



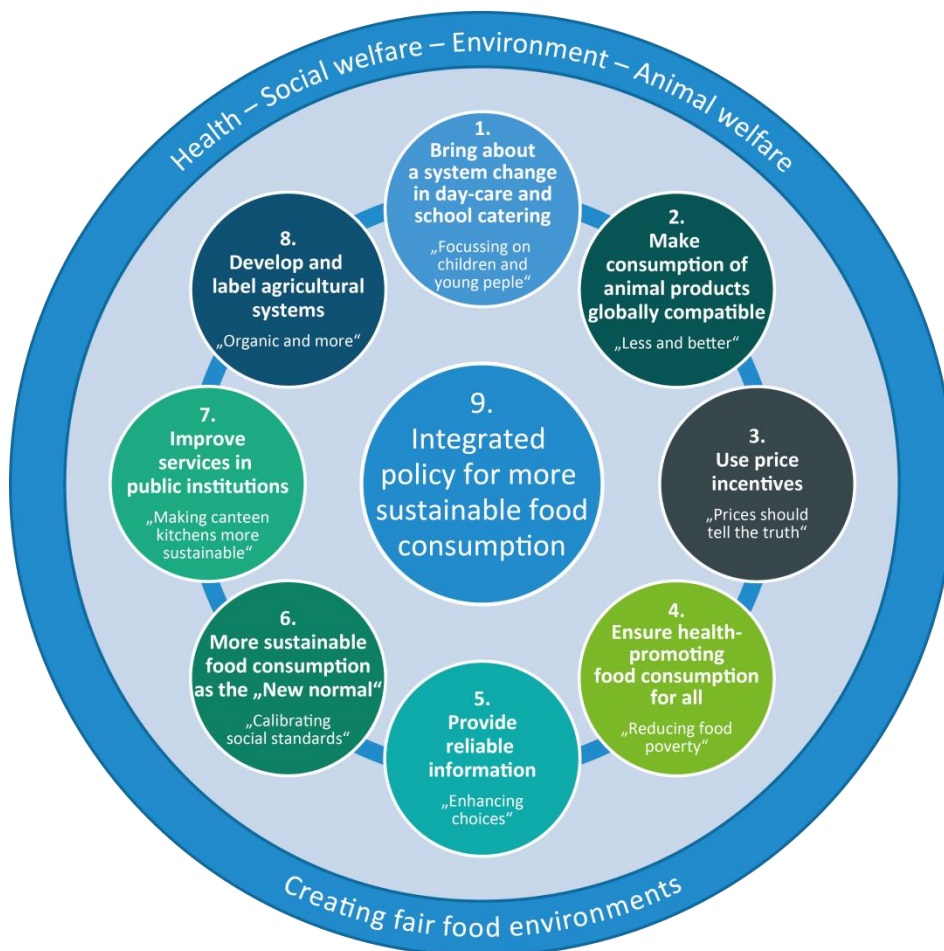
**Scientific Advisory Board
on Agricultural Policy, Food and
Consumer Health Protection**
at the Federal Ministry of Food
and Agriculture

Promoting more sustainable food consumption

Developing an integrated food policy and creating fair food environments

EXECUTIVE SUMMARY

(Preliminary translation by the WBAE members)



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The Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection (WBAE) is an interdisciplinary Advisory Board of the Federal Ministry of Food and Agriculture (BMEL). The Board works independently and on a voluntary basis. It publishes reports on topics that have been chosen by the Board itself and deemed relevant for the current and future design of food and agricultural policies.

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EXECUTIVE SUMMARY

I An integrated food policy is essential

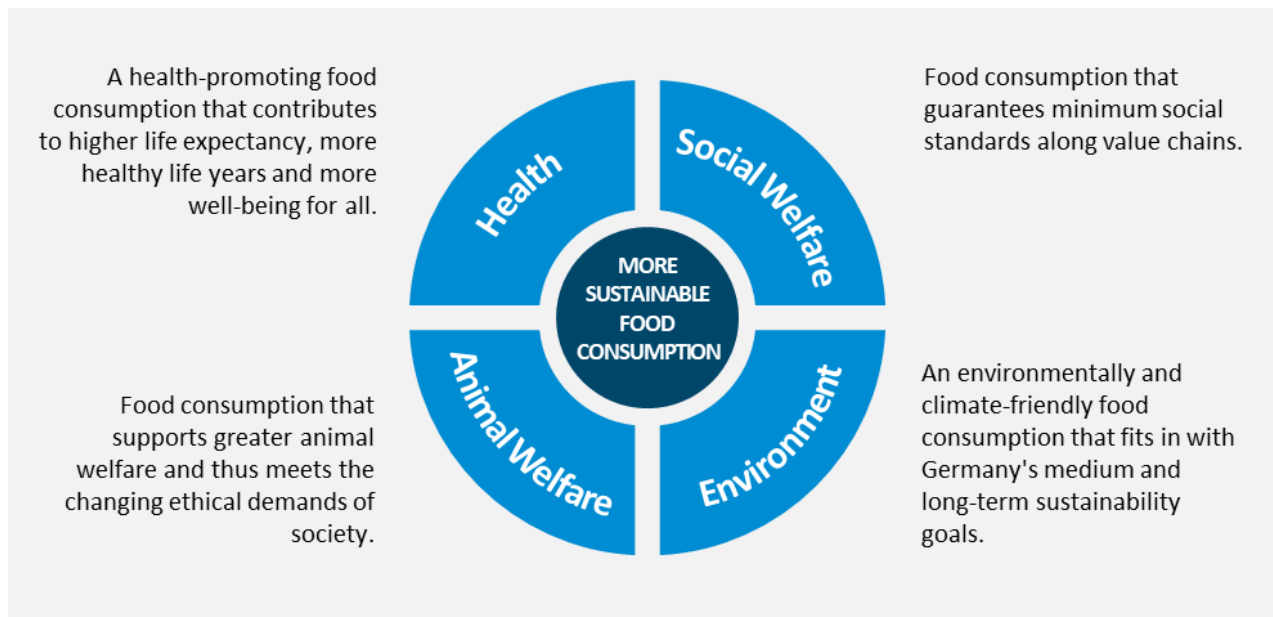
If global, European and German sustainability objectives (e.g. Sustainable Development Goals/SDGs, climate protection goals) are to be achieved, all sectors must make far-reaching contributions - including the agricultural and food sector. Besides necessary adjustments in agricultural production, changes in consumer behaviour and habits are also required. Our food consumption plays an important role in this respect: it has a major effect on our individual health status, our well-being and quality of life. Many of the foods we eat have a significant social, environmental, climate and animal welfare footprint. At the same time, food consumption is the subject of intense social debate. Many consumers wish to eat healthier and more environmentally friendly food. They want to know under which social conditions their food was produced and how animals were kept. They are motivated to make a contribution to their own health, but also to social goals. However, in view of the insufficient and sometimes contradictory information available, limited choices and a poorly supportive food environment, they are often overburdened by this task.

Thus, for promoting more sustainable food consumption it is necessary to develop an integrated policy that comprehensively improves the food environment. Compared with other European countries and beyond, Germany is a laggard in this area (Section 6). Existing **conditions and environments are not conducive to sustainability, too much responsibility is shifted to the individual**, and many available support instruments are not used adequately (Sections 6 to 8).

