



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

Promoting sustainability in food consumption

Developing an integrated food policy and creating fair food environments

EXECUTIVE SUMMARY and SYNTHESIS REPORT

December 2020¹



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² End of the term of appointment in 2019. Subsequently formally involved as external expert.

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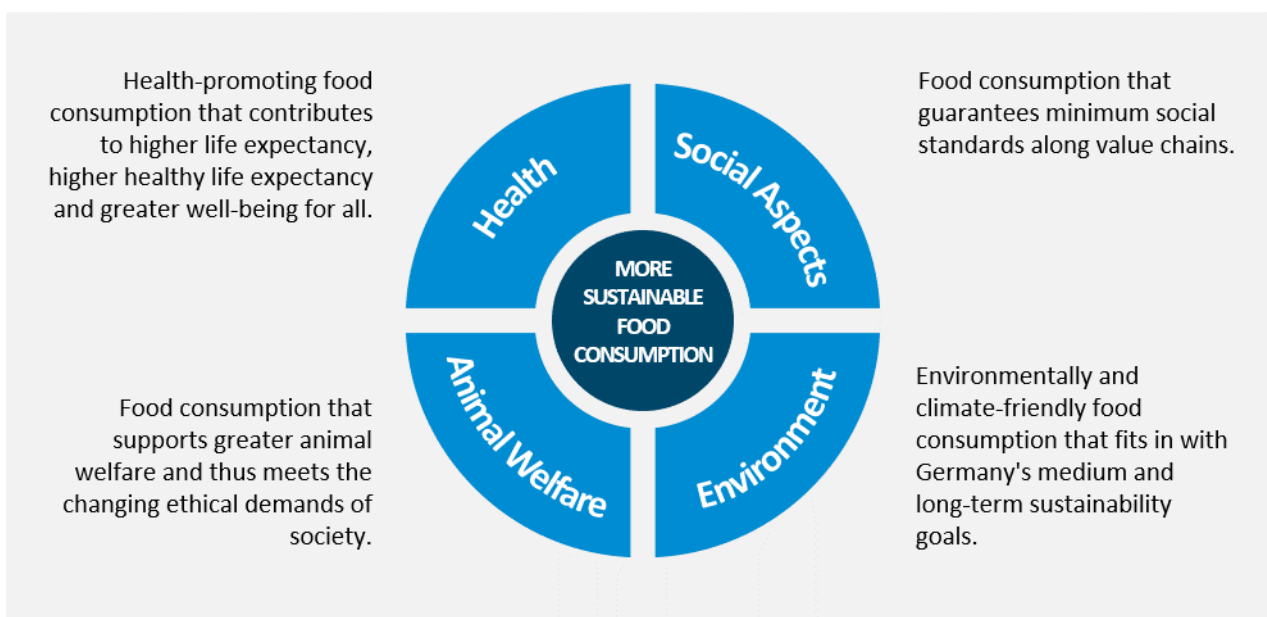
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Executive Summary

How we eat has a major impact on our individual health status, our quality of life and our well-being. Many of the foods we eat have a major social, environmental, climate and animal welfare footprint. This expertise defines policies to promote sustainability in food consumption as policies that integrate all four target dimensions: human health, social aspects, the natural environment (including climate) and animal welfare (Fig. ES-1). Achieving greater sustainability in food consumption poses great challenges. The necessary progress can only be achieved with a comprehensive transformation of today's food system.

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



Source: WBAE illustration.

The question of what constitutes greater sustainability in food consumption is more difficult to answer than often assumed by the public. As consumers, we are at the same time confronted with food environments that run counter to more sustainable shopping and eating habits. In view of this, the WBAE recommends that consumers should be given much more support in achieving greater sustainability in food consumption through the design of appropriate food environments. To this end, it is first of all necessary to reduce factors in today's prevailing food environments that hamper sustainability in food consumption (e.g. large portion sizes and high advertising expenditure on unhealthy foods). Secondly, it is important to offer food choices that are more health-promoting and have greater social, environmental and animal-welfare compatibility to make it easier to identify more sustainable options, to facilitate access to information and to set price incentives that entice consumers to opt for the more sustainable choice.

The WBAE describes such food and eating environments as fair, because and insofar as they are (1) attuned to our human perception, decision-making possibilities and behaviour; and (2) are more health-promoting and have greater social, ecological and animal-welfare compatibility and thus contribute to sustaining the livelihoods of the world's current and future generations.

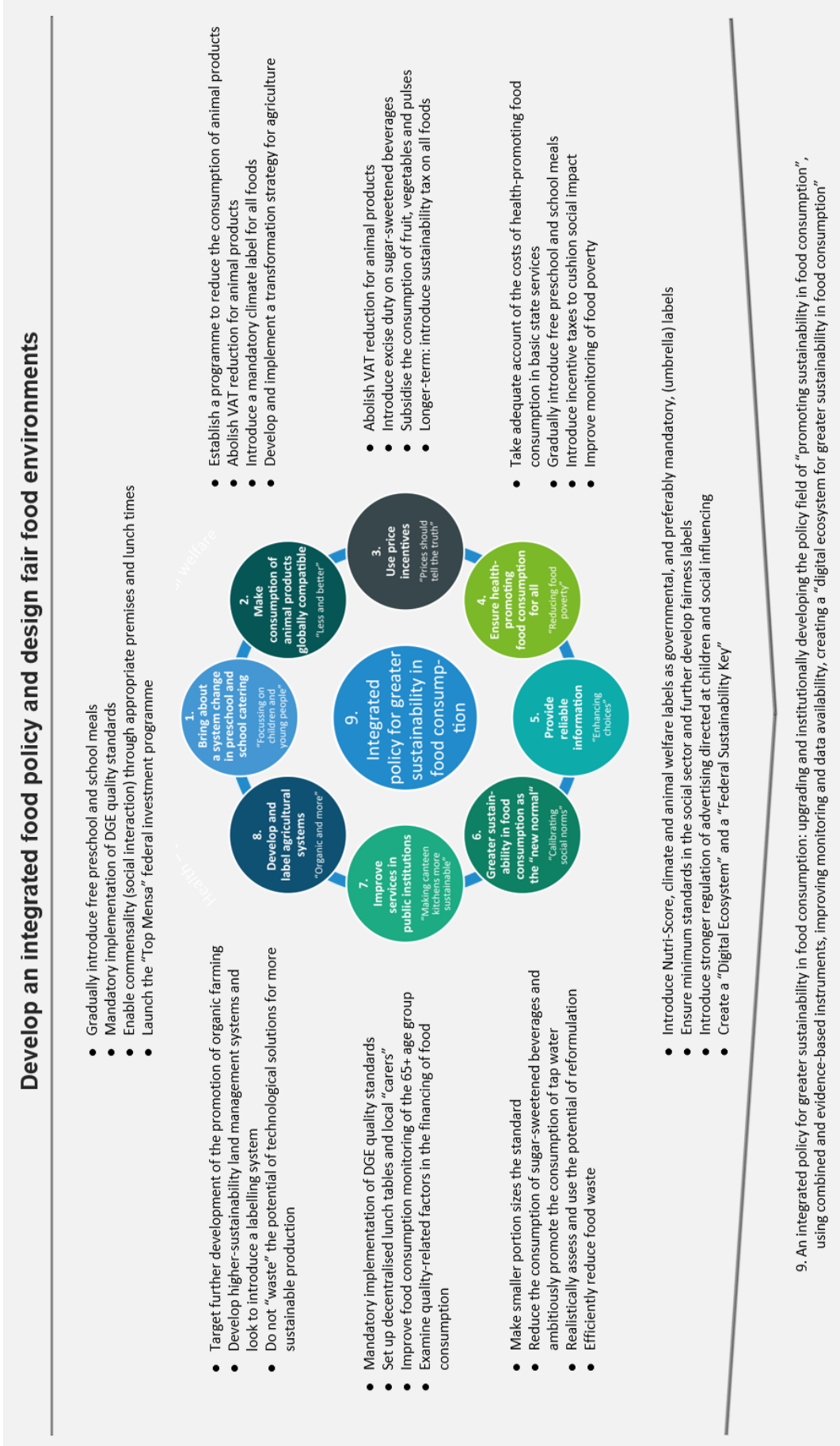
Existing conditions and environments in Germany are not very conducive to sustainability, too much responsibility is shifted to the individual and many available support instruments are not used. This expertise shows that Germany is lagging behind other European countries in this area. Emphasising the importance of appropriate food environments thus implies that a national policy for promoting sustainability in food consumption should use significantly more and deeper interventions, such as incentive taxes. In this expert opinion, the WBAE provides recommendations for a number of significant steps towards fair food environments. One main approach is to provide high-quality and free school and preschool meals.

