Sustainable food consumption: when evidence-based policy making meets policy-minded research—Introduction to the special issue

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Unsustainability of Current Global Food Consumption

Food is a major issue in the politics of sustainable consumption and production (SCP) because of its impact on the environment, the economy, social cohesion, and individual and public health.¹ Some of the most serious environmental problems high on policy agendas worldwide are related to food production and consumption, including climate change, water pollution and scarcity, soil degradation, eutrophication of water bodies, and loss of habitats and biodiversity.² Population growth and rising economic prosperity are expected to increase demand for energy, food, and water, whereas in many parts of the world they are already forced to compete for inadequate resources. Growing requirements around the so-called energy-food-water nexus might thus compromise the sustainable use of natural resources and could lead to social and geopolitical tensions.

We are witnessing today the disturbing situation of about 800 million people worldwide suffering hunger and underconsumption of food and lacking access to clean drinking water. At the same time, more than a billion people are overweight and 300 to 500 million of them obese, with the trend increasing in most regions. Consequently, due primarily to shifts in diet toward more sugar, animal protein, and trans fats, diet- and lifestyle-related health problems, such as cardiovascular diseases and diabetes, are hitting young age groups and significantly increasing health costs. Given demographic changes and the growing global population, these problems will likely worsen in the near future.

Sustainable Food Consumption as a Policy Area

Policy action for sustainable food consumption is driven primarily by growing scientific understanding of the above-mentioned dilemmas. Over the last twenty years, an increasing number of policies, programs, and initiatives by international organizations and governments at all levels (including a number at the regional and local/community level) have been implemented. Yet it is somehow surprising that, while the sustainability impacts of the food sector are widely accepted, efforts to design and implement integrated sustainable food production and consumption policies have been largely absent. This lack of attention to more systemic issues may be one reason why food consumption patterns show barely any shift toward sustainability.

Another reason for the reluctance of policy makers to take more decisive action to facilitate sustainable food consumption might be the fuzzy and ill-defined nature of the challenge. To start, there is no commonly agreed upon definition of sustainable food consumption. The UK Sustainable Development Commission (2009) has to date proposed the most encompassing formulation:

[S]ustainable food and drink is safe, healthy, and nutritious for consumers in shops, restaurants, schools, hospitals, and so forth; can meet the needs of the less well off worldwide; provides a viable livelihood for farmers, processors, and retailers, whose employees enjoy a safe and hygienic working environment whether nationally or abroad; respects biophysical and environmental limits in its production and processing while re-

¹ Food is one of the three consumption areas, together with housing and mobility, recognized as having the most significant social and environmental impacts (see, e.g., Foster et al. 2006; Tukker et al. 2009; EEA, 2012).
² For example, food consumption and production is responsible for about one fifth of greenhouse-gas emissions, as well as the bulk of water use worldwide.
inducing energy consumption and improving the wider environment; respects the highest standards of animal health and welfare compatible with the production of affordable food for all societal sectors; and supports rural economies and the diversity of rural culture, in particular by emphasizing local products that keep food miles to a minimum.

This ambitious and cross-cutting framework requires intensive policy integration and cooperation. In a number of European Union (EU) member countries, this agenda has not yet become fully institutionalized and thus the initiatives carried out by governments tend to be ad hoc instead of systematic or “structural,” as well as fragmented across various ministries (primarily ministries of the environment, food and agriculture, land use, consumer protection and public health, and regional or social affairs) and tied to various other policy frames (such as health policy) rather than explicitly to an integrated sustainable food-consumption strategy.

Although numerous policy instruments have been trialed (often without an integrative approach), their common feature is a specific orientation toward the consumer. This approach can be considered a relatively new form of governing that entails active self-governing by responsible citizen-consumers and is supported by specific kinds of scientific and statistical knowledge. Asking individuals to “work on themselves and their conduct and transform themselves with the help of experts, training and services” (Dean, 2007) means that, for ethical purposes, the “subject of the state” is being transformed into a “responsible subject.”