With this report on "Promoting More Sustainable Food Consumption", the German Advisory Board on Agricultural Policy, Food and Consumer Health Protection (WBAE) takes a comprehensive look at food policy for the first time since the expansion of the former German Advisory Board on Agricultural Policy (WBA, until 2015). The present report does not claim to develop a comprehensive definition of sustainable food consumption; it rather **aims to distinguish between less sustainable and more sustainable food consumption patterns for a prosperous country like Germany. Furthermore, it shows how policies can support people to eat more sustainably** (Section 2 "Our own understanding of sustainability"). The question of what is considered more sustainable and less sustainable is inevitably based on value judgements. The present report aims to disclose the corresponding value decisions and thus put them to debate.

With the focus on a more sustainable food consumption, the report focuses on the four most important goals of sustainable food consumption: human **health, social welfare, the natural environment, and animal welfare**, i.e. the "Big Four" (Fig. ESF-1, Section 1 "Introduction" and Section 4 "Problem analysis"). Besides many synergies, there are also relevant trade-offs between these goals. An integrated food policy is ambitious and requires the policy field to be further developed conceptually and better funded.

Figure ES-1: The four key goals of a more sustainable food consumption ("Big Four")



Source: Own illustration.

With regard to the four key goals of a policy for more sustainable food consumption, the report describes the following **main problems** (Section 4):

- (1) **Health** (Section 4.2): Compared to its prosperity, Germany is only mediocre in terms of food-related health indicators (e.g. high prevalence of overweight or obesity). Poverty clearly correlates with food-related (co-)health impairments.
- (2) **Social welfare** (Section 4.3): Germany has enacted extensive labour and social legislation. At the same time, there appear to be deficits in implementation, especially in the area of seasonal and temporary workers and in the slaughter industry and catering trade. Forced labour, serious forms of child labour and other violations of the core labour standards of the International Labour Organisation (ILO) are common in the global agricultural economy.
- (3) **Environment** (Section 4.4): Avoidable negative ecological effects occur in the food supply chain (from the manufacturing of means of production and agricultural production to processing, trade and consumption), particularly with regard to biodiversity and nitrogen and greenhouse gas emissions. The focus of food-related environmental and climate protection is on shifting consumption to more environmentally and climate-friendly foods, in Germany and other industrialised countries in particular by reducing the consumption of animal products and food waste.
- (4) **Animal welfare** (Section 4.5): In recent years, a number of single steps have been taken towards greater animal welfare. However, a comprehensive policy strategy is still lacking. This is also true for the provision of funding for the necessary restructuring of livestock farming, which would enable greater progress.

Politicians, consumers, but also the economy face a multitude of – frequently inconsistent- recommendations for more sustainable food consumption. In order to systematically pursue the goal of more sustainable food consumption, however, the stakeholders need a kind of "compass" that both provides orientation and facilitates systematic monitoring.

The WBAE has evaluated **popular food consumption recommendations** with regard to the four key goals of more sustainable food consumption (Section 5 "Identification and measurement of sustainable food consumption"). Such recommendations are necessarily simplistic and subject to methodological limitations. The report highlights one **evaluation problem** in particular, namely that of the (different) frameworks under consideration: many of the recommendations on what constitutes more sustainable food consumption refer to agricultural production systems (e.g. organic versus conventional, Section 5.2). Other recommendations focus on single food items or products and their life cycle impacts, while yet other recommendations consider specific food groups or food consumption patterns (Section 5.3). In addition, the report also discusses the spatial dimension of food consumption by considering food systems at different regional scales - from regional through national to global (Section 5.4).

A major challenge is to integrate these different dimensions when evaluating sustainable food consumption: the analyst has to deal with incompatibilities and trade-offs between the different goals. These contribute to the inconsistency of sustainability recommendations. Moreover, currently available measurement and evaluation systems differ between the various aspects of sustainability and are at different stages of development.

Despite all the limitations, a number of conclusions for consumers can be drawn that are reasonably reliable (Section 5.5, Tables 5-13 to 5-15):

- (1) The various recommendations on the consumption of **health-promoting** foods each make only limited contributions - there is no "superfood". Rather, the central recommendation is a health-promoting dietary pattern, i.e. a balanced combination of foods with predominantly favourable nutrient profiles. There are various recognized nutritional patterns (recommendations of the German Society for Nutrition (DGE), Healthy Eating Index, DASH diet, Mediterranean diet, section 4.2), which consumers can follow. Which of these nutritional recommendations consumers prefer is a question of personal preference.
- (2) The recording and evaluation of the **social dimension** of food consumption is poorly elaborated. At present, the social footprint generated by a food along the value chain is not sufficiently recorded and is not apparent to consumers. Globally, EU-wide and occasionally also nationally, it is unclear whether food products are produced in accordance with minimum social standards. Of the labels considered, only the organic and the fair trade label can be given a positive recommendation in the overall assessment with regard to social effects. The greatest medium- and long-term potential for positive social effects with regard to more sustainable food consumption, social participation and "social cohesion" in Germany lies with communal catering (e.g. in daycare centres and schools). This promotes

psychological well-being, performance and social ties, and can create important social learning spaces.

- (3) **A more environmentally compatible** food consumption has various starting points. An important one is reducing the consumption of meat and other animal products; another one is avoiding food losses. Consumption of organic foods can also contribute to a certain extent to more environmentally friendly food consumption (e.g. positive biodiversity effects). Avoiding products flown in on airplanes and foods from fossil-fuel heated greenhouses are also effective measures to mitigate environmental impacts. By contrast, regional production is not always the first choice from an environmental sustainability perspective, and reusable packaging is not automatically more environmentally friendly than disposable packaging.
- (4) **Animal welfare oriented** food consumption crucially depends on the selection of products with higher animal welfare standards. Consuming less animal products can contribute to greater animal welfare if it takes the form of "less and better". If animal products are mainly substituted for by more vegetables and legumes, significant synergies can be reaped between health and environmental objectives. For agriculture, however, the transformation to "less and better" represents a considerable social and economic challenge.

Many **synergies** are possible between the four goals of health, social, environmental and animal welfare, but there are also **trade-offs** (sections 4 and 5). For example, from the point of view of climate change mitigation, high productivity of pig or poultry husbandry for pigs or poultry is key. However, high productivity and rapid growth often come along with animal welfare problems. To a certain extent, improved housing environments and breeding for animal welfare-relevant functional traits can mitigate the trade-offs. However, WBA (2015) has also highlighted the limits of this approach. From an animal welfare perspective, "de-intensification" is necessary for most farm animals in today's intensive farming systems. These trade-offs can be mitigated by reducing the overall consumption of animal products.

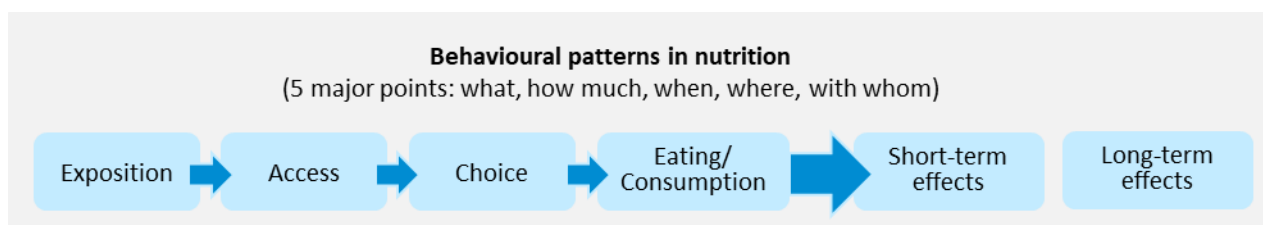
The multidimensional objectives, the potential synergies, but also the trade-offs between objectives, make an integrated approach indispensable. In political practice, however, responsibility for health-promoting food consumption, minimum social standards, environmental protection and animal welfare lies with different ministries. This has resulted in a fragmented approach to the design of policies in the different areas.

