.	27	40	24	8	1	0
I believe that those of us in our region are in a position to take a stand together in order to protect our regional nature.	25	37	29	7	1	1
I am personally able to take a stand in order to protect nature in my region.	13	28	32	19	8	0
I believe that I personally can do something to protect nature in my region.	12	25	32	23	7	1

Personal norms (Figure 21)

Data in percent	Agree strongly	Agree somewhat	Partly agree/partly disagree	Disagree somewhat	Don't agree at all	Do not know/no answer
I have an inner commitment to work for the protection of nature in my region.	11	29	31	20	8	1

Chapter 6: Biodiversity

A6.1 Are you familiar with the term "biological diversity"? (Figure 24, Figure 25)

Data in percent	
I've heard of it, and I know what the term means.	42
I've heard of it, but I don't know what the term means.	38
I've never heard of it.	20
Do not know/no answer	0

A6.2 Can you please tell me what the term "biological diversity" means to you? (Open question, multiple answers possible) (Figure 26)

Data in percent	
Diversity of species (animals and/or plants)	91
Diversity of eco-systems, habitats	61
Diversity of genes, genetic information, genetic make-up	38
Other	1
Do not know/no answer	0

Basis: 860 cases; only respondents who claim to know what biological diversity means

A6.3 How convinced are you that biodiversity on earth is in decline? Are you... (Figure 28)

Data in percent	
Very convinced	36
Somewhat convinced	41
Undecided	18
Not very convinced	4
Not at all convinced	1
Do not know/no answer	0

A6.4 The Federal Republic of Germany has committed itself in international agreements to the preservation of biological diversity. To what extent do you personally consider the preservation of biological diversity to be a social priority? Would you say,... (Figure 29)

Data in percent	
Yes, it's a social priority	31
Something of a priority	40
In some ways yes, in others no	23
Not really	4
No, it's not a social priority	1
I do not know/no answer	1

A6.5 I am now going to read you some options on what you can do personally to protect biological diversity. How willing are you personally... (Figure 32, Table 11)

Data in percent	Very willing	Somewhat willing	Not very willing	Not at all willing	Do not know/ no answer
... to switch your brand of cosmetics or health & beauty items when you discover that their manufacturing jeopardises biodiversity?	46	35	14	4	1
... to draw the attention of your friends and acquaintances to biodiversity conservation?	27	46	20	5	2
... to use a practical guide when doing your shopping, for example one advising about endangered fish species?	26	43	20	10	1
... to keep informed about current developments in the field of biodiversity?	24	52	19	4	1
... to donate money to the care and maintenance of a protected area?	14	44	28	13	1
... to participate actively in a nature conservation association in order to help conserve biodiversity?	8	28	38	25	1

A6.6 I'm now going to read out to you several statements concerning biodiversity. Please tell me in each case to what extent you agree with the statement. (Figure 30, Figure 31)

Data in percent	I agree strongly	I agree somewhat	I disagree somewhat	I disagree strongly	Do not know/ no answer
Biodiversity in nature promotes my well-being and my quality of life.	37	44	14	2	3
Poorer states should receive financial support from richer states in order to protect their biodiversity.	30	48	15	3	4
It will affect me personally if biodiversity disappears.	28	42	22	5	3
The amount of land used for settlement, trade & industry and transportation routes should be reduced to preserve biodiversity.	25	52	16	2	5
I feel personally responsible for the preservation of biodiversity.	13	40	34	11	2