The WBAE recommends a comprehensive reorientation and strengthening of the food policies, integrating the following four dimensions of sustainability: health, social aspects, environment and animal welfare. This requires policy to adopt a learning approach based on long-term, verifiable objectives. The necessary mix of instruments should be systematically tested, evaluated and adapted based on evidence. This necessitates stronger networking between the ministries (especially between the Ministry of Food and Agriculture, the Ministry of Health and the Ministry for the Environment) and between the various levels of government (ranging from the municipal level to EU level), as well as the scaling-up of personnel capacities with considerable budgetary increases for food and nutrition policy.

The proposed integrated food policy, with its coordinated mix of policy instruments and greater intervention intensity than hitherto (Figure ES-2: Key policy recommendations of the expertise) constitutes an important and necessary step to protect our health and environment, enhance climate stewardship, mitigate food poverty, ensure compliance with minimum social standards and enhance animal welfare. Fair food environments protect and benefit all of us. Implementation of the recommended measures requires considerable additional governmental expenditure. However, in relation to the current high costs of our present food consumption for society and individuals, and the expected high (follow-up) costs in the future, this additional expenditure represents a worthwhile investment in our society as a whole. Postponing the necessary reorientation would exacerbate both the problems to be addressed and the need for adjustment. The analysis presented in this expertise shows:

A comprehensive transformation of the food system is meaningful, feasible and should begin without delay.

Figure ES-2: Key policy recommendations



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I An integrated food policy is essential

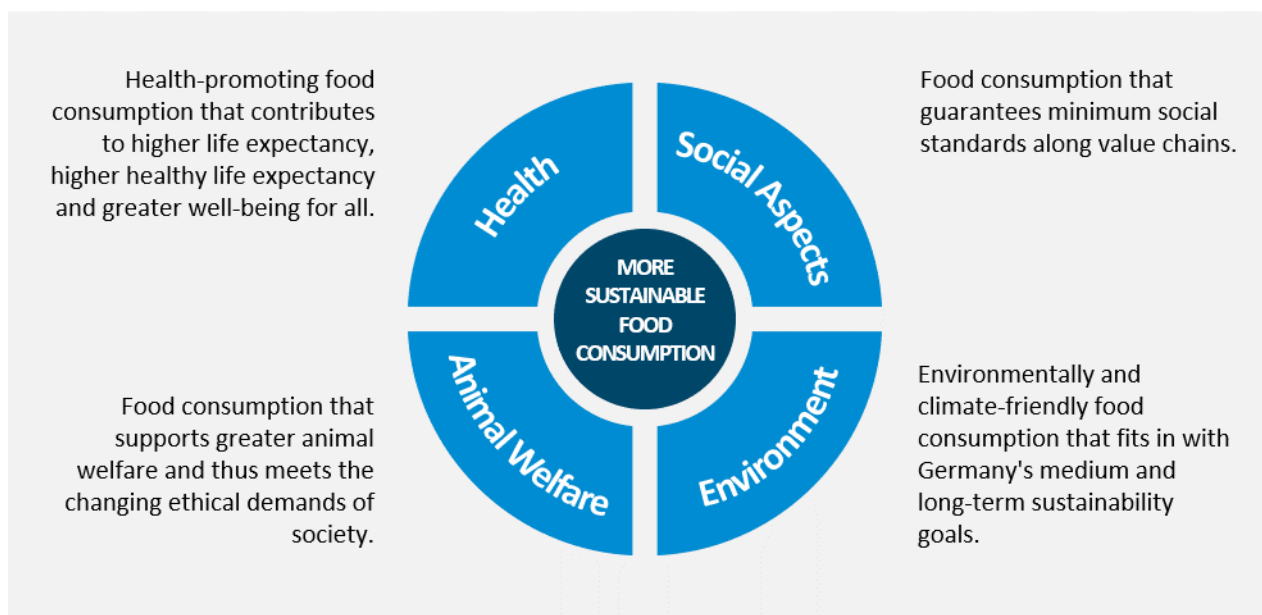
If sustainability goals at national, European and global levels (e.g. Sustainable Development Goals/SDGs and climate action goals) are to be achieved, all sectors must make far-reaching contributions – including the agricultural and food sector. Besides adjustments to agricultural production, this also requires changes to consumer habits. Our food consumption plays an important role in this regard: how we eat has a major impact on our individual health status, our well-being and our 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 want to eat healthier and more environmentally-friendly food. They want to know under what social conditions the food is produced and how the animals are kept. They are motivated to make a contribution to both their own health and to social goals. They are, however, often overwhelmed due to insufficient and in some cases contradictory information, limited choices and an unsupportive food and eating environment.

It is therefore necessary to establish an independent policy area: an integrated policy for promoting sustainability in food consumption that significantly improves the food environment. Compared with other European countries and beyond, Germany is lagging behind in this area. Existing **conditions and environments in Germany are not very conducive to sustainability, too much responsibility is shifted to the individual** and insufficient use is made of many available support instruments (cf. Sections 6 - 8 in the original report).

In this expertise on promoting sustainability in food consumption, the German Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection (WBAE) takes an in-depth look at food policy for the first time since the WBAE was formed from the former Scientific Advisory Board on Agricultural Policy (WBA, existed until 2015) and given an expanded remit. This expertise does not claim to comprehensively define sustainable food consumption, but instead aims, for a wealthy country such as Germany, to differentiate between **less sustainable and more sustainable food consumption patterns and to show how policies can support people in eating more sustainably** (Section 2 in the original report “Our own understanding of sustainability”). The issue of what is regarded as more or less sustainable is inevitably also based on value judgements. This expertise has set itself the goal of identifying the corresponding value decisions and thus enabling a discussion about them to take place.

With the focus on promoting sustainability in food consumption, the expertise focuses on the **four most important goals** in this regard: **human health – social aspects – the natural environment – and animal welfare** – i.e. the “**Big Four**” (Fig. 1, cf. Section 1 and 4 in the original report). Besides many synergies, there are also relevant trade-offs between these goals. An integrated food policy is ambitious and requires the policy area to be developed conceptually and better funded.

Figure 1: The four key goals of promoting sustainability in food consumption (“Big Four”)



Source: WBAE illustration.

With reference to the four key goals of a policy for promoting sustainability in food consumption, the expertise describes the following **main problems** (cf. Section 4 in the original report):

- (1) **Health** (Section 4.2): Measured against its wealth, Germany is only mediocre in terms of its food-related health indicators (e.g. high prevalence of overweight or obesity). Poverty clearly correlates with health impairments caused or contributed to by food.
- (2) **Social aspects** (Section 4.3): Germany has enacted extensive labour and social legislation. At the same time, there appear to be deficits in implementation, especially regarding seasonal workers, agency workers, the slaughtering industry and the restaurant and catering sector. Forced labour, serious forms of child labour and other violations of the International Labour Organisation's (ILO) core labour standards are common in the global agricultural sector.
- (3) **Environment** (Section 4.4): Avoidable negative ecological effects occur in the food value chain (from manufacturing the means of production and agricultural production to processing, trade and consumption), particularly regarding biodiversity, nitrogen emissions and greenhouse gas emissions. One of the main focuses of food-related environmental protection and climate action is on shifting consumption to more environmentally and climate-friendly foods, in particular, in the cases of Germany and other industrialised countries, by reducing food waste and the consumption of animal products.
- (4) **Animal welfare** (Section 4.5): In recent years, some individual steps have been taken towards modifying livestock husbandry with a view to improving animal welfare. However, no politically legitimised decision-makers have, as yet, adopted any comprehensive strategy that also

includes the funding of the necessary restructuring of livestock husbandry and that would consequently enable greater progress to be made.