Policies for more sustainable food consumption therefore require much stronger networking between different policy areas (health, social, environmental and animal welfare policy, but also agricultural policy). The conceptual framework of such an **integrated food policy** still needs to be developed by and large. The present report thus recommends that the German Federal Government adopts an integrated approach to devising the policy field of "more sustainable food consumption" by building capacities, expanding monitoring and pursuing a science-based "learning by doing" approach (Sections 8 and 9).

II The food environment as a decisive but underestimated key driver

The report emphasises the food environment as a decisive factor affecting food consumption and eating behaviour (Section 3). The impact of the food environment on eating behaviour is far-reaching and must be understood much more comprehensively than is currently the case in food policy. The food environment encompasses the entire behavioural process. It can be divided into four phases (exposure - access - choice - consumption) (Fig. ESF-2 and Section 3.3).

Figure ES-2: Phases of the behavioural process



Source: Renner (2019, 2015).

Exposition: Exposure to food and food stimuli (e.g. in advertising and social media) determines how present food is in people's daily lives and what is perceived as "normal". Exposure calibrates people's perceptions, today often towards products with an unfavourable nutritional profile (e.g. fast food, soft drinks) and a high carbon footprint.

Access to food depends on various factors. These include price, availability of information and social norms about food and eating (Section 3). The latter determine which offers are accepted and appropriate in the first place. In particular, social structures (e.g. meal times) and the diversity of the offer (e.g. convenience aspects, portion sizes) influence what, how much, when, where and with whom consumers can (and want to) consume foods. So-called "digital ecosystems" (Section 8.10.3) are increasingly emerging both in and around private households as well as in the out-of-home sector by interconnecting and networking digital technologies, mobile sensors and apps. These are designed to increase availability and convenience and, thus, ultimately consumption. The development of such smart, "digital ecosystems", results in the fact that food is available almost anywhere and at any time and that the demands on individual self-regulation ("to control oneself in the face of the omnipresent food supply") continue to increase. At the same time, however, "digital ecosystems" can also provide simple, networked access to information based on reliable data for more sustainable food consumption.

Actual **food choices** are shaped by socio-economic aspects, preferences and attitudes, knowledge, social norms and habits. Marketing, and increasingly social media, are influential environmental factors that associate food with certain values and characteristics which influence consumer preferences. Products are often associated with emotions and social aspects (e.g. status, popularity, affiliation) which are independent of the products' nutritional value or taste (Sections

6.4 and 8.5). Foods with unfavourable nutritional value profiles often achieve the highest returns in the food industry and are therefore the focus of marketing activities.

For **consumption**, i.e. what, how much and how quickly food is eaten, the environmental factors mentioned above play a decisive role. In addition, aspects of the actual food environment, such as the food offering (quality, quantity, selection options), characteristics of the food and dishes (e.g. portion size), the environmental conditions (e.g. noise, time pressure, stress), ambience (space, light, temperature, smell, music) and the social environment (community, type of social event) are of decisive importance. The eating environment, especially the ambience and eating and drinking together (commensality), fulfil major emotional and social functions. Empirical findings impressively show that eating together significantly enhances people's psychological well-being, social bonds, cohesion and performance (Section 3.1). The atmosphere in which food is consumed implicitly, and with long-term effects, conveys social norms and appreciation of food.

A key finding of the report is that the **influence of food environments is underestimated** in public and political discussions, whereas **individual control over actions is overestimated**. Consumers and political decision-makers are often unaware of the influences of the food environment, as the focus is usually only on the consumption phase and on individual food decisions. It is therefore assumed that eating more sustainably and healthily is a "simple" individual decision and thus primarily a question of motivation and self-regulation. However, consumers have to make many eating decisions every day, both by deciding what, how much, when, where and with whom they eat. This involves explicitly saying "no" and suppressing the corresponding behavioural impulses in an environment that almost constantly draws attention to food and eating.

In everyday life, which places numerous demands on consumers, food consumption behaviour is not only the result of conscious and reflective decision-making; existing options for action as well as habitual and, at that moment, unconscious influences also play an important role (Section 3.2). Food environments have an effect not only at the time of consumption, but also on time periods before. How and where food is placed and advertised, how attractively packaged it is or how large the portion sizes on offer are, all these factors shape the perception and learning processes of consumers. The food environment also defines the scope and default for choices and thus the standards for consumer behaviour.

The design of the food environment is currently primarily profit-oriented, serving the interests of the food industry. This report suggests that the food environment be primarily targeted on the social goals of human health, social welfare, the environment and animal welfare. In the present report, the WBAE recommends that consumers be given much more support than is hitherto the case in adopting more sustainable food consumption patterns by designing appropriate food environments. Firstly, it is necessary to reduce those factors in today's prevailing food environments that make more sustainable food consumption difficult (e.g. large portion sizes, high advertising expenditure for unhealthy foods). Secondly, the report recommends offering healthier, social-welfare, environment and animal welfare enhancing food choices, making it easier for

consumers to identify more sustainable options, facilitating easier access to information and providing price incentives that entice consumers to make better choices.

The WBAE calls such food environments **fair**, because they are: (1) attuned to human perception space, decision possibilities and behaviour and (2) more healthy, more social-welfare friendly, environmentally and animal welfare compatible, thereby contributing to the sustaining the livelihoods of present and future generations.

Conversely, this is also a criticism of an excessive individualisation of the responsibility for a sustainable food consumption. In the opinion of the WBAE, food policy in Germany has so far placed too much weight on consumers' individual responsibility for more sustainable food consumption. Emphasising the importance of appropriate food environments implies that a national policy for more sustainable food consumption requires considerably more interventions and greater intervention intensity.

Important measures to improve the food environment include, among others, high-quality communal catering, especially sustainable day-care and school catering accessible to all children, spaces free of advertising, drinking water dispensers in public buildings, suitable price incentives and provision of behaviour and action-oriented information, more transparency about and restrictions on advertising in social media (social influencing), appropriate portion sizes and creation of a pleasant eating environment in day-care centres, schools, nursing homes and hospitals.

III A policy targeting consumption is legitimate and necessary

There is growing empirical evidence of a partial market failure in the food industry, which leads to considerable sustainability deficits and high economic costs due to an increasing number of diet-related (co-)diseases (section 6 "Legitimation of a food and nutrition policy?" and Section 7 "Governance of the food system"). This makes it **necessary to choose the consumption side as a target for interventions**. Consumption-side measures complement the classic regulatory and economic instruments targeting the supply side but hit their limits in open economies with internationally varying regulatory levels.

Compared internationally, Germany has a relatively lax regulatory framework in the area of food consumption (Section 6). German food policy relies heavily on the individual and the family and, in the opinion of the WBAE, overburdens them. Analysis of the political-administrative system shows that a strong and active state food policy is viewed rather skeptically in political circles. The political parties that call for a more active role of the state, concentrate their proposals on aspects of day-care and school catering. For the environmental dimension of sustainable food consumption, use of organic food in day-care and school catering and, in general, promotion of organic farming are proposed, which is not sufficient. Food poverty and poor working conditions in various sectors of

the food supply chain usually receive little attention across the spectrum of political parties. In addition, the party manifestos are reluctant to propose measures to influence food consumption habits of adults. This is presumably due to the fear of lacking acceptance, which is further reinforced by the great media impact that food consumption issues generally have. This fear has not been unjustified in the past. However, the acceptance of more interventionist measures, which are increasingly used globally, is on the increase in Germany.