A recent sectoral analysis of policy tools for sustainable food consumption (BIO Intelligence Service, 2012) shows that most available interventions are behavioral and informational. They aim for changes in awareness and attitudes of consumers through provision of information (e.g., product labeling, information campaigns tailored to specific audiences, nutrition and obesity education, “food literacy”), in household competences and skills (e.g., food competence and home economics training programs), or in behavior by making “right” choices easier (choice editing) and by shaping identities and lifestyles (e.g., toward regional identities and lifestyles of health and sustainability—LOHAS). Researchers emphasize that in terms of the latter, sustainable food styles must fit into people’s everyday lifestyles (i.e., must be “feasible,” available, affordable, and accessible) and should allow for sociocultural diversity (Eberle et al. 2006). Other categories of policy instruments can be considered at a more conceptual or experimental stage, such as market intervention through public procurement of sustainable food, other market-based instruments (elimination of harmful subsidies, organic production subsidies, and differentiated consumption taxes based on product environmental performance), as well as regulatory (“command and control”) instruments (e.g., bans on unhealthy food, prohibitions on quantity-based marketing strategies). Policy makers also seek synergies with instruments that are aimed at producers and caterers such as certification, standardization, and inspection schemes associated with product labeling, various voluntary and self-commitment instruments, and cooperation and networking with food-system actors. At the same time, practices of monitoring and data collection (gathering of consumption statistics, measurement of environmental impacts of various foods, establishment of databases or statistical indicators) are carried out to reach a common understanding of issues, to enable construction of the link between consumers and global environmental and social problems, and to enable design of the mentioned policy interventions.

Science-Policy Gap in Sustainable Consumption and the CORPUS Project

The complexities related to the contemporary system of food production and consumption are immensely challenging for sustainability policy making. One response to this situation has been the emergence of “evidence-based policy making” that aims to improve quality and impact through more effective use of scientific expertise. Accurate knowledge about system dynamics, strategic levers, and unintentional consequences is needed to design and implement effective policies. Indeed, we contend that increasing scientific evidence and political consensus are proving to be important drivers for the institutionalization of sustainable food consumption as a policy area. However, evidence-based policy making is not easy to put into practice. A particular problem with respect to food seems to be conflicting knowledge claims. In fact, some observers contend that conflicts among food experts have been described as “endemic” (Smith & Phillips, 2000; cf. Levidow et al. 2005). Furthermore, numerous structural factors hinder successful knowledge translation between science and policy (e.g., Choi et al. 2005; EC, 2008; Ward et al. 2009a; 2009b).

3 Command and control instruments typically serve to respond to acute threats to life and health of citizens such as food safety in relation to genetically modified organisms (GMOs), the mad-cow scare, or dioxin and E. coli poisonings, but have also recently been considered for food groups where the threats to life and health are long term and related to lifestyles.
While policy makers need to seek solutions to particular issues (solutions that fit into problem-centered “policy narratives”), researchers strive for scientific excellence in ways that are not necessarily measured by real-world impact. As a consequence, policy makers are required to engage with a range of stakeholders, while researchers can often confine themselves to interaction with their scientific peers. Moreover, policy makers face rapidly evolving challenges that often require prompt responses. Researchers, by contrast, are usually not exposed to decision-making processes and operate in an environment that does not require results with an immediate impact on society or policy making. Finally, policy makers use scientific evidence to inform their decision making, either ex ante, in defining policy, or ex post, in evaluating policy choices. This information must be accessible and presented so that it can contribute to practical solutions to problems. To meet this requirement, researchers need to translate their findings into formats and formulations that are useful to policy makers.

Against the background of these practical barriers to evidence-based policy making, the EU-funded CORPUS project developed a knowledge-brokerage system designed to improve the science-policy interface in SCP. Addressing three priority areas of consumption—food, mobility, and housing—the system comprised online and offline elements supporting knowledge exchange and built up practice communities comprising both policy makers and researchers. The backbone of the project was an Internet-based platform that, after three years of operation, serves as a repository of almost 600 knowledge items (e.g., scientific publications, policy documents, event reports) and encompasses approximately 900 registered users from science, policy, and civil society. In addition, we convened nine so-called “Policy Meets Research” workshops that employed a broad range of activating moderation techniques—from poster walks to participatory scenario building—and thus provided space for intense dialogue and cross-community networking. The CORPUS approach brought to fruition the notions of a knowledge-system framework and a transactional framework that have been conceptually developed in the academic literature on knowledge brokerage (e.g., Oldham & McLean, 1997; Pregernig, 2004).

The CORPUS experience revealed that policy makers find research on sustainable consumption to be too wide-ranging and complex to process, and they call for “better” (i.e., more usable) rather than more knowledge. More effective processing and presentation of existing evidence thus seems to be crucial, as is the provision of guidance in numerous opportunities for research partnerships. Furthermore, scientific knowledge is only one among the various types of knowledge policy makers ask for—they also find knowledge about good policy practice very useful. Transnational dialogue within and across the science and policy communities helps research findings and policy experience travel widely and is therefore another important ingredient to evidence-based policy making for sustainable consumption. The articles presented here contribute to this dialogue.