Politicians, consumers and industry are confronted with many – often inconsistent – recommendations on sustainability in food consumption. In order to be able to systematically pursue the goal of greater sustainability in food consumption, they need some kind of “compass” which both provides guidance and also permits systematic monitoring.

The WBAE has evaluated **popular food consumption recommendations** with regard to the four key goals of promoting sustainability in food consumption (cf. Section 5 in the original report “Identification and measurement of sustainable food consumption”). An evaluation such as this is necessarily a simplification and is subject to methodological limitations. The expertise identifies in particular one **problem regarding evaluation**, namely that of the (different) reference systems under consideration: many recommendations on what makes food consumption more sustainable refer to agricultural production systems (e.g. organic farming versus conventional farming, Section 5.2). Other recommendations focus on individual foods and their impact during their life cycle, while others consider specific food groups or food consumption patterns (Section 5.3). In addition to these different viewpoints, there is, finally, also the spatial dimension of food systems (global, national, regional) (Section 5.4).

It is **not easy to integrate these different dimensions when evaluating sustainable food consumption**, which is a key reason for the inconsistency of many sustainability recommendations. This problem is exacerbated by the fact that these assessment systems are at different stages of development in respect of the various different aspects of sustainability.

Despite all the limitations, it is possible to draw a number of reasonably sound conclusions for consumers (cf. Section 5.5 and Tables 5-13 to 5-15 in the original report):

- (1) The various recommendations on the consumption of **health-promoting** products make only limited contributions – there is no “superfood”. A key recommendation is instead to adopt a health-promoting dietary pattern i.e. a balanced combination of foods with predominantly favourable nutrient profiles. There are a number of different recommended dietary patterns (recommendations by the German Nutrition Society (Deutsche Gesellschaft für Ernährung, DGE), the Healthy Eating Index, the DASH diet, the Mediterranean diet), which consumers can use as guidance. Which of these dietary patterns the consumers then decide to follow is a matter of personal preference.
- (2) The recording and evaluation of the **social dimension** of food consumption has not been sufficiently conceptualised. The social footprint generated by a food along the value chain is at present insufficiently recorded and not apparent to consumers. At global level – and quite often also in the EU and sometimes in Germany – it is unclear whether foods are produced in compliance with minimum social standards. Of all the labels considered, the only ones that can be positively recommended overall in respect of their social effects are the organic label

and the fair trade label. The Advisory Board believes that the greatest medium-term to long-term potential for positive social effects relating to greater sustainability in food consumption, social participation and “social cohesion” here in Germany lies in cooking in or for a group of people and in eating as a group (e.g. in preschools and schools). This has a positive impact on psychological well-being, social ties and physical and mental performance, and can create important social learning spaces.

- (3) There are many different approaches to **promoting environmental compatibility** in food consumption. One important approach is to reduce the consumption of meat and other animal products, while another is to avoid food losses. The consumption of organic produce can also contribute to some extent to promoting environmental compatibility in food consumption (e.g. positive biodiversity effects). Another meaningful measure is to avoid air-freight goods and products from greenhouses heated using fossil fuels. By contrast, regional production is not always the best choice from the standpoint of sustainability, and re-usable packaging is not always more environmentally-compatible than single-use packaging.
- (4) **Animal-welfare orientated** food consumption stands and falls with choosing products with higher animal-welfare standards. Consuming fewer animal products can contribute to higher levels of animal welfare if consumers adopt the policy of “less and better”. If animal products are primarily replaced with more vegetables and legumes, this will result in significant synergies with health and environmental goals. However, the transformation to “less and better” poses a considerable social and economic challenge to the agricultural sector.

There are many possible **synergies** between the four objectives of health, social aspects, the environment and animal welfare; however, there are also **trade-offs**. An important example illustrates this: the productivity of pig and poultry farming is of top priority in terms of climate change mitigation. However, very rapid growth and very high performance often go hand in hand with animal-welfare problems. To a certain extent, improved husbandry conditions and targeted breeding for animal welfare-related functional traits can mitigate the trade-offs, but the WBA (2015) has also highlighted the limitations of this approach. From an animal welfare perspective, it would be necessary to “de-intensify” the current intensive husbandry systems for most farm animals. This trade-off with the goal of climate change mitigation can be mitigated by reducing the consumption of animal products.

The WBAE believes it is imperative to have an integrated approach, given the multi-dimensionality of the goals, the existence of synergies, and also the trade-offs between goals that exist in some cases. In political practice, however, the responsibilities for health-promoting food consumption, minimum social standards of decent work, environmental protection and animal welfare lie with different ministries and departments and are therefore mostly viewed separately.

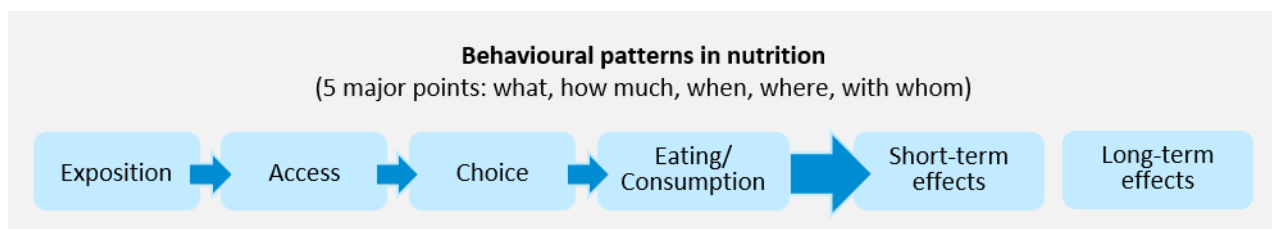
A policy to promote sustainability in food consumption therefore necessitates significantly greater networking between the different policy areas (health, social, environmental, animal welfare, and also agricultural policy). There is still a lot of work to be done to develop the conceptual framework

for such an **integrated food policy**. This expertise therefore recommends that the Federal Government should institutionalise the policy area of “promoting sustainability in food consumption” to a greater degree, engage in capacity-building, expand monitoring and pursue a science-based “learning by doing” approach (cf. Sections 8 and 9 in the original report).

II The food environment as a crucial but underestimated key driver

One of the main focuses of this expertise is on the **food environment**, which exerts a major influence on food consumption and eating behaviour (cf. Section 3 in the original report). The influence of the food environment on eating behaviour is very far-reaching and must be understood in far greater depth than is currently the case in food policy. The **food environment** encompasses the entire **behavioural process**. The latter can be divided into four phases: **exposure – access – choice – consumption** (Fig. 2).

Figure 2: Phases of the behavioural process



Source: Renner (2019, 2015).

The food environment begins with the **exposure** to food and food stimuli (e.g. in advertisements and on social media). This determines how aware we are of food in our everyday lives and what we consider normal. Exposure calibrates our perceptual field; currently, this field is often calibrated towards products with an unfavourable nutrient profile (e.g. fast food, soft drinks) and a poor climate footprint.

Access to food depends on various factors, including price, availability of information, and social eating and behavioural norms. The latter determine what food it is acceptable and appropriate to offer in the first place. The social structure (e.g. meal times) and the variety of foods on offer (e.g. convenience aspects, portion sizes) exert a particularly strong influence on how much food consumers want to consume, what food they wish to consume, and when, where and with whom they can (and want to) consume it. Recently, so-called “digital ecosystems” (cf. Section 8.10.3 in the original report) in and around private households and in the away-from-home sector have increasingly been developed by 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” means that food is now on offer 24/7 practically everywhere and the demands on individuals to self-regulate their behaviour (“to control oneself in view

of the omnipresent food supply”) continue to increase. At the same time, however, “digital ecosystems” can also allow simple, networked access to reliable information on making food consumption more sustainable.

