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COMMITTEE ON AGRICULTURE

Twenty-sixth Session

Rome, 1 - 5 October 2018

Agroecology: from advocacy to action

Executive Summary

The Twenty-fifth Session of the Committee on Agriculture (COAG) discussed achieving sustainable rural development through agricultural innovation (COAG/2016/6) and acknowledged the Outcomes of the International Symposium and Regional Meetings on Agroecology for Food Security and Nutrition (COAG/2016/INF/4). FAO's Regional Conferences held in 2018 provided specific guidance to support agroecology as one of the approaches to promote sustainable agriculture and food systems, particularly for smallholders and family farmers, in response to regional challenges also considering the Regional Initiatives. It includes *inter alia* climate change elements of the 2030 Agenda, protection and preservation of biodiversity, and conservation and recovery of degraded forests and soils.

This document provides an overview of FAO's work on agroecology to strