U.S.-German Forum Future Agriculture

Recommendations on Climate for the National Level and Transatlantic Cooperation

Policy Recommendations

CONTENT

Improving Climate Resilience of Arable Agriculture

Farmers are on the frontlines of climate change. The sector faces significant challenges due to more frequent extreme weather events, including changing temperature and precipitation patterns. These changes have led to shifts in growing seasons and crop suitability, water scarcity, crop yield reduction, new pests and diseases, and degradation of organic matter. To ensure food security and the viability of the agricultural sector, efforts to improve the climate resilience of arable agriculture are critical. This undertaking goes beyond mere adaptation to encompass prevention, mitigation, coping strategies, adaptive measures, and the capacity to manage risk and rebound from shocks.

In recent years, the effects of climate change in Germany and the United States have been more noticeable, with significant consequences for the agricultural sector. Rising temperatures and more intense drought can lead to occurrence of new pests and diseases, which contribute to plant stress and reduced productivity. Similarly, there are changes in the plant biomass and soil cover leading to changes in soil management that can increase soil erosion and carbon loss.

Farmers and the agricultural industry have been adopting various strategies to confront these climate-related challenges. These include utilizing technologies to better assess weather patterns and predict extreme events and employing regenerative practices, such as the diversification of the crop rotation in annual systems, shifting production to new crops, employing regenerative practices, and implementing new water management strategies. These efforts can be a time intensive, risky, and costly endeavor, but will only become more critical in the years ahead. Innovative policies that foster greater resilience of the agricultural sector as a whole, while ensuring the profitability of farms, are needed to confront the present and future challenges brought about by climate change.

National Level Recommendations

1. Develop infrastructure, processing, and marketing for crops and livestock suitable for a changing climate.

Action Points:

▶ Establish more local processing and support the market entry of new buyers and traders through public support (e.g., financial support, knowledge transfer, market analysis, simplified bureaucracy, and initiation of producer cooperatives).

▶ Foster research on secondary uses of crops in bio-based industries and develop solutions to bring them to market more effectively in order to expand markets and advance the green transition.

2. Improve our understanding of climate change on growth, yield, quality, and management constraints, as well as the overall environment to facilitate adaptation.

Action Points:

▶ Increase funding for independent applied research, including for scalable plot and on-farm research, and foster the scaling up of results.

▶ Improve existing and establish new mechanisms for knowledge sharing in order to better disseminate research results, for example through farmer-to-farmer exchanges, open-source platforms, and public support for new innovative methods of communication.

3. Encourage practices which enhance and retain soil organic matter and biological activity to optimize productivity, enhance carbon sequestration, and increase system resilience.

Action Points:

▶ Encourage soil-specific, locally adapted, climate appropriate soil conservation practices (e.g., cover cropping and reduced tillage), while balancing the need for responsible integrated pest management.

▶ Work towards the development of standards to measure soil carbon and quantify sequestration and encourage the involvement of regional and national stakeholders in this process.

Transatlantic Level Recommendations

1. Create farmer-researcher networks in the United States and Germany to foster the exchange of knowledge by pursuing basic and applied research at experimental stations with further research and testing on farms, and jointly work towards the adaptation of viable research outcomes to continually improve agricultural practices.

2. Integrate incentives into national funding programs which encourage transatlantic projects on research and development for climate resilience of arable agriculture and the establishment of exchange programs between research facilities and farms.

Harnessing the Power of Agriculture to Mitigate Climate Change and Protect Natural Resources

Agriculture has an important role to play in mitigating the climate crisis and protecting natural resources. By implementing climate smart production practices, farm operators can use more effective climate adaption practices. With the goal of long-term sustainability, forward-thinking farmers have begun to implement farming methods which improve soil health, reduce emissions, preserve water quantity and quality, and foster biodiversity. Practices often referred to as “regenerative” or “climate smart”, such as cover cropping, no- or strip-tillage, crop rotation, and livestock integration, can enhance production and simultaneously support environmental health. These practices must be region-specific and must be used to reduce soil erosion, retain soil moisture, and enhance soil’s ability to capture carbon, and break the pest and disease cycle. Many approaches to agriculture management are highly developed and continue to improve, such as precision farming, which utilizes digital technologies to more precisely apply fertilizers and chemical inputs like herbicides and pesticides, reduce input costs, and prevent environmental pollution. Certain other practices, such as agroforestry, the use of alley crops, composting, and regenerative farming practices in general, are increasingly being explored and further developed.

Agricultural producers are dedicated to ensuring the long-term health of soils and the protection of natural resources – both vital for farming. Nevertheless, the successful implementation of a comprehensive transition to more sustainable practices will hinge on the ability of both the public and private sectors to make this transition tenable and advantageous for producers and society in general.

National Level Recommendations

1. Expand renewable energy from agricultural production to help reduce the carbon footprint, foster closed nutrient cycles, and thus enhance local and regional independence from external input suppliers.

Action Points:

▶ Standardize life cycle analysis (i.e., the energy input/output balance and carbon footprint) for bioenergy.

▶ Incentivize the adoption of practices with a lower carbon footprint in the production of bioenergy.

2. While working towards the goal of sustainable farming and energy production, better balance the three goals of environmental protection, profitability, and food security.

Action Points:

▶ Better monitor how different policies impact the three aforementioned goals, and identify solutions for trade-offs.

▶ For better policy design and program implementation, deeply engage stakeholders from all sectors of society in a transdisciplinary way with the goal of more effectively identifying problems and finding effective solutions.