A benchmark without intervention does not exist in reality. Contemporary food environments are characterized by a large number of interventions (Section 6). In this sense, "free" nutritional decisions are an illusion: what we consume and how we eat is significantly influenced by the food environment. Some aspects of the food environment are predetermined or at least influenced by government action, e.g. through information and labelling policies, or by differential taxation of food products which affect food price ratios. Aspects such as advertising, product placement, location of retail outlets, or pricing policies are mainly influenced by the companies along the food supply chain. These aspects are in turn more or less strictly regulated by the state. Against this background, the question is not so much whether it is permissible for the state to actively shape food environments, but rather what kind of shaping citizens find socially desirable and what helps them to eat more sustainably in their time-constrained everyday lives. The core issue here is finding the right balance between the legally guaranteed freedom of the individual and considerations of the common good. In particular, decisions have to be made regarding the extent of policy interventions in consumer behaviour and the choice of instruments. This concerns the effectiveness and efficiency of instruments as well as their possible unintended side effects. The present report shows that there are good reasons for a comprehensive policy for more sustainable food consumption and that instruments targeting consumers and the food environment should be an integral part of the instrument mix.

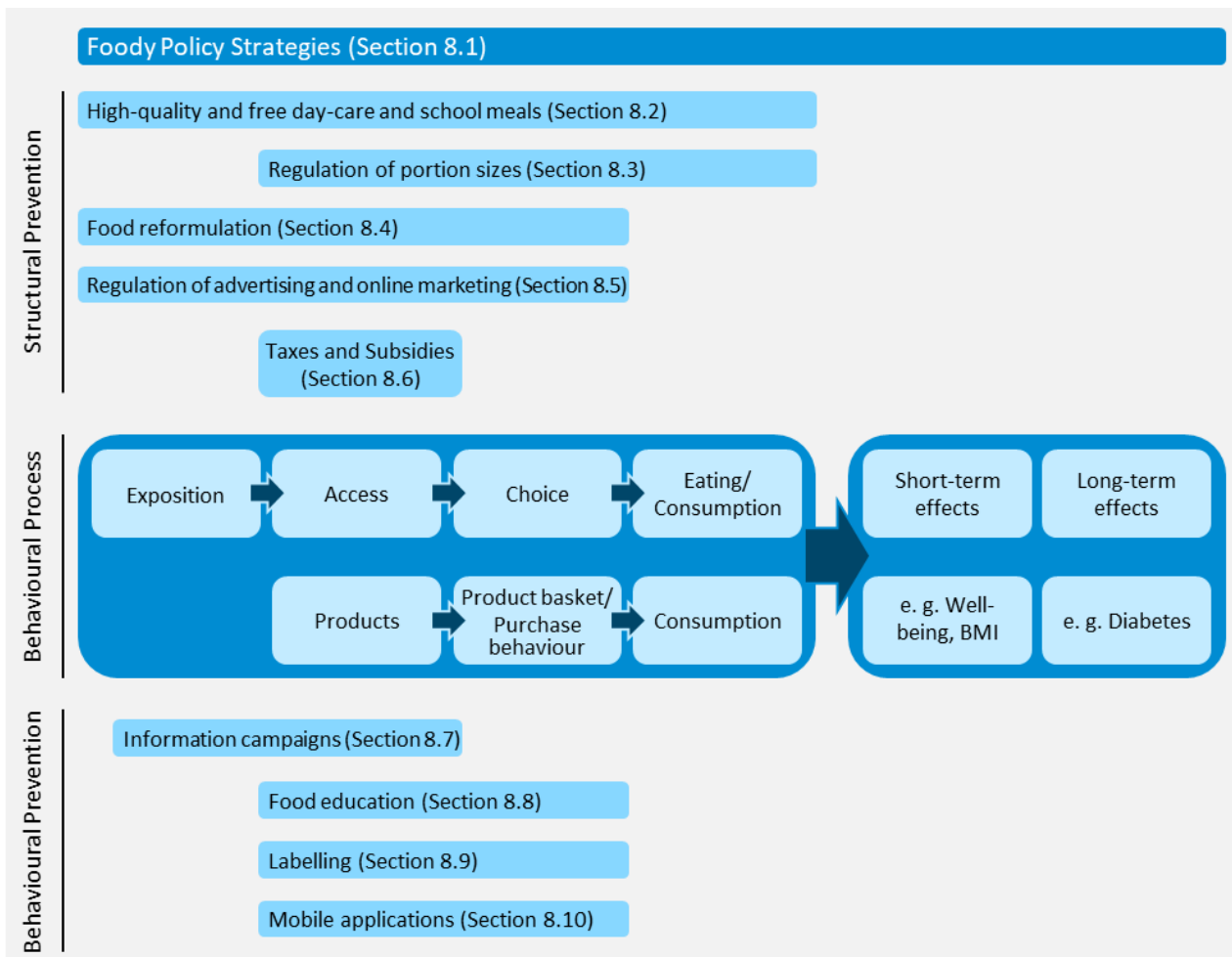
A central control problem is that, in Germany's federal system, responsibility for the area of food consumption is distributed among different levels of government. In addition, different ministries deal with different aspects of food consumption. This currently leads to a **diffusion of responsibility** which becomes particularly evident in the field of day-care and school catering policies. Whereas the first coordination institutions have been established to improve coordination and networking of the various actors in this field, their organisational structure and financial resources do not currently match the size of the tasks at hand. Organisational and financial deficits are particularly problematic because the market in the catering sector does not function adequately. Therefore, enhanced public governance and support is needed. However, the responsible local authorities are coming up against limits - both in terms of their management capacity and their sources of financing. Further governance problems exist in the area of internalising external costs and labelling (Section 7.5).

IV Towards more sustainable food consumption: recommendations

Food policy instruments can be applied at the various phases of the behavioural process (Fig. ES-2 and Section 3.3). Some instruments, such as free, high-quality day-care and school meals, address all phases of the behavioural process: they increase exposure to health-promoting foods and meals, but also change the general access to the respective offers and the options available. Furthermore, the design of the food on offer (e.g. quality, portion size) and the eating environment (e.g. equipment of the dining room) directly influences eating behaviour. Thus, free, high-quality day-care centre and school catering has a broad behavioural impact.

By contrast, other instruments primarily address only one phase of the behavioural process, but, as a rule, have knock-on effects on the other phases of the process (Fig. ESF-3). For example, taxes primarily affect access to certain food products by making the relevant offer more expensive and thus less accessible or attractive. This change then has secondary effects, e.g. on the choice and consumption, and under certain circumstances also on exposure, if products are no longer offered due to falling demand. In general, it seems plausible to assume that an instrument is all the more effective (in terms of promoting more sustainable food consumption) the more phases of the behavioural process it addresses.