Actual food **choices** are shaped by socio-economic aspects, preferences, attitudes, knowledge, social norms and habits. Marketing and – to an increasing extent – social media are influential environmental factors that associate food with certain values and characteristics, which then influence consumer preferences. Products are often associated with emotions and social aspects (e.g. status, popularity, affiliation) that are independent of the actual nutritional value or taste of the products (cf. Sections 6.4 and 8.5 in the original report). In the food sector, foods with unfavourable nutrient profiles often yield the highest returns and are therefore the focus of marketing activities.

The above-mentioned environmental factors play a role in determining **consumption**, i.e. what food is eaten, and how much and how quickly it is eaten. In addition to this, there are a number of other crucial aspects relating to the actual food environment, such as the range of foods and dishes on offer (quality, quantity, choice), the properties of the foods and dishes (e.g. portion size), the environment (e.g. noise, time pressure, stress), the ambience (space, light, temperature, smell, music) and the social environment (community, type of social event). The eating environment, notably the ambience and whether people eat and drink together, performs key emotional and social functions. Empirical findings provide impressive evidence that eating together significantly enhances our psychological well-being, social ties, cohesion and our physical and mental performance (cf. Section 3.1 in the original report). The atmosphere in which food is eaten conveys social norms and appreciation of food implicitly and with long-term effects.

A key finding of the expertise is that **the influence of food environments is underestimated** in the public and political debate, whereas **individuals’ control over their actions is significantly overestimated**. Consumers and political decision-makers are frequently 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 actually have to make a lot of food decisions every day, namely in deciding what they eat, how much they eat, and when, where and with whom they eat, and in explicitly saying “no” and suppressing the corresponding behavioural impulses in an environment that draws attention to food and eating almost constantly.

In everyday life, which makes so many demands of consumers, food consumption behaviour is not just the result of conscious and reflective decisions; it is often also the result of the available options for action and of habitual influences that consumers are not aware of at the time. Food environments have an impact before the consumption phase as well as during it. How and where food is placed and advertised, how attractive the packaging is and how large the portions are all have an influence on consumers’ perception and learning processes. The food environment also defines the framework for consumer choices and thus the standards for consumer behaviour.

The design of the food environment may focus – as is currently usually the case – on individual economic goals or – as is proposed in this expertise – more strongly on health, social objectives, the environment and animal welfare. In this expertise, the WBAE recommends that consumers should be given much more support than hitherto in making their food consumption more sustainable through the design of appropriate food environments. To this end, it is first of all necessary to reduce the factors in today's prevailing food environments that make food consumption less sustainable (e.g. large portion sizes, high advertising expenditure on unhealthy foods). Secondly, it is important to offer food choices that are more health-promoting and have greater social, environmental and animal-welfare compatibility, to make it easier to identify more sustainable options, to facilitate easier access to information and to set price incentives that entice consumers to opt for food that is healthier and has greater social, environmental and animal-welfare compatibility.

The WBAE describes such food environments as **fair** because and insofar as they are (1) attuned to our human perception, decision-making possibilities and behaviour; and (2) are more health-promoting and have greater social, ecological and animal-welfare compatibility and thus contribute to sustaining the livelihoods of the world's current and future generations.

Conversely, this is also a criticism of making food consumption too dependent on individual responsibility. The WBAE believes that food policy in Germany has hitherto made the promotion of sustainability in food consumption too dependent on individual responsibility. Emphasising the importance of appropriate food environments thus implies that a national policy for promoting sustainability in food consumption requires significantly more and deeper interventions.

Key measures to improve food environments include, for example, high-quality communal catering, especially having more sustainable catering in preschools and schools that is accessible to all children, advertising-free spaces, drinking-water dispensers in public buildings, suitable price incentives and the provision of behaviour-orientated and action-orientated information, more transparency about and restrictions on advertising in social media (social influencing), appropriate portion sizes and the creation of pleasant eating environments in preschools, 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 diseases caused or contributed to by diet (cf. Section 6 in the original report “Is governmental food control legitimate?” and Section 7 “Governance of the food system”). This makes it **necessary to focus interventions more strongly on the consumption side**. Measures focusing on the consumption side complement the classic regulatory and economic instruments that target the supply side; the latter reach their limits in open economies and due to varying levels of international regulation.

By international standards, Germany is a country with a **relatively lax regulatory framework** in the area of food consumption. Germany relies particularly heavily on the individual and on the family and, in the WBAE’s opinion, overburdens them. Analysis of the political and administrative system shows that an active governmental food policy tends to be regarded sceptically in political circles. The political parties that call for the government to play a more active role concentrate their proposals on aspects of preschool and school catering. With regard to the environmental dimension of sustainable food consumption, the proposals mainly concern the use of organic food in school and preschool catering and in general, the promotion of organic farming; this is, however, not sufficient. Food poverty and poor working conditions in various sectors of the food chain generally receive little attention from any political parties. The election manifestos of all parties are also restrained in respect of measures that aim to influence the food consumption habits of adults. This is presumably due to the fear of a lack of acceptance, exacerbated by the great media impact that food-related topics generally have. This fear was not unfounded in the past, but the acceptance of more interventionist measures, which are increasingly being used globally, is also rising in Germany.

There is no ideal, intervention-free situation which could be used as a **benchmark** to measure the **legitimacy** of governmental intervention focusing on the consumption side. Contemporary food environments are characterised by a large number of interventions. In this sense, “free” nutritional decisions are an illusion: what we consume and how we eat is always heavily influenced by the food environment. Some aspects of the food environment are prescribed or at least influenced by governmental action, in particular through information and labelling policies, but also through differential taxation of food products and the resultant effect on food-price ratios. Other aspects (e.g. advertising, product placement, the location of retail outlets, pricing policies) are mainly influenced by the companies along the food chain. These aspects are in turn more or less strictly regulated by the state. In view of this, the question is not so much whether it is permissible for the state to actively influence food environments, but rather what kind of influence citizens find socially desirable and what helps them to eat more sustainably in their busy day-to-day lives. The core issue is to strike the right balance between the legally guaranteed freedom of the individual and considerations of the common good. In particular, decisions must be made regarding the extent of food-policy interventions in consumer behaviour and the choice of instruments. This concerns the effectiveness and efficiency of instruments and their potential unintended side-effects. This expertise shows that there are good reasons for a comprehensive policy to promote sustainability in

food consumption and that instruments targeting consumers and the food environment should be an integral part of the instrument mix.