3. Foster the establishment of functioning mechanisms for adequate compensation for natural resource conservation.

Action Points:

▶ Foster the development of private and public funding programs, which establish business models that better support the goals of conservation, create income streams for farmers and landowners, and reflect the true value of nature conservation.

▶ Expand grant programs for first movers of innovative and experimental conservation efforts, with the goal of more effectively bringing practices to market.

Transatlantic Level Recommendations

1. Encourage the transatlantic exchange of best cases and evaluation of agriculture policies, which aim at mitigating climate change, while recognizing the importance of maintaining agricultural diversity, protecting natural resources, optimizing farm profitability, and avoiding negative unintended consequences of policies.

2. Promote information exchange between the United States and Germany on effective policies that minimize the loss of valuable and fertile agricultural land, which must be protected for the production of food and energy crops.

Balancing the Social, Economic, and Environmental Sustainability of Agriculture and Rural Regions

The future of agriculture will affect the development of rural regions and, consequently, social and political cohesion in our societies. Agriculture is a major economic driver for rural areas and an important component of social life. Its contribution to employment and overall quality of life intricately shapes the future of these regions given that the repercussions of structural shifts in agriculture are most acutely experienced there. Many rural areas on both sides of the Atlantic are confronting job loss, resulting in population loss, as well as limited investment in public infrastructure. Existing opportunities for development are often insufficiently exploited. Economic and social inequalities and the feeling of being left behind can easily become a breeding ground for deepened polarization.

According to data from the United States Department of Agriculture, 46 million U.S. residents lived in rural areas in 2020, making up 14 percent of the U.S. population. In Germany, almost 57 percent, or roughly 47 million people, live in rural regions, according to 2018 data from the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR). These populations are often confronted with inadequate internet connectivity, deficient transportation networks, as well as shortcomings in healthcare, childcare, and services for the elderly. Considering the interdependence between rural communities and natural resources, these populations are also particularly vulnerable to the effects of climate change. Enhancing the economic resilience of these areas will be essential in the face of this existential threat.

The facets of sustainable agriculture—economic, social, and environmental—are intricately intertwined, yet they can also come into competition. Striking the right balance between these dimensions in policy-making is critical for sustaining the vitality of rural areas in the face of multifaceted challenges.

National Level Recommendations

1. Invest in physical and social infrastructure that considers local needs and values.

Action Points:

▶ Implement high-speed, reliable broadband to develop the potential of rural areas and allow for optimal implementation of smart farming.

▶ Maintain and update existing transportation infrastructure and develop new smart transportation concepts to address current problems in supply chains and to reduce the carbon footprint of transportation.

2. Improve and enhance the labor force in the agricultural sector and foster rewarding and accessible career paths.

Action Points:

▶ Foster the development of innovative projects that encourage rewarding, full-time, full-year employment in agriculture for employees and their families.

▶ Improve the quality of life for rural populations, farmers, and farm employees by establishing a better social infrastructure, such as health care, childcare, education, and cultural enrichment.

3. Increase understanding of the role of agriculture to strengthen connections between urban and rural populations.

Action Points:

▶ Integrate agriculture into the curriculum of both rural and urban primary and secondary schools to teach about the importance of agriculture, highlighting modern advances and science-based processes.

▶ Create more awareness for the importance of agriculture as the source of nutrition and improve access to affordable and nutritious food by strengthening urban-rural partnerships.

Transatlantic Level Recommendations

1. Establish standardized definitions or reciprocal recognition of equivalent domestic terminology for testing methods and scoring metrics for carbon sequestration, future technologies, and social and environmental standards to reduce existing and prevent future trade barriers.

2. Implement exchange programs between Germany and the United States to provide students, especially from rural areas, diverse and practical learning opportunities in the areas of agriculture, environmental sciences, and rural physical and social infrastructure.

ABOUT THE PROJECT

The U.S.-German Forum Future Agriculture, led by the Aspen Institute Germany together with implementing partner, the University of Illinois Urbana-Champaign, aims to promote transatlantic dialogue on common challenges for the field of agriculture and rural regions and pave the way for a more sustainable agricultural future. Germany and the United States are central to shaping a more resilient agricultural future. Both countries face similar challenges, but a better mutual understanding of different agricultural practices and standards is needed to provide joint global leadership that contributes to shaping the future of agriculture. By bringing together U.S. and German farmers and other key agricultural stakeholders from research and business, the forum addresses precisely these challenges and invests in transatlantic exchange in rural communities.

In its first year, the project has convened 16 participants active in the field of arable farming from eastern Germany and the Corn Belt in the U.S. Midwest. Between February and August 2023, the first cohort met for ten virtual workshops and one four-day meeting in Champaign-Urbana, Illinois. In addition to addressing the social, economic, and political relevance of agriculture for rural areas, this year's cohort dealt primarily with the core topic of climate change and agriculture. During the program, participants had the opportunity to learn about agricultural practices and policies in each other's countries, conduct site visits to see best practices and innovative solutions, engage with policymakers, and explore opportunities for transatlantic collaboration. In addition to a general exchange of practical experience, the project also seeks to influence the broader policy conversation at both the national and transatlantic levels. As such, the group developed policy recommendations related to climate change and agriculture in arable farming for the national level and transatlantic cooperation. The ensuing recommendations are a consensus of the group and reflect the diverse personal experiences, expertise, ideas, and opinions of each participant.

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About the Aspen Institute Germany

The Aspen Institute Germany is an independent, non-partisan organization that promotes values-based leadership, constructive dialogue between conflicting parties, and transatlantic cooperation to strengthen a free and open society. Founded in 1974 in Berlin, the Institute has been bringing together decision-makers and experts from politics, business, academia, media, culture, and civil society for 49 years to address the challenges of our time.

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