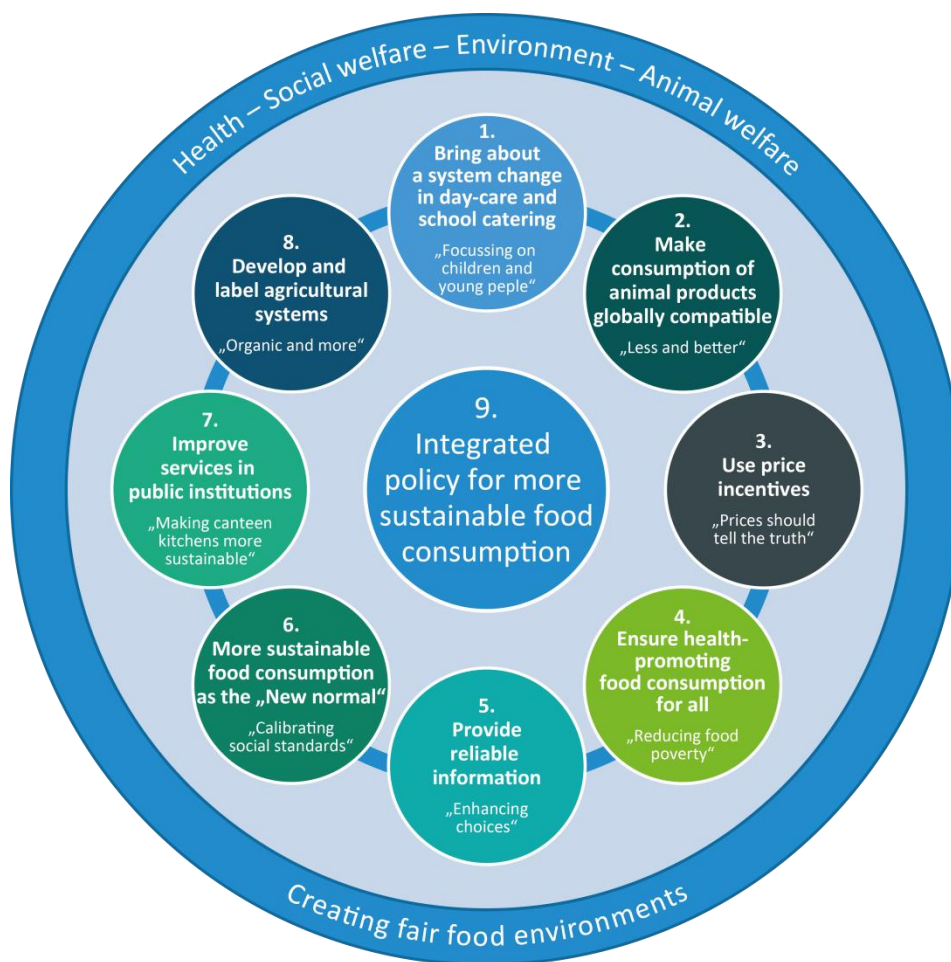
Figure ES-3: Systematic representation of policy instruments according to the main phases of the behavioural process



Source: Own compilation.

In general, a single instrument on its own is significantly less effective than a well-coordinated **mix of instruments** (Section 8). The fact that food consumption is highly habitualized calls for a coherent and consistent policy mix as well as a conceptual and budgetary expansion of the policy field. As part of a comprehensive strategy with long-term, verifiable goals, the necessary instrument mix should be tested in a targeted and committed manner in the sense of a reflexive policy, consistently evaluated and then adapted on the basis of evidence and lessons learned. This requires transparent monitoring. Institutional development and strengthening of the policy field also requires stronger networking among the relevant ministries (especially food and agriculture, health, environment) and the various levels of government (from the municipality to the EU). On the basis of this analysis, the WBAE makes nine key recommendations for a more sustainable food policy in Germany, as shown in Fig. ES-4 (Section 9).

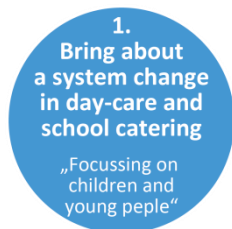
Figure ES-4: Nine key recommendations for an integrated policy for more sustainable food consumption



Source: Own illustration.

The following exposition explains these recommendations, which partly overlap.

Recommendation: Bring about a system change in day-care and school catering - "Focussing on children and young people".



The current food situation in day-care centres and schools is characterised by poor quality of the food on offer and an unattractive dining environment. This leads to low participation and thus high costs per meal. Daycare centres and schools are important places of learning and social integration for children and young people. In order to reap this potential for more sustainable food consumption, clear governmental steering impulses are needed.

The WBAE recommends that the necessary system change in day-care and school catering be brought about by means of the following elements (Section 9.2)

- Gradual and evidence-based introduction of free meals in day-care centres and school catering (addressee: local authorities, federal states, Federal Government).
- Creation of fair food environments through (1) mandatory adoption of the DGE quality standards (Federal Government, federal states, local authorities, day-care centre and school management), (2) provision of appropriate premises, equipment and meal times that promote social interaction (Federal Government, federal states, local authorities, kindergarten and school management) (3) regulation of competing catering services (private cafeterias, kiosks and vending machines) (federal states, local authorities, school authorities) and (4) qualitative strengthening of action-oriented food consumption education (federal states, school authorities).
- Launch of a federal investment programme "Best Canteen" for a quantitative and qualitative expansion of day-care and school catering (federal government, federal states, local authorities).

Recommendation: Make consumption of animal products globally compatible - "Less and better"



A globally compatible food consumption urgently requires a reduction in the high consumption of animal products in wealthy countries. A reduction can contribute to positive health effects in Germany. On the production side, a transformation of livestock farming opens up opportunities for greater animal welfare and contributes to biodiversity and climate protection. This transformation should be embedded in a comprehensive livestock and food consumption strategy.

The WBAE recommends in particular (Section 9.3)

- Reduction of the consumption of animal products by designing appropriate food environments as part of a comprehensive programme by (1) abolishing the reduced VAT rate on animal products and, in the long term, introducing a specific sustainability tax (Federal Government), (2) developing and introducing a mandatory climate label for all foodstuffs (Federal Government), (3) initiating an information campaign to raise consumer awareness of the climate relevance of animal products and motivate consumers to change their behaviour (Federal Government) and (4) implementing the DGE quality standards on a mandatory basis for communal catering (Federal Government, federal states and local authorities).
- Counteracting undesirable side-effects by (1) socially cushioning the increased tax burden (value-added tax, perspective sustainability tax) (Federal Government), (2) monitoring whether a reduction in the consumption of animal products leads to problematic substitution effects and, if necessary, counteracting these effects (Federal Government), (3) by considering undesirable side-effects of climate protection efforts in livestock production with regard to animal welfare (Federal Government, federal states) and (4) developing and implementing a transformation strategy to improve the added value in the agricultural and food industry (Federal Government, federal states).

Recommendation: Use price incentives - "Prices should tell the truth"



The necessary transformation to more sustainable consumption patterns will not be able to build on intrinsic motivation and conscious choices alone. The WBAE recommends that price incentives for more sustainable food consumption be significantly strengthened in key areas of action. This is to be achieved in a socially acceptable manner by relieving low-income households.

In this respect, the WBAE recommends (Section 9.4):

- **Provide price incentives for a reduction in the consumption of less sustainable products** by (1) abolishing the reduced VAT rate for animal products (Federal Government), (2) introducing a new excise tax on all sugar-sweetened beverages, which is proportional to the content of free sugar and which will be increased gradually over time (Federal Government), and (3) in perspective, introducing a specific sustainability tax on all foodstuffs (Federal Government).
- **Use the resulting financial leeway at federal and state level to invest in more sustainable food consumption**, in particular through (1) a tax refund in the sense of a sustainability premium for low-income households, (2) a reduction in VAT on fruit, vegetables and pulses, (3) a conversion to more animal-friendly livestock farming and (4) for high-quality, free day-care and school meals (Federal Government, federal states, local authorities).

Recommendation: Ensure health-promoting food consumption for all – „Reducing food poverty“



Even in a comparatively prosperous country like Germany, there is poverty-related malnutrition and even hunger. A policy for more sustainable food consumption should take greater account of the living conditions of low-income population groups and further develop target group-oriented support services.