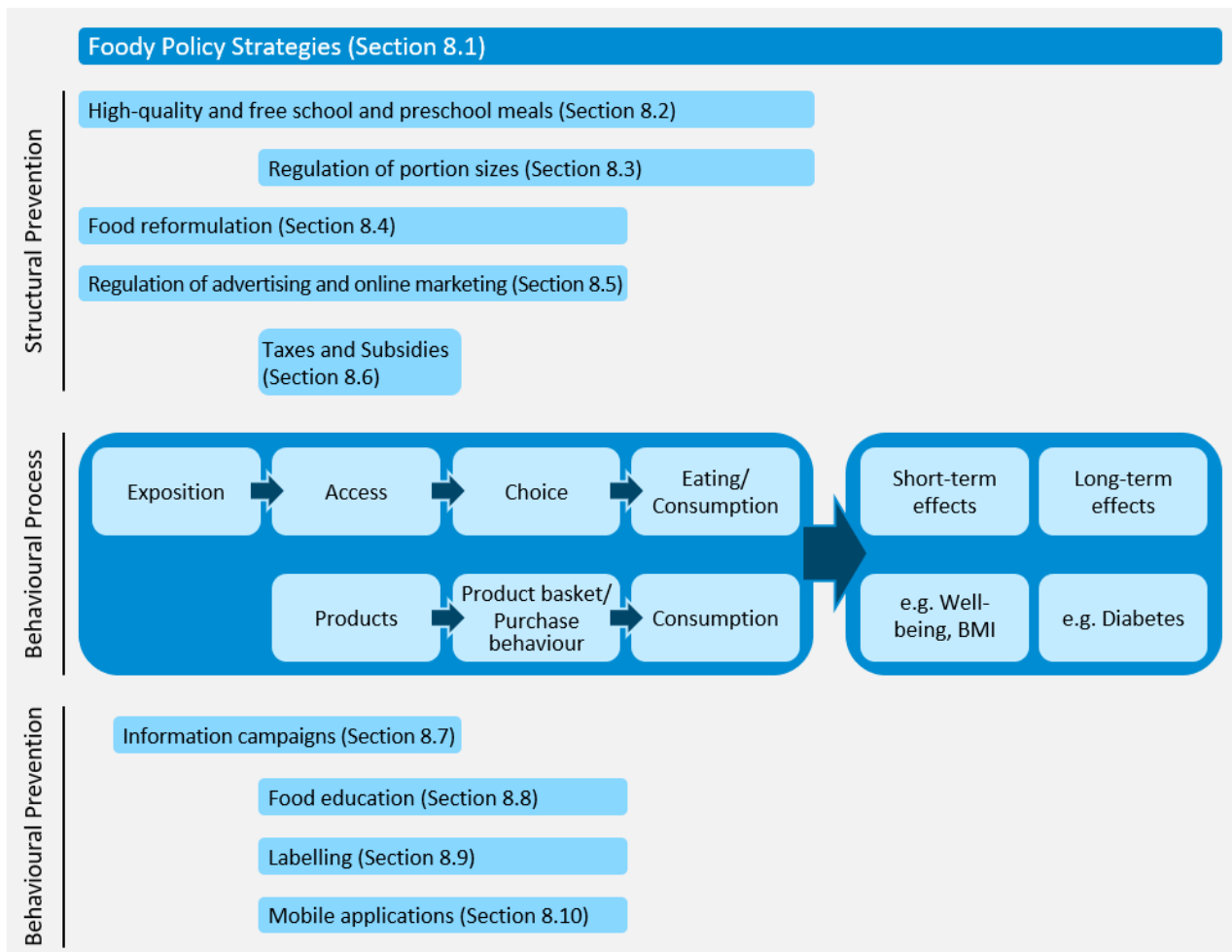
One central control problem is that the responsibility for food consumption in Germany's federal system is distributed across different levels of government, and different ministries deal with different aspects of food consumption. This currently leads to a **diffusion of responsibility**. This is particularly evident in the field of school and preschool catering policies. A first few coordinating institutions have been established to improve coordination and networking between the many stakeholders in the field of school and preschool catering policies. However, their organisational structures and financial resources are not currently up to the task. Organisational and funding deficits are particularly problematic because the market in the communal catering sector does not function well enough. Enhanced public governance and support are therefore needed. The responsible municipalities are, however, reaching their limits – both regarding their management capacities and in relation to their sources of financing. Further governance problems exist in the area of the internalisation of external costs and of labelling (cf. Section 7.5 in the original report).

IV Towards greater sustainability in food consumption: Recommendations

Food-policy instruments can be applied to the different **phases of the behavioural process** (Fig. 2). Some instruments, such as free, high-quality school and preschool catering, address all phases of the behavioural process: this increases the exposure to health-promoting foods and meals, but also changes the general access to the respective offers and the range of options available. The design of the food on offer (e.g. quality, portion size) and of the food environment (e.g. equipment in the dining room) also directly influences eating behaviour. Free, high-quality school and preschool catering therefore has a broad effect on behaviour.

Other instruments, by contrast, mainly address only one phase of the behavioural process, but then usually also have knock-on effects on the other phases of the behavioural process (Fig. 3). Taxes, for example, primarily influence access to food by making the respective food more expensive and thus less accessible and less attractive. This change then has secondary effects, for example on choice and consumption and, potentially, also on exposure, if products are no longer offered due to falling demand. Generally, it appears plausible to assume that an instrument is more effective (in terms of promoting sustainability in food consumption) the more phases this instrument directly addresses.

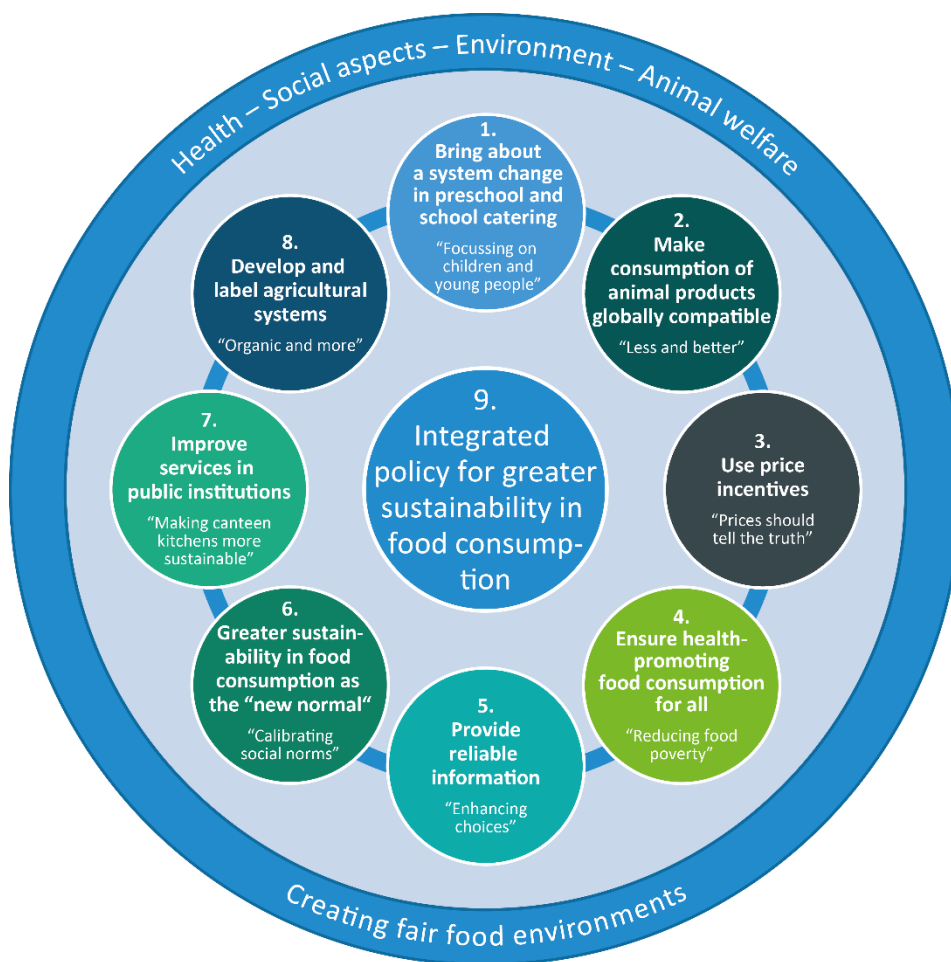
Figure 3: Systematic representation of policy instruments according to which phase of the behavioural process they primarily address



Source: WBAE illustration; cf. also Section 8.1 and Section 3.3 in the original report.

In general, a single instrument is significantly less effective than a well-coordinated **instrument mix** (cf. Section 8 in the original report). The fact that food consumption is so heavily dependent on habit means that what is needed is a coherent and consistent policy mix and a conceptual and budgetary expansion of the policy field. The necessary instrument mix should, as part of a comprehensive strategy with long-term, verifiable targets, be tested in a targeted and committed manner in the sense of a reflexive policy, consistently evaluated and then adapted based on evidence and lessons learned. This presupposes a transparent monitoring system. Institutional development and strengthening of the policy field also requires stronger networking between the relevant ministries (in particular food and agriculture, health and environment) and between the various levels of government (from municipalities to the EU). On the basis of this analysis, the WBAE makes **nine key recommendations for an integrated policy to promote sustainability in food consumption** in Germany, as shown in Figure 4 (cf. Section 9 in the original report).

Figure 4: Nine key recommendations for an integrated policy to promote sustainability in food consumption



Source: WBAE illustration; cf. section 9.1 in the original report.

These main, and in some cases overlapping, recommendations for a policy to promote sustainability in food consumption are presented below.

Recommendation: Bring about a system change in preschool and school catering – “Focusing on children and young people”



The current catering situation in schools and preschools is characterised predominantly by the food on offer being of poor quality and the food environment being largely unattractive. This leads to low participation and consequently high costs per meal. Preschools and schools are important places of learning and social integration for children and young people. Clear governmental steering impulses are needed in order to utilise this potential for greater sustainability in food consumption.