List of footnotes

Footnote		Page
1	In order to test the two context levels (global versus regional), respondents were divided into two groups.	8
2	Methodologically, this is implemented by using survey methods borrowed from ethnology such as the non-directive narrative interview, in which the interviewees present all areas of life that are relevant from their point of view in their own language (see Flaig and Barth 2018, page 5).	11
3	The milieu indicator contains statements that represent the typical values for the individual lifestyles, and this thus makes it possible to reconstruct the boundaries between the groups. As such, those statements that capture the basic beliefs of the respondents or that diagnose motives that are effective day to day have proved most effective. The criterion for selecting such statements is their power to differentiate, i.e., their suitability to optimally separate the different groups. Respondents are assigned to the lifeworlds by means of a probabilistic model on this basis, using a specially adapted form of cluster analysis. This is done by determining a specific distribution of response probabilities across all indicator items (standard profiles) for each group. The lifestyle classification then occurs based on the similarity of the individual answer patterns with the probability model, according to the logic of the profile comparison.	11
4	The social stratum describes the position in society, which goes hand in hand with education, income and occupational prestige. It is linked to the existence of economic, cultural, social and symbolic capital.	11
5	Low: No secondary / primary school qualification leaving certificate (Hauptschulabschluss / Volksschulabschluss) or a secondary / primary school qualification or polytechnic secondary school leaving certificate with a 8th or 9th grade certificate; moderate: Secondary school leaving certificate (Mittlere Reife / Realschulabschluss) or graduation from a polytechnic secondary school with a 10th grade certificate or technical college degree; high: general or subject-related higher education entrance qualification (Hochschulreife/Abitur) or university / college or technical college degree (Universitäts-/Hochschulstudium, Fachhochschulstudium).	16
6	The name “BIK” goes back to the “BIK Aschpurwis + Behrens GmbH” institute in Hamburg.	16
7	In the 2009 and 2011 Nature Awareness study, differences in subgroup response rates with deviations of 5 percent and 10 percent from the mean, respectively, were statistically significant. In the current study, as in the 2013 and 2015 Nature Awareness studies, the significance was tested using the chi-square test, which produces more valid results at averages below 20 percent or over 80 percent.	17
8	For the sake of simplicity, all references to plankton have been counted among the animal organisms. There are also plant plankton, however (such as diatoms, green algae or dinoflagellates).	19
9	The percentages of the categories (such as “marine wildlife”) are not obtained by adding the subcategories (such as “corals”, “shells”, “whales” for the category “marine wildlife”), since individual respondents could give multiple responses. In the basic values in the appendix, the subcategories are listed in full and in detail.	19

10 Here, the findings correspond with the findings of the environmental awareness study 2016 from the Federal Environment Agency. Asked about the threat of various environmental problems, 74 percent of respondents said they find plastic waste in the oceans to be "very threatening" (BMUB and UBA 2017, page 18). Thus, this environmental problem was at the forefront of all environmental problems, even ahead of deforestation (71 percent), species extinction (56 percent) or climate change (55 percent). 20

11 See www.umweltbundesamt.de/themen/durchblick-im-siegeldschungel. 29

12 Genome editing is a molecular biological method for the targeted modification of DNA. 32

13 For a detailed explanation of the term "Place Identity", see Lengen 2016. 36

14 By dividing respondents into two groups of almost equal size, the analysis of differences in the response behaviour of subgroups (people from small towns, for example) is only conditionally possible or meaningful. This applies, in particular, to environmental analysis, since a distinction is made between ten subgroups. 36

15 Red Lists are lists of extinct, missing and endangered animal, plant and fungus species; plant communities; as well as biotope types and biotope complexes. The Red Lists can be downloaded from the BfN website (www.bfn.de/naturbewusstsein.html). 44

16 The Nature Awareness Study 2017 included only those questions that are needed to calculate the social indicator. In the previous studies, the questionnaire on biological diversity was supplemented by additional questions. 44

17 The development, operationalisation and concrete calculation of the indicator is presented in Kuckartz and Rädiker (2009). A detailed explanation of the procedure and a comprehensive discussion of the findings can be found in the in-depth report concerning the social indicator (publication planned for autumn 2018). 44

18 The following definitions were read to respondents: In the scientific community, biodiversity means firstly the diversity of genetic information and genes, secondly the diversity of animal and plant species and thirdly the diversity of habitats and ecosystems. 49