The WBA recommends (Section 9.5):

- **Ensure access to health-promoting food for all** by (1) adequately taking into account the costs of health-promoting food in the calculation of social security benefits by the state (Federal Government) and (2) gradually introducing high-quality, free day-care and school meals (Federal Government, federal states, local authorities).
- **Avoid adverse effects of a policy for more sustainable food consumption on low-income population groups** through (1) social cushioning of changes in the taxation of food products

(Federal Government) and (2) a review of the effects of the food policy instrument mix on low-income households (Federal Government).

- **Improve monitoring of food poverty** (Federal Government, federal states).

Recommendation: Provide reliable information – „Enhancing choices“



The availability and reliability of information on key sustainability characteristics are pivotal for more sustainable consumption. Currently, reliable information displayed on the product is largely lacking. Advertising, modern information media and digital applications (e.g. apps) are often fragmented, not user-friendly and not targeted on more sustainable choices.

The WBA recommends a significant expansion of the information infrastructure through the following action points (Section 9.6):

- **Develop an effective labelling policy**, in particular by (1) introducing compulsory state labels for the crucial sustainability dimensions (Federal Government), (2) promoting the development of EU-wide sustainability labels (Federal Government), (3) reducing the flood of labels by means of summary labels, (4) defining a uniform design for state food labels ("umbrella label") (Federal Government), (5) supporting the development of methods and data collection for sustainability labels by commissioning a (state) agency (Federal Government, federal states) and (6) creating a valid, integrated open-access database ("federal sustainability key") (Federal Government).
 - **With regard to the health dimension**, the WBAE recommends (1) to further promote the introduction of the Nutri-Score in Germany (Federal Government, industry), (2) to support the EU-wide binding introduction of the Nutri-Score (Federal Government, EU), (3) to further improve the validity of the Nutri-Score through research (Federal Government), (4) to highlight the value of many unprocessed raw products not included in the Nutri-Score (Federal Government, economy), (5) to confine the use of health claims to products with a positive health rating (levels A and B of the Nutri-Score) (Federal Government, EU), (6) to make it legally binding for companies to display the Nutri-Score in food advertising (Federal Government) and (7) to limit the use of so-called "feel-good labels" and "feel-good claims". This implies monitoring and, if necessary, prohibiting the use of marketing terms and signs which indirectly refer to health and are not legally regulated (Federal Government, federal states).
 - **With regard to the social dimension**, the WBAE recommends ensuring minimum standards in the social field so that consumers can be sure that these are actually complied with. This means in particular (1) ensuring appropriate monitoring of adherence to the Minimum Wage Act along the value chain for food produced in Germany (Federal Government), (2)

strengthening the commitment to securing EU-wide minimum social standards (Federal Government, EU), (3) monitoring the food industry's voluntary commitment of the National Action Plan on Business and Human Rights and, if necessary, enact appropriate legislation (Federal Government) and (4) to further develop the WTO regulations on ethical matters (e.g. labelling obligations) (Federal Government, EU, WTO). With regard to fairness aspects that go beyond minimum standards, the WBAE recommends (5) to promote the advancement of international fairness labels for the protection of dependent employees (Federal Government, industry, NGOs) and (6) to develop a legal framework regulating the use of voluntary fairness labels in Germany (Federal Government).

- **With regard to the environmental dimension**, the WBAE recommends in particular (1) to introduce a climate label based on product-specific standard values and supplementary company-specific values (Federal Government, industry), (2) to examine the introduction of a mandatory requirement to display the climate label in food advertising, and (3) to advocate the mandatory introduction of a climate label at EU level (Federal Government). In addition, the WBAE recommends (4) creating a database on average greenhouse gas emissions of various foodstuffs as well as promoting methodological conventions in this area (Federal Government) and (5) promoting methods for measuring greenhouse gas emissions in agriculture (Federal Government, industry).
- **With regard to the animal welfare dimension**, the WBAE recommends in particular (1) development of a multi-stage, state animal welfare label with increasing requirements over time (Federal Government), (2) integration of the animal welfare label into a national farm animal strategy (Federal Government, federal states), (3) working towards mandatory labelling at EU level (Federal Government, EU) and (4) legal regulation of the use of animal welfare terms (Federal Government).
- **Making the advertising environment more sustainable** by (1) restricting adverts for non- and less health-promoting foods targeting children (Federal Government) and (2) banning advertising for foods in daycare centres and schools (federal states, local authorities), (3) making the Nutri-Score mandatory in food advertising (Federal Government) and (4) making advertising measures in social media always identifiable as such (Federal Government).
- **Creating a "digital ecosystem for more sustainable food consumption"** by (1) developing and advancing apps and digital applications into a "digital ecosystem for more sustainable food consumption", which provides applications and data in the field of food consumption for the entire behavioural process and integrates them in a comprehensible way (Federal Government), (2) by creating a valid integrated open-access database ("Federal Sustainability Key") (Federal Government), (3) by ensuring that the availability of consumers' own data is legally secured to a greater extent and that voluntary data donations will be made possible (Federal Government) and (4) private smart "digital ecosystems" are subjected to quality control measures (Federal Government, federal states).

Recommendation: More sustainable food consumption as the „New normal“ – „Calibrating social norms“



The available offers and portion sizes "calibrate" people's perception of what is perceived as normal and appropriate (social norm). Social norms have a decisive influence on consumer behaviour. It is therefore important that greater attention be paid to exposure and access as important elements of the food environment and that greater exposure and better access to sustainable products become the "New Normal".

The WBAE recommends (Section 9.7):

- **Making smaller portion sizes the standard** by (1) making adoption of the DGE quality standards mandatory for public communal catering (Federal Government, federal states, local authorities) and (2) ensuring availability of small portion sizes in out-of-home catering (Federal Government, federal states, local authorities, industry). In addition, the WBAE recommends (3) to increase the general public's awareness of the portion size effect and the acceptance of measures to regulate portion sizes by integrating the portion size issue more strongly into the BMEL's campaign "Too good for the bin" (Federal Government), (4) to test innovative measures to reduce or avoid the portion size effect (Federal Government, federal states) and (5) to initiate voluntary measures run by the industry (Federal Government, federal states, industry).
- **Reduce the consumption of sugar-sweetend drinks and ambitiously promote tap water consumption.** The WBAE recommends to establish a national action programme "Reduction of sugar-sweetened drinks", which combines the following measures: (1) launch of a tax on sugar-sweetened beverages as per their content of free sugar content (Federal Government), (2) free provision of tap water in public places (Federal Government, federal states, local authorities), (3) mandatory labelling of beverages with the Nutri-Score (Federal Government), (4) ambitious promotion of tap water offers in the catering and retail trade (Federal Government, federal states), (5) mandatory requirement to offer water or other non-caloric beverages as standard option in children's menus (Federal Government, federal states, local authorities), (6) reducing the supply of sugar-sweetened beverages in public institutions and increasing the attractiveness of tap water consumption (federal states, local authorities, Federal Government), (7) a wide-spread information campaign to avoid the "beverage trap", (8) promoting small beverage sizes in the catering trade and the out-of-home market (Federal Government, federal states), (9) banning advertising for products with a high sugar content directed at children (Federal Government) and (10) promoting the consumption of light spritzers by reformulation (Federal Government).
- **Realistically assess and exploit the potential of reformulation** by continuing and advancing BMEL's national reduction and innovation strategy. In particular, the reformulation measures should (1) be prioritised and initially focused on sugar content and specific product groups (Federal Government, industry), (2) be systematically underpinned by scientific evidence

(Federal Government) and (3) be extended to other product groups and the out-of-home sector on the basis of these scientific findings (Federal Government, industry). In addition, (4) food manufacturers should be provided with a science-based toolbox of reformulation options and strategies (Federal Government, industry) and (5) the achievement of reformulation goals should be monitored and food law requirements should be tightened accordingly where necessary (Federal Government).