The WBAE recommends bringing about the necessary system change in school and preschool catering by means of the following elements (cf. Section 9.2 in the original report):

- **Gradual, evidence-based introduction of free meals in preschools and schools** (target group: municipalities, federal states, Federal Government).
- **The creation of fair food environments** through: (1) the mandatory adoption of the DGE quality standards (Federal Government, federal states, municipalities, and school and preschool management); (2) the provision of appropriate premises, facilities and meal times that promote commensality (social interaction) (Federal Government, federal states, municipalities, and school and preschool management); (3) the regulation of competing catering services (private cafeterias, kiosks and vending machines) (federal states, municipalities, school authorities); and (4) the qualitative strengthening of action-orientated food consumption education (federal states, school authorities).
- **Launch of “Best canteen”, a federal investment** programme for a qualitative and quantitative expansion of preschool and school catering (Federal Government, federal states, municipalities).

Recommendation: Make the consumption of animal products globally compatible – “Less and better”



Globally compatible food consumption urgently requires a reduction in the high consumption of animal products in wealthy countries. Reducing the consumption of these products could result in beneficial health effects in Germany. On the production side, a transformation of livestock husbandry would open up opportunities for greater animal welfare and contribute towards climate change mitigation and the protection of biodiversity. This transformation should be embedded in a comprehensive livestock and food consumption strategy.

The WBAE recommends in particular (cf. Section 9.3 in the original report):

- **Promote the 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 for animal products and, in the long term, introducing a specific sustainability tax (Federal Government); (2) developing and introducing a mandatory climate label for all foods (Federal Government); (3) conducting an information campaign to raise consumer awareness of the climate relevance of animal products and to 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 municipalities).
- **Counteracting undesired side-effects** by: (1) socially cushioning the increased tax burden (value-added tax, in the longer term 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) paying due regard to undesired side-effects of climate-action efforts in livestock production in relation to animal welfare; and (4) drafting and implementing a transformation strategy to improve added value in the food and agricultural sector (Federal Government, federal states).

Recommendation: Use price incentives – “Prices should tell the truth”



The necessary transition towards more sustainable consumption patterns will not be able to be built on intrinsic motivation and conscious decisions alone. The WBAE recommends significantly strengthening the price incentives for greater sustainability in food consumption in key areas of action. This should be made socially compatible by reducing the burden on lower-income households.

The WBAE recommends (cf. Section 9.4 in the original report):

- **Setting price incentives for reducing 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 sugary beverages proportional to the free-sugar content which is then gradually increased over time (Federal Government); and (3) in the longer term introducing a specific sustainability tax on all foods (Federal Government).
- **Using the financial leeway this provides at federal and state level to invest in promoting sustainability in food consumption**, in particular through: (1) a tax rebate in the sense of a sustainability bonus for lower-income households; (2) a reduction in VAT on fruit, vegetables and pulses; (3) a conversion to more animal-friendly livestock husbandry; and (4) high-quality, free school and preschool catering (Federal Government, federal states, municipalities).

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



Even in a relatively prosperous country such as Germany, there is poverty-related malnutrition and even hunger. A policy promoting sustainability in food consumption should take greater account of the living conditions of low-income population groups and further develop support services aimed at specific target groups.

The WBAE recommends (cf. Section 9.5 in the original report):

- **Ensuring access to health-promoting food consumption for all** through: (1) taking adequate account of the costs of health-promoting food consumption in the calculation of social security benefits by the state (Federal Government); and (2) gradually introducing high-quality, free school and preschool catering (Federal Government, federal states, municipalities).
- **Avoid adverse effects of a policy for promoting sustainability in food consumption on low-income sections of the population** through: (1) social cushioning of changes in the taxation of

food products (Federal Government); and (2) a fundamental 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 the reliability of information on key sustainability characteristics are key for promoting sustainability in food consumption. Currently there is a great lack of reliable information on and about products. Advertising, modern information media and digital applications (e.g. Apps) are often fragmented, not very user-friendly and not targeted to more sustainable choices.

The WBAE recommends significantly expanding the information infrastructure by means of the following elements (cf. Section 9.6 in the original report):

- **Developing an effective labelling policy**, in particular by: (1) introducing compulsory government labels for the key 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) laying down a standard design for governmental food labels (“umbrella labels”) (Federal Government); (5) strengthening the development of methods and data collection for sustainability labels by commissioning a (governmental) 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) continuing to promote the introduction of Nutri-Score in Germany (Federal Government, industry); (2) supporting the EU-wide mandatory introduction of Nutri-Score (Federal Government, EU); (3) continuing to improve the validity of Nutri-Score through research (Federal Government); (4) emphasising the value of many unprocessed raw products not included in Nutri-Score (Federal Government, industry); (5) restricting the use of health claims to products with a positive health rating (levels A and B of Nutri-Score) (Federal Government, EU); (6) making it mandatory for companies to display the Nutri-Score in food advertising (Federal Government); and (7) monitoring and, if necessary, prohibiting the use of so-called “feel-good labels” and “feel-good claims”, i.e. marketing terms and signs which refer indirectly to health and are not regulated by law (Federal Government, federal states).
 - **With regard to the social dimension**, the WBAE recommends ensuring minimum standards in the social field so that consumers can rely on the fact that these are actually complied with, in particular: (1) ensuring appropriate monitoring of compliance with 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 under the National Action Plan on Business and Human Rights and, if necessary, enacting appropriate legislation (Federal Government); and (4) further developing the WTO regulations on ethical matters (e.g. labelling obligations) (Federal Government, EU, WTO). The WBAE also recommends, in respect of fairness aspects that go beyond minimum standards: (5) promoting the advancement of international fairness labels for the protection of dependent employees (Federal Government, industry, NGOs); and (6) developing and reviewing a legal framework for the use of voluntary fairness labels in Germany (Federal Government).

- **With regard to the environmental dimension**, the WBAE particularly recommends: (1) introducing a climate label based on product-specific standard values and supplementary company-specific values (Federal Government, industry); (2) examining the introduction of a mandatory requirement to display the climate label in food advertising; and (3) take action at EU level to advocate the EU-wide mandatory introduction of a climate label (Federal Government). In addition to this, the WBAE recommends: (4) creating a database on average greenhouse gas emissions of various different foods and promoting methodological conventions (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 particularly recommends: (1) developing a multi-stage governmental animal welfare label with increasing requirements over time (Federal Government); (2) integrating the animal welfare label into a national livestock strategy (Federal Government, federal states); (3) working towards mandatory labelling at EU level (Federal Government, EU); and (4) regulating under law the use of animal-welfare terms (Federal Government).
- **Making the advertising environment more sustainable** by: (1) restricting adverts for foods with little or no health-promoting effects that are aimed at children (Federal Government); and (2) banning advertising for foods in schools and preschools (federal states, municipalities); (3) making the Nutri-Score mandatory in food advertising (Federal Government); and (4) making it mandatory for advertising measures in social media to always be identified as such (Federal Government).
- **Creating a “digital ecosystem for promoting sustainability in food consumption”** by: (1) developing and advancing apps and digital applications into a “digital ecosystem for promoting sustainability in food consumption”, which provides applications and data in the field of food consumption for the entire behavioural process and integrates them in a comprehensible manner (Federal Government); (2) creating a valid, integrated, open-access database (“Federal Sustainability Key”) (Federal Government); (3) providing greater legal protection regarding the availability of consumers’ personal data and enabling voluntary data donations to be made (Federal Government); and (4) subjecting private, smart “digital ecosystems” to quality control measures (Federal Government, federal states).

Recommendation: Greater sustainability in food consumption as the “new normal” – “Calibrating social norms”



The foods on offer and the portion sizes “calibrate” what people perceive as “normal” and “appropriate” (social norm). Social norms have a decisive influence on consumer behaviour. It is therefore important that greater attention is paid to exposure and access as important elements of the food environment and that greater exposure and access to more sustainable products becomes the “new normal”.