Articles in this Issue

This special issue comprises articles that focus on different aspects of (un)sustainable food consumption and production as outlined above. In an introductory article, Lucia Reisch, Ulrike Eberle, & Sylvia Lorek present an extensive literature review and describe the major issues in the current system of food production and consumption. Suggesting the need for an integrative approach, they lay out the interlinkages among the ecological, social, ethical, health-related, and economic dimensions. For each impact domain, they provide an overview of the main policy and research issues, key theoretical approaches, major empirical studies, and available data, as well as the main challenges on both the production and the consumption side. Reisch and her colleagues also identify priority areas and corresponding policy options for SCP strategies for the food sector and conclude with recommendations for the diverse actors in the system.

Over the past few decades, meat consumption—a “hot spot” of both environmentally harmful consumption practices and public health—has grown markedly. In “Does Global Meat Consumption Follow an Environmental Kuznets Curve?” Jennifer Rivers Cole & Suzanne McCoskey assemble data on meat consumption, per capita income, and other socioeconomic variables for 150 countries to test the hypothesis that per capita meat consumption follows a Kuznets-style inverted U-curve. This proposition contends that as per capita income increases in a country, consumers at first purchase more meat but ultimately modify their eating practices. The results signal that although there is evidence of a Kuznets relationship in the data, the income level that needs to be reached for meat consumption to taper off is sufficiently high that most countries will not begin to see a decline in the foreseeable future. For a cross-section of high-income countries, Rivers Cole & McCoskey demonstrate that a reversal in meat consumption does not occur until per capita income reaches US$49,848. In the full-panel data sample, combining high- and low-income countries, they find an inflection point

4 See http://www.scp-knowledge.eu.
for meat consumption at US$36,375, still quite high for any prospective reduction in impact. The authors conclude that effectively decelerating the global demand for meat may require aggressive and potentially controversial policy interventions.

Policy interest in the meat consumption “hot spot” has also led to a call for more reliable and coherent meat-consumption data to be able to build a more scientifically reliable foundation for national sustainability strategies and dietary recommendations. Elinor Hallström & Pål Börjesson take up this challenge and assess the consistency and trustworthiness of current meat-consumption statistics. They describe how these statistics are produced and discuss their strengths and limitations. The article in particular identifies several uncertainties and discrepancies in available meat statistics and explores some of the ramifications of this variation. The authors outline how meat-consumption data are assembled and presented at the national (Swedish), regional (Eurostat), and international (FAOSTAT) levels and highlight how inconsistencies can create complications when data are used to formulate environmental and health policy. Among the many challenges are inclusion or exclusion of bone weight, food losses and waste, weight losses during cooking, and nonmeat ingredients in mixed-meat products and prepared meals. The article illustrates that familiarity with procedures used to collect and assemble the data is essential for correct understanding, interpretation, and use of meat-consumption statistics for policy making. The authors conclude with recommendations for improving the design, presentation, and use of these data.

Food consumption is influenced by a variety of sociodemographic features and values, attitudes, and lifestyles, and has both environmental and health consequences. Zsófia Vetőné Mózner & Mária Csutora discuss the novel idea of designing “lifestyle-specific food policies based on nutritional requirements and ecological footprints.” This study is innovative because it incorporates two often distinct discourses: environmental sustainability and health impacts of food intake. The authors make clear that the constitution of a healthy diet may be in tension with requirements for reducing ecological footprints, and combining these two aspects and advancing meaningful recommendations about diets is a major challenge. The authors highlight differences in the ecological footprint necessary to meet physiological requirements and actual food consumption by activity level for different social groups. The study is empirically based on a combination of healthy diet requirements formulated by the World Health Organization (WHO) and a representative survey of 1,013 Hungarian adults, using a bottom-up approach for calculating carbon and ecological footprints. As expected, students and women with babies have greater-than-average food-related ecological footprints due to their higher nutritional needs. At the same time, the eating practices of the elderly give rise to lower footprints. While such detailed empirical analyses are quite time- and cost-intensive—and hence beyond the usual scope of policy making—they promise to be useful in developing targeted environmental and health policies.