- **Reduce food waste efficiently** by (1) setting up a system for monitoring food waste and making the data available for scientific analyses (Federal Government), (2) using the monitoring data to evaluate reduction measures more systematically (Federal Government) and (3) expanding the "Too good for the bin" campaign of the BMEL. In addition, (4) the reduction potential of smaller portion sizes should be examined (Federal Government), (5) soup kitchens should be better supported through infrastructure funding (federal states, local authorities) and (6) a legal obligation for retailers and bakeries to donate food which is still edible should be examined (Federal Government, federal states). Finally, (7) public communal catering should proceed with good (management) examples e.g. by using planning tools and implementing DGE standards (Federal Government, federal states, local authorities).

Recommendation: Improve services in public institutions - "Making canteen kitchens more sustainable"



In the health system, food consumption is a rather secondary topic. This means that considerable quality deficits are accepted and the wrong signals are sent to clients and to society at large. The WBAE therefore recommends that in the nursing homes, hospitals and rehabilitation centres, food consumption should not only be considered from a practical perspective, but that high quality of food and the food environment should be ensured.

The WBAE recommends (Section 9.8):

- **Rethinking the catering business for the elderly.** In order to improve the nutritional and health-related care situation of elderly people, (1) the DGE quality standards for senior citizens' catering should be made compulsory in all retirement and nursing homes (Federal Government, local authorities); in addition, (2) decentralised lunches ("Meals on Wheels") and local caretakers (federal states, local authorities) should be made available. In order to improve the database on the living situation of the generation 65+, (3) monitoring of the care situation and evaluation of measures for the 65+ population group should be improved, with a focus on poverty in old age (Federal Government, federal states, local authorities). In addition, (4) nutritional screening of patients in clinics, other stationary facilities and GP practices should be introduced, and nursing staff and doctors should be sensitised for nutritional issues (Federal Government, SHI & private health insurers, Medical Association).

- **Advocating health-promoting food in the health care system** by (1) prescribing and monitoring the DGE quality standards for food in hospitals and rehabilitation clinics (Federal Government, federal states, SHI & private health insurers) and (2) examining the possibility of including quality-related factors (e.g. results of external quality audits) in the financing of catering services (Federal Government, federal states, SHI & private health insurers).

Recommendation: Develop and label agricultural systems - "Organic and more"



Organic farming is an environmentally friendly farming system, which also provides innovation impulses for the entire agricultural sector. It should therefore continue to be supported financially. However, organic farming is not a panacea, implying that complete conversion of agriculture should not be aimed for. Sweeping comparisons of conventional versus organic are not appropriate since they do not reflect the reality of agriculture with its diverse farming concepts. Viewed globally, more sustainable farming systems with higher land use efficiency than organic farming are conceivable.

The WBAE recommends (Section 9.9):

- **Advance the promotion of organic farming in a targeted manner** (Federal Government, federal states). This includes targeting support on areas where high environmental benefits are expected (e.g. in § 13 of the Fertiliser Ordinance ("red areas")) and combining organic aid with other agri-environmental measures.
- **Review the positive effects of organic farming at intervals** (e.g. if the 20% target is reached) while also taking into account possible undesirable displacement effects (Federal Government).
- **Develop more sustainable farming systems and make them recognisable to food processors and, in later development stages, to consumers.** To achieve more sustainable development, the organic farming system should be advanced with a view to to reduce the yield gap between organic and conventional farming. In addition, policy should support the development of intermediate forms of sustainable farming systems that can compete with organic farming in terms of environmental performance but achieve higher yields. Such approaches should be further developed towards a certifiable agricultural standard and a (possibly multi-level) label (Federal Government).
- **Develop and introduce a climate label** (Federal Government).
- **Rethink technological developments with regard to their sustainability assessment and approval processes** (EU, Federal Government, federal states). New technologies, in the fields of robotics, sensor technology, genome editing etc, can open up new perspectives for sustainable food security and mitigation of adverse environmental effects of farming systems.

Crop protection products, used selectively and in a targeted manner, can reduce food losses and contribute to enhanced sustainability of farming systems. Policy-makers should ensure that the potential of technological solutions for more sustainable production is not wasted. Otherwise, there is a risk of undesired displacing production to countries with lower environmental and climate protection standards. The social discourse on technological developments in the agricultural and food system should be intensified.

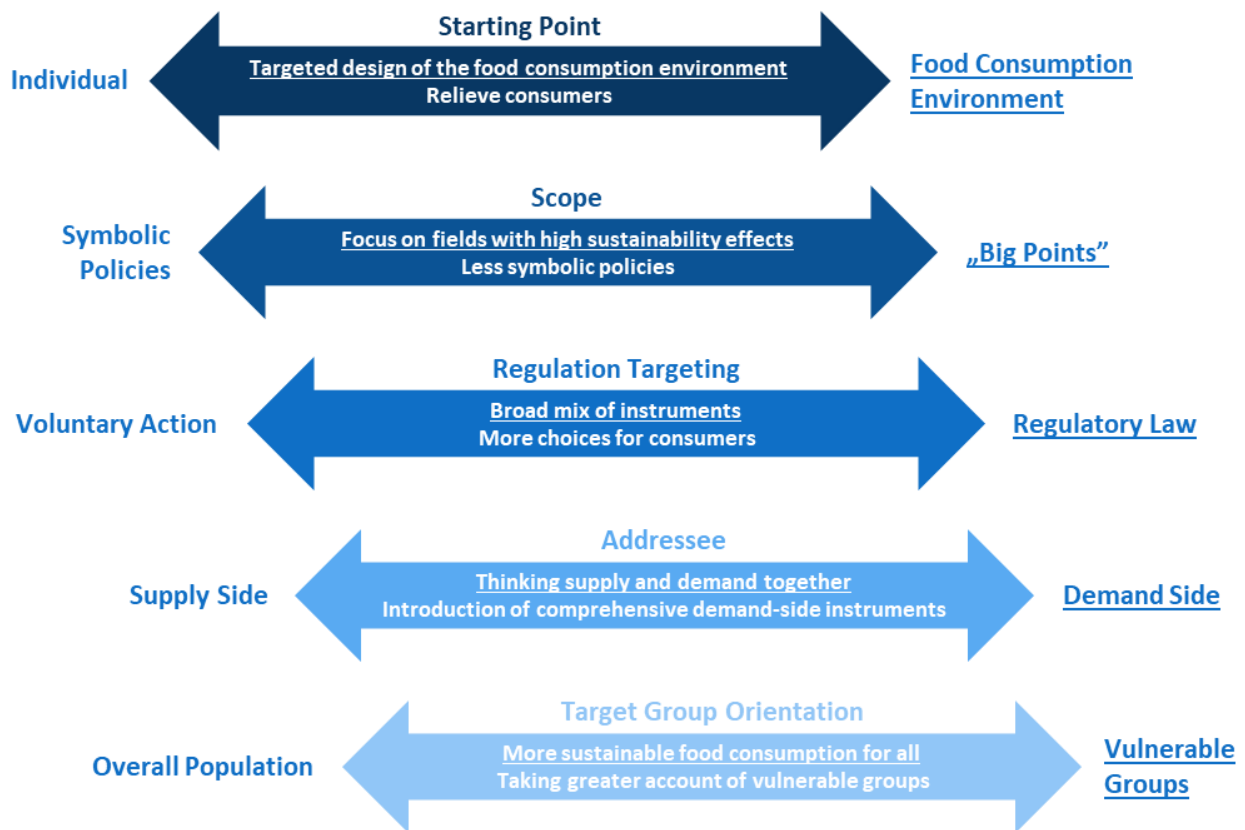
Recommendation: Strengthen and advance the policy field „More sustainable food consumption“ – „Establishing an integrated food policy“



The WBAE recommends a comprehensive reorientation and strengthening of food policies that integrate the four sustainability dimensions of health, social welfare, environment and animal welfare.