The WBAE recommends (cf. Section 9.7 in the original report):

- **Making smaller portion sizes the standard** by: (1) making adoption of the DGE quality standards mandatory for public communal catering (Federal Government, federal states, municipalities); and (2) ensuring availability of smaller portion sizes in the away-from-home catering (Federal Government, federal states, municipalities, industry). In addition to this, the WBAE recommends: (3) increasing the population’s awareness of the effect of portion sizes and acceptance of measures to regulate and avoid the effect by integrating the issue of portion sizes more strongly into the BMEL’s “Too Good for the Bin” campaign (Federal Government); (4) testing innovative measures to reduce or avoid the portion-size effect (Federal Government, federal states); and (5) initiating voluntary measures by industry (Federal Government, industry).
- **Reducing consumption of sugar-sweetened drinks and ambitiously promoting consumption of tap water.** The WBAE recommends launching a national Action Programme on Reducing Sugar-Sweetened Drinks that combines the following measures: (1) the introduction of a tax on sugar-sweetened beverages according to their free-sugar content (Federal Government); (2) the free provision of tap water in public places (Federal Government, federal states, municipalities); (3) the mandatory labelling of beverages with the Nutri-Score (Federal Government); (4) ambitious promotion of tap water offers in the restaurant and catering sector and in retail (Federal Government, federal states); (5) the mandatory requirement to offer water or other non-caloric beverages as the standard option in children’s menus (Federal Government, federal states, municipalities); (6) a reduction in the supply of sugar-sweetened beverages in public institutions and an increase in the attractiveness of tap water consumption (federal states, municipalities, Federal Government); (7) a widespread information campaign on avoiding the “beverage trap”; (8) the promotion of small beverage sizes in the restaurant and catering sector and in the away-from-home market (Federal Government, federal states); (9) a ban on advertising for products with a high sugar content that is aimed at children (Federal Government); and (10) promotion of the consumption of light spritzers through reformulation (Federal Government).
- **Realistically assessing and exploiting the potential of reformulation** by continuing and advancing the BMEL’s national reduction and innovation strategy. The reformulation measures should in particular be: (1) prioritised and initially focused on sugar content and specific product

groups (Federal Government, industry); (2) systematically underpinned by scientific evidence (Federal Government); and (3) extended, based on this scientific evidence, to include other product groups and the away-from-home sector (Federal Government, industry). In addition to this: (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 tightened where necessary (Federal Government).

- **Efficiently reducing food waste** by: (1) establishing 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 expanding the BMEL's "Too Good for the Bin" campaign. In addition to this: (4) the reduction potential of smaller portion sizes should be researched (Federal Government), (5) food banks should be better supported through infrastructure funding (federal states, municipalities); and (6) a legal requirement for retailers and bakeries to donate food which is still edible should be examined (Federal Government, federal states). Finally, (7) public communal catering should set a good (management) example, e.g. by using planning tools and implementing DGE standards (Federal Government, federal states, municipalities).

Recommendation: Improve services in public institutions – “Making canteen kitchens more sustainable”



Food and nutrition currently tends to be a secondary topic in the health system. This means that considerable quality deficits are accepted and the wrong signals are sent to clients and society at large. The WBAE therefore recommends, in residential care homes for the elderly, hospitals and rehabilitation centres, that food consumption should not just be considered from a practical perspective; instead, it should also be ensured that the food and food environment is of a high quality.

The WBAE recommends (cf. Section 9.8 in the original report):

- **Rethinking catering for senior citizens.** In order to improve the nutritional and health-related care situation of the elderly: (1) the DGE quality standards for catering for senior citizens should be made compulsory in all senior-citizen institutions (Federal Government, municipalities); and (2) decentralised eating arrangements (“Meals on Wheels”) and municipal “carers” (federal states, municipalities) should be made available. In order to improve the data situation on the living situation of the over 65s: (3) monitoring of the care situation and evaluation of measures for the over 65s, with a focus on old-age poverty, should be improved (Federal Government, federal states, municipalities); and (4) nutritional screenings should be introduced in clinics, inpatient institutions and GP practices, and nursing staff and physicians sensitised for nutritional issues (Federal Government, SHI & private health insurers, Medical Associations).

- **Advocating health-promoting food in the health system** by: (1) prescribing and monitoring the DGE quality standards for catering in hospitals and rehabilitation clinics (Federal Government, federal states, SHI and 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 and private health insurers).

Recommendation: **Develop and label agricultural systems – “Organic and more”**



Organic farming is a comparatively environmentally-friendly system, which also provides impetus for innovation for the entire agricultural sector. It should therefore continue to be supported financially. However, having more organic farming does not provide greater sustainability in every respect; the aim should therefore not be to completely convert agriculture to organic farming. Often, (overly) sweeping comparisons of “conventional” versus “organic” are not appropriate since they do not reflect the reality of agriculture and its myriad farming concepts. Viewed globally, it is possible to conceive of farming systems that are more sustainable and have greater land-use efficiency than organic farming as it is currently defined.

The WBAE recommends (cf. Section 9.9 in the original report):

- **Advancing the promotion of organic farming in a targeted manner** (Federal Government, federal states). Organic farming support should continue to be expanded in areas where particularly high benefits are expected (e.g. in Section 13-Defined areas in the Fertiliser Application Ordinance (“red areas”)), and by better combining organic aid with other agri-environmental measures.
- **Reviewing the positive effects of organic farming at intervals** (e.g. if the 20% target is reached) while also taking into account the potential negative displacement effects (Federal Government).
- **Developing farming systems with greater sustainability and making them recognisable to food processors and, in later development stages, also to consumers.** To achieve more sustainable development, organic farming should be advanced (aim: to reduce the yield gap between organic and conventional farming). In addition to this, policies should support the development of intermediate forms of farming systems with greater sustainability that can compete with organic farming in terms of environmental performance but that achieve higher yields. Such approaches should, in the longer term, be developed towards a certifiable agricultural standard and a (possibly multi-level) label (Federal Government).
- **Developing and introducing a climate label** (Federal Government).
- **Rethinking technological developments with regard to their sustainability assessment and approval processes** (EU, Federal Government, federal states). New technologies, e.g. in the areas of robotics, sensor technology and genome editing, can open up new prospects for sustainable food security and mitigation of adverse environmental effects arising from farming

systems. Plant protection agents, used selectively and in a targeted manner, can reduce food losses and contribute towards enhanced sustainability in farming systems. Policy-makers should ensure that the potential of technological solutions for greater sustainability in production is not wasted. Otherwise, there would be an undesired risk of displacing production to regions or countries with lower environmental and climate stewardship standards. The social debate on technological developments in the agricultural and food system should be intensified.