As mentioned above, the ever-increasing consumption of meat is one of the biggest sustainability challenges in the food domain, not least because research suggests that individual habits and social norms shape meat consumption in ways that are more extensive than other food categories. Nevertheless, Hans Dagevos & Jantine Voordouw find on the basis of two successive representative surveys that the meat-consumption patterns of Dutch consumers have become considerably more flexible in recent years. They develop a nuanced typology that goes beyond the conventional distinction between “meat-eaters” and “meat-avoiders” and identify a substantial and growing number of “meat-reducers” that eschew meat on a daily basis. In the Netherlands, the share of so-called “flexitarians” rose from 69.5% in 2009 to 77.1% in 2011. Based on these empirical insights, and the observation that policy makers are reluctant to endorse strong interventions to reduce meat consumption, the authors outline an incremental approach to policy making. It starts with encouraging greater self-commitment on the part of politicians through interventions by nongovernmental organizations (NGOs), and moves on to call for development of more sustainable systems of food provisioning that involve both consumers and innovative businesses.

In “How Big is Your Foodprint?” Corné van Dooren & Tine Bosschaert describe development of an ecological “foodprint” tool that promises to quickly scan the environmental impact of one’s food consumption and can be used to raise public awareness of a healthy and sustainable diet. The tool provides custom-made and practical advice for consumers to reduce their foodprint (the ecological footprint of food consumption). The tool demonstrates to consumers that the most critical contribution to their foodprint is associated with animal-protein sources (dairy, meat, and fish), and nonlocal and out-of-season products, drinks, food waste, and packaging represent the next most critical contributions. The article also describes the strategy, design, and results of a social media campaign that resulted in 90,000 consumers using the foodprint tool during its first four months. The authors conclude that this tool promises to be an effective and efficient instrument for raising awareness about overconsumption and setting an example—if not establishing a social
norm—for what sustainable and healthy food consumption can be.

To explore possible trajectories and future impacts of food consumption and to reduce uncertainty during policy-design processes aimed at shaping these trajectories, scenario analysis has become a useful method. Anna Kirveennummi, Johanna Mäkelä, & Riikka Saarimaa suggest that scenarios are instructive as context orientation and for an approximation of desirable futures. They describe a three-year participatory exercise for formulating scenarios of prospective food practices in Finland in 2030. The aim of the initiative was “not to predict but to analyze the intertwining relationships between the many trends and aspects of food consumption.” The result of the process was four scenarios—cornucopian, ecological, food scarcity, and technology-driven—which the authors discuss together with crucial questions for current policy practice that emerge out of the scenarios. They identify a “joint area,” a space where current action can acknowledge and deal with the sustainability challenges of all four scenarios simultaneously. Nevertheless, reaching consensus becomes a particular obstacle of this “joint area,” in which interests, values, and knowledge of all kinds of stakeholders meet.

The question of how to steer the contemporary system of food production and consumption in a more sustainable direction also marks the starting point for the article by Ullrich Lorenz & Sylvia Veenhoff. They argue that strategic foresight is an appropriate tool to provide guidance for policy makers who face a complex and dynamic system and a variety of policy options. They report the findings of an extensive German scenario-building process that searched for sustainable solutions to food consumption and production in different future contexts. An exploratory scenario technique (“scenario management”) was employed to investigate how the external environment for food consumption might develop in the future (“context scenario”) and what solutions for more sustainable food are at hand (“strategic food scenarios”). In a final evaluation stage, the strategic food scenarios were reviewed against the context scenarios to assess their feasibility under different future conditions. The participatory scenario-building process, which comprised a series of workshops involving different stakeholders, revealed that a solution such as “think globally, act locally” works in both a neoliberal growth scenario and an economic recession scenario. Their approach sketches a framework that successfully integrates policy instruments with environmental, economic, and social contexts.

The final article in this special issue, by Michal Sedlacko, Umberto Pisano, Gerald Berger, & Katrin Lepuschitz, reflects on the CORPUS project and the science-policy interface it created. It documents the development of a joint-research agenda involving researchers and policy makers and analyzes the factors that increased engagement between the two communities. The authors suggest that fit between the organizational contexts of the participants and the process for developing a research agenda is critical for influencing future cooperation and use of the research-agenda document. They characterize organizational contexts through variables such as regularity and character of policy maker-researcher exchange, and develop a typology of bureaucratic, managerial, and communicative “praxis/discourse formations of knowledge.” Comparing the agenda development with these contexts, they formulate a comprehensive analysis that helps to explain the somewhat limited impact of the research agenda one year after its development. These factors include the multinational and research-driven nature of the process, limited time for interaction, and absence of links to particular national policy issues and processes.

This special issue reflects some of the most pressing themes and challenges of policy-relevant research on sustainable food consumption. Meat consumption remains a dominant theme. There are also important questions about how research and policy making can be better aligned in terms of topical focus as well as timing, and how in particular research can help policy makers cope with uncertainty and provide sound statistical data. We hope that this special issue—and the discussion that it generates—will contribute to further research and useful policy initiatives.

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