An integrated policy for more sustainable food consumption requires a conceptual reorientation of food policies along five decision fields (Fig. ES-5, Section 9.10)

- **Starting point:** The state should be given greater responsibility in shaping the food environment such that consumers are relieved and are given more options for sustainable choices.
- **Scope:** Concentration on key fields of action is necessary to increase the scope of food policies.
- **Regulatory targeting:** A broad and coordinated mix of policy instruments should be implemented; in particular, regulatory law and economic incentives should be strengthened and information should become more reliable in order to attune the food environment to human perception and decision-making possibilities and behavioural patterns.
- **Addressee:** Comprehensive demand-side policy instruments should be introduced to better interlink demand and supply-side instruments.
- **Target group orientation:** A clear target group orientation is necessary to ensure that vulnerable groups (children, households affected by food poverty, senior citizens) are given appropriate consideration.

Figure ES-5: Conceptual reorientation of food policies along five decision fields

Source: Own illustration, cf. section 8.1.

The WBAE recommends (Section 9.10):

- **Reinforce and institutionally advance the policy area "more sustainable food consumption"** (Federal Government) , in particular by (1) dedicating a higher budget to food policies - appropriate to the challenges, (2) developing consistent goals and performance indicators for the policy field of "more sustainable food consumption", (3) promoting the networking and collaboration of the ministries in charge of the various aspects of food policy and (4) reinforcing food policy within BMEL and strengthening it vis-à-vis agricultural interests.
- **Employ food policy instruments in a combined and evidence-based manner** by (1) using them in a conceptually sound and coordinated manner (Federal Government) and (2) comprehensively evaluating the implementation and effectiveness of food policy measures (Federal Government, federal states). The Federal Government should adopt a learning approach, with a focus on evidence-based design and evaluation of implementation and the effects achieved (see Section 8.2.4).
- **Improve monitoring and data availability** by (1) expanding the monitoring of developments relevant to food policy (Federal Government, federal states), (2) making monitoring data from public research institutions available for further analysis more quickly (Federal Government,

federal states) and (3) establishing a system of regular reporting on "More Sustainable Food Consumption" (Federal Government).

- **Create a "digital ecosystem for more sustainable food consumption"** (Federal Government) by (1) developing and advancing apps and digital applications into a "digital ecosystem" for more sustainable food consumption, which makes applications and data in the field of food consumption available for the entire behavioural process and integrates them in a comprehensible manner, and (2) creating a valid, integrated open-access database ("Federal Sustainability Key") (Section 9.6.7).
- **Target health insurance funds for prevention measures more on prevention in the field of food consumption.** The targeting should be done evidence-based (Federal Government, SHI).
- **Provide voluntary measures with clear transparency requirements and clearly defined goals** (Federal Government)

V Financing a policy for more sustainable food consumption

The nine key policy recommendations listed above and their proposed specification have implications for public budgets. These are spelled out below in terms of their magnitude for the most important measures (Section 9.11).

- Abolition of the VAT concession on animal products (approx. 4.3 to 5.0 billion euros per year) and launch of an excise tax on sugar-sweetened beverages (approx. 1.0 to 1.9 billion euros per year) is expected to generate additional government revenue totalling approximately 5.3 to 6.9 billion euros per year.
- The recommended reduction of the value added tax on fruit and vegetables will lead to a shortfall in tax revenue of approximately 0.5 billion euros per year.
- Compensating 40 % of the lowest-income households with 50 euros per capita and year each will result in additional government expenditure worth roughly 1.6 billion euros per year.
- For state-financed day-care and school meals, additional state expenditure in the order of approx. 5.5 billion euros per year can be assumed.
- For the conversion to more animal-friendly livestock farming, additional state expenditure in the order of approximately 2 billion euros per year is proposed.
- In total, the Federal Government, federal states, and municipalities will thus incur reduced revenues and additional expenditures of approximately 9.6 billion euros per year. On balance, this results in a financing gap of some 2.7 to 4.3 billion euros per year, which would have to be covered by additional tax revenues or reduced expenditure in other policy fields and would require a redistribution of taxes between the Federal Government, federal states and municipalities.

- Further, unestimated expenditure for public budgets results from the other measures proposed, e.g. the accompanying research programme to expand day-care and school catering, implementation of the DGE quality standards, investments in public drinking water supply, the expansion of monitoring, information campaigns, the establishment of "digital ecosystems", the development of sustainability labels and the expansion of the data infrastructure of the Federal Food Code.
- In economic terms, these prevention and sustainability costs are (partly) offset by considerable savings potential. For example, state expenditure on day-care and school meals substitutes for parents' expenditure. In the long term, most of the proposed measures offer considerable potential for reducing health care and environmental costs.
- A change in food consumption styles, especially by reducing the consumption of animal products, is likely to save consumers' money. On the other hand, it requires the agricultural sector to make considerable adjustments towards business strategies targeting value added. This process must be accompanied by appropriate policies.

VI Conclusion

The proposed integrated food policy, with its coordinated mix of policy instruments and greater intervention intensity than hitherto, represents an important and necessary step to protect our health, our environment and our climate, to mitigate food poverty, to ensure compliance with minimum social standards and to enhance animal welfare. Fair food environments protect and benefit all of us. Implementation of the recommended measures requires considerable additional state expenditure. However, in relation to the current and anticipated high social and individual costs of current food consumption patterns, these additional expenditures represent a worthy investment for society at large. Postponing the necessary reorientation would exacerbate both the problems to be addressed and the need for adjustment.

The analysis presented in this report shows:

A comprehensive transformation of the food system is imperative and possible and should be commenced immediately

Publications of the Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection¹ (since 2012)

Designing an effective agri-environment-climate policy as part of the post-2020 EU Common Agricultural Policy, December 2019.

Opportunities, starting points and limitations of administrative simplification of the EU Common Agricultural Policy, April 2019.

For an EU Common Agricultural Policy serving the public good after 2020: Fundamental questions and recommendations, April 2018.

Climate change mitigation in agriculture and forestry and in the downstream sectors of food and timber use, joint report together with the Scientific Advisory Board on Forest Policy (WBW), executive summary, November 2016.

Pathways to a socially accepted livestock husbandry in Germany, executive summary and synthesis report, March 2015.

Amendment of the Fertiliser Application Ordinance (DüV): limiting nutrient surpluses effectively, joint report together with the Scientific Advisory Board for Fertiliser Issues (WBD) and the German Advisory Council on the Environment (SRU), August 2013.

Food security and sustainable productivity growth, report, January 2012.

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¹ Up to 2015: Scientific Advisory Board on Agricultural Policy (WBA). The Board publishes its reports mostly in German but individual reports and (executive) summaries are also available in English (https://www.bmel.de/EN/Ministry/Scientific-Advisory-Boards/_Texte/AgriculturalPolicyPublications.html).