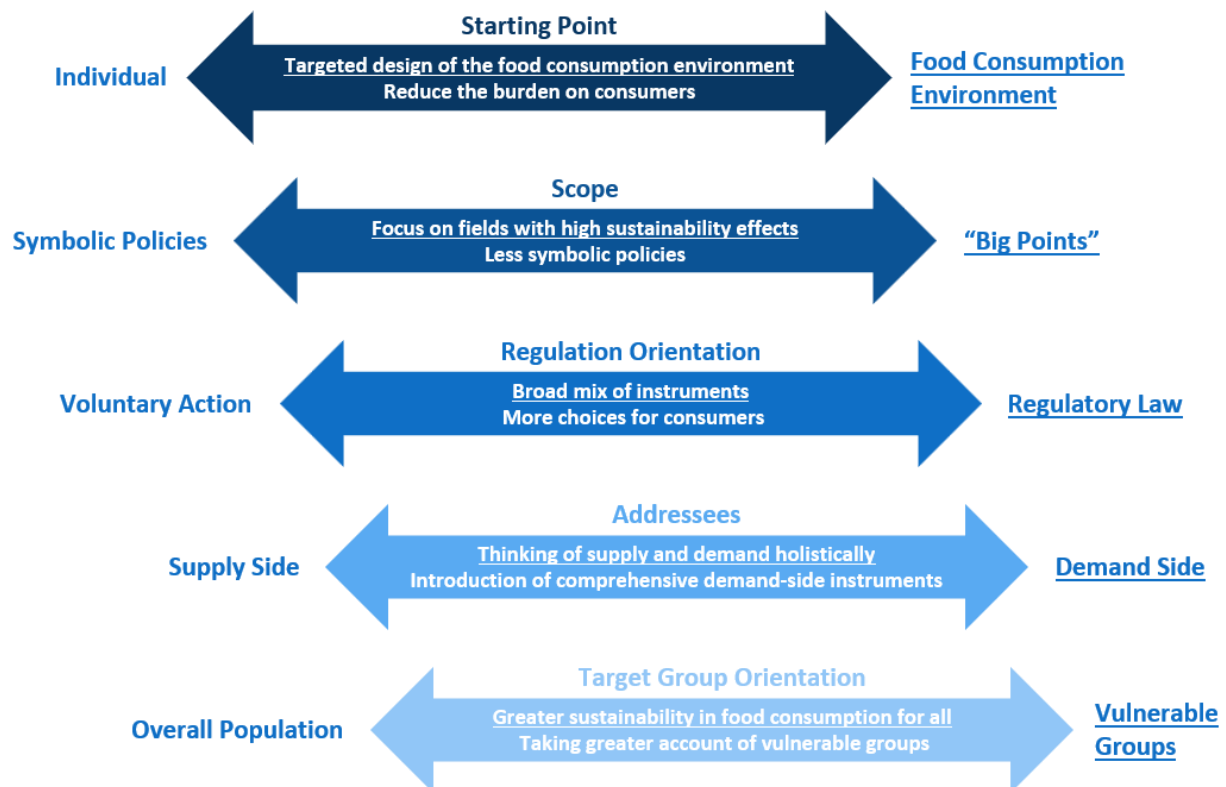
Recommendation: Strengthen and advance the policy field of “promoting sustainability in food consumption” – “Establishing an integrated food policy”



The policy field of “promoting sustainability in food consumption” is still at the beginning of its conceptual development and is heavily influenced by vested interests. In order to be able to act in this field, the WBAE recommends a comprehensive reorientation and strengthening of food policies that integrate the following four dimensions of sustainability: health, social aspects, environment and animal welfare.

An integrated policy for greater sustainability in food consumption requires a conceptual realignment of food policies along five decision areas (Fig. 5, cf. Section 9.10 in the original report):

- **Starting point:** The government should be given greater responsibility to shape and improve the food environment in a targeted manner so that the burden on consumers is reduced and consumers are given more, and more sustainable, options.
- **Scope:** A concentration on the main areas of action is necessary in order to increase the scope of food policies.
- **Regulatory targeting:** A broad and coordinated mix of instruments should be implemented; in particular, regulatory law and economic incentives should be strengthened and information made more reliable in order to attune the food environment to our human perception, decision-making possibilities and behavioural patterns.
- **Addressees:** Comprehensive demand-side policy instruments should be introduced to better link demand-side 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 greater consideration.

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

Source: WBAE illustration; cf. Section 8.1 in the original report.

The WBAE recommends (cf. Section 9.10 in the original report):

- **Reinforcing and institutionally advancing the policy area of “Promoting sustainability in food consumption”**, in particular by: (1) dedicating a higher budget to food policies - appropriate to the challenges (Federal Government); (2) developing consistent goals and performance indicators for the policy area of “Promoting sustainability in food consumption” (Federal Government); (3) promoting the networking and collaboration of the ministries in charge of the various aspects of food policy (Federal Government); and (4) reinforcing food policy within the BMEL and strengthening it vis-à-vis agricultural interests (BMEL).
- **Employing 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. The Federal Government should adopt a learning approach i.e. with a focus on evidence-based design and evaluation of implementation and the effects achieved (cf. the “WIE” programme (Section 8.2.4)) (Federal Government, federal states).
- **Improving 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 research more quickly (Federal Government, federal

states); and (3) establishing a system of regular reporting on “Promoting sustainability in food consumption”.

- **Creating a “digital ecosystem for promoting sustainability in food consumption”** (Federal Government) by: (1) developing and advancing apps and digital applications into a “digital ecosystem” for greater sustainability in food consumption, which makes applications and data in the field of food consumption available for the entire behavioural process and integrates them in a readily comprehensible manner; and (2) creating a valid, integrated open-access database (“Federal Sustainability Key”) (cf. Section 9.6.7 in the original report).
- **Focus the health insurance funds for prevention measures more on prevention in the area of food consumption** and do so in an objective and evidence-based manner (Federal Government, SHI).
- **Provide voluntary measures with clear transparency requirements and clearly defined goals** (Federal Government)

V Financing a policy for a more sustainable nutrition

The nine key policy recommendations listed above and their proposed specification have different effects on public budgets. These are presented below in terms of their magnitude for the most important measures (cf. Section 9.11 in the original report).

- Abolition of the VAT concession on animal products (approx. 4.3 - 5.0 billion euro per year), and the introduction of an excise tax on sugar-sweetened beverages (approx. 1.0 - 1.9 billion euro per year) would generate additional governmental revenue totalling 5 - 7 billion euro per year.
- The recommended reduction of the value added tax on fruit and vegetables would lead overall to a shortfall in revenue of approx. 0.5 billion euro per year.
- Compensating the 40% lowest-income households with 50 euro per capita and year would result in additional governmental expenditure of approx. 1.6 billion euro per year.
- In respect of the government-funded school and preschool meals, it can be assumed that there would be additional governmental expenditure totalling approx. 5.5 billion euro per year.
- Around 2 billion euro per year additional governmental expenditure is proposed for the conversion to more animal-friendly livestock husbandry.
- In total, the Federal Government, federal states and municipalities would thus incur reduced revenue and additional expenditure of approx. 9.6 billion euro per year. On balance, this would result in a financing gap of approx. 2.7 - 4.3 billion euro per year, which would have to be covered by additional tax revenue or reduced expenditure in other policy areas and would require a redistribution of taxes between the Federal Government, federal states and municipalities.

- Other expenditure for the public budgets, which has not been estimated, would result from the other measures proposed, e.g. the accompanying research programme on expanding school and preschool catering, the implementation of the DGE quality standards, the investments in the public drinking water supply, the expansion of monitoring, the conducting of 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, this preventative and sustainability expenditure would be offset by considerable potential for savings. Government expenditure for school and preschool catering, for example, would substitute expenditure by parents. In the long term, most of the proposed measures offer great potential for reducing health care and environmental costs.
- A change in food consumption styles, in particular by reducing the consumption of animal products, is likely to save consumers money. On the other hand, it would require the agricultural sector – just as it would with higher levels of animal welfare – to make great adjustments in changing over to business strategies focused on value added. This process would have to be flanked 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 and environment, enhance climate stewardship, mitigate food poverty, ensure compliance with minimum social standards and enhance animal welfare. Fair food environments protect and benefit all of us. Implementation of the recommended measures requires considerable additional governmental expenditure. However, in relation to the current high costs of our present food consumption for society and individuals, and the expected high (follow-up) costs in the future, this additional expenditure represents a worthwhile investment in our society as a whole. Postponing the necessary reorientation would exacerbate both the problems to be addressed and the need for adjustment.

The analysis presented in this expertise shows:

A comprehensive transformation of the food system is meaningful, feasible and should begin without delay.

Publications of the Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection³ (since 2012)

Designing an effective agri-environment-climate policy as part of the post-2020 EU Common Agricultural Policy, May 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, January 2012.

Information about the WBAE

The Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection (WBAE) is an interdisciplinary committee that advises the BMEL on policy development in these areas. The Advisory Board operates independently and on a voluntary basis, and produces reports and opinions on topics of its choosing. The Advisory Board's tasks include reviewing the objectives and principles of agricultural and food policy, analysing and evaluating social requirements and developments in the agricultural and food system, and making proposals for the development of agricultural and food policy.

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³ Up to 2015: Scientific Advisory Board on Agricultural Policy (WBA). The Board publishes its reports mostly in German but individual reports, executive summaries and synthesis reports are also available in English (https://www.bmel.de/EN/Ministry/Scientific-Advisory-Boards/_Texte/AgriculturalPolicyPublications.html).