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Editorial: Planning for agriculture and sustainable food systems

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Editorial on the Research Topic

Planning for agriculture and sustainable food systems

The future of agriculture, food security and sustainable food systems are fundamentally connected to how we treat the land base that supports agricultural production. Urban expansion, land degradation, access to water, threats to biodiversity, and climate change are having major impacts that threaten our ability to produce food and support the planet's growing population.

Community planning provides a framework to address many of these issues. Municipalities make decisions related to land use and senior levels of government establish policy and legislation with a goal of addressing the public interest. An agricultural lens can be brought to land use planning with a goal of protecting farmland, soil, water, air and natural heritage resources. Furthermore, we need to protect farmers and their livelihoods while simultaneously building a more sustainable form of agriculture.

In this Research Topic several authors highlight the importance of the land use planning process as a means to protect agricultural land from urban expansion. Population growth and related urban expansion require thoughtful planning strategies to intensify urban settlements and to direct growth away from the best farmlands. [Dring et al.](#) review strategies and approaches to agricultural planning in British Columbia, Canada. In British Columbia they have established an Agricultural Land Reserve where the best farmlands are protected for continued agricultural production. In this broader context municipalities embark upon agricultural planning consistent with “mandated obligations (conservation of farmland) and voluntary obligations (economic development, advocacy, public awareness).” They conclude by noting that “municipal governance systems could transition to improve agricultural outcomes, such as farmland protection, farmer economic viability, and integration with broader food systems.” [Caldwell et al.](#) review the farmland preservation policy framework within Ontario, Canada. They do this by tracking planning decisions over nearly 20 years, providing insight into the relative success of local and provincial policy. Their findings bring specific focus to the role of upper levels of government in protecting agricultural land.

[Akimowicz et al.](#) take this a step further by noting the importance of periurban agriculture. Within Canada and France they found that it contributed to the resilience of metropolitan areas by providing local food and other multifunctional agricultural amenities. Within their article, they “tackle the beliefs that underlie farmers’ decision-making” to identify the planning opportunities for supporting farm intergenerational transfers. In both countries the results highlight “the positive role of the institutional context” when farmers’ beliefs and the beliefs shaping their institutional environment, including their family, their professional community, and the surrounding stakeholders, such as agricultural organizations, public agencies, and residents of the area, are well-aligned and result in a shared vision of the future.

Two examples from Ghana also demonstrate the competition for agricultural lands. [Yiridomoh](#) finds that illegal gold mining is lucrative and on the rise but with consequences for sustainable agriculture and resilient food systems. His work reveals that “agricultural practices such as terracing, crop rotation, use of domestic waste/manure, and irrigation of crops were affected adversely by illegal mining activities”. He concludes by noting important roles for the Ghanaian government. In another example, [Kuusaana et al.](#) finds that urban agricultural zones are being compromised as many “urban land parcels are unsustainably converted to urban infrastructure” and residential uses. Using a local case study, the researchers found that, over 25 years, “agricultural lands decreased in terms of size and contiguity at the household level,” compelling farmers to pursue compound farms or fenced urban gardens. They conclude that urbanization “will exacerbate the challenges of food production if relevant policy interventions are unavailable” to preserve urban agricultural space to sustain food supply.

[Berge et al.](#) investigated the effects of government agricultural planning on economic, environmental and social sustainability as implemented by individual and co-operative producers within the agricultural sector in Togo. For cooperative producers, “it was anticipated that a greater emphasis on social and environmental sustainability would be created through cohesive social action.” This study found that the emphasis on economic development included in government planning built cohesion within cooperative membership focused on economic indicators rather than environmental or social development.

Local or traditional agri-food systems also contribute to sustainable food production and food security. [Sarapura–Escobar and Hoddy](#) offer perspectives on planning as a tool “to maintain the genetic pool of crops and landraces” in response to “disease, disasters, and climate change” in the Andes. Soil conservation, biodiversity, water management, and communal or cultural practices, are all shaped by peasants’ intersecting identities. The authors emphasize the importance of local planning in Andean communities for managing resources in accord with Andean indigenous worldviews. Knowledge and Andean ways of adapting and innovating reflect innate capacities to maintain the land and their genetic resources. Of course, agriculture varies globally, and [Mamun et al.](#) demonstrate the importance of coastal areas and the connection to food production. Their study in south-west Bangladesh demonstrates the importance of livelihoods and wellbeing and the contributions that aquatic farming systems in SW Bangladesh can make to support household subsistence and local nutritional security.

[Drescher and Warriner](#) observe that intensive agriculture contributes to the loss of biodiversity and ecosystem services. Their study in Ontario, Canada, demonstrates that farm and non-farm attitudes toward land are embodied in the concept of environmental stewardship. They found that “participation in conservation programs was more pronounced for non-farming landowners.” Their results point to opportunities “for reducing financial and knowledge barriers to pro-environmental land management behaviors.”

The articles comprising this Research Topic help us to broaden our perception of the issues and the opportunities that exist to address these issues. While there is an overriding focus on “planning,” the articles take us on a journey exploring not only land use planning, but also environmental stewardship, economic planning, cooperatives, urban infrastructure and agricultural development in coastal areas. Running through these ideas are a number of core concepts. They include the role of governance and community, the importance of agriculture and opportunities for planning, sustainability and stewardship. Collectively, they call for a coordinated strategy at the local, regional and national levels of government.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Conflict of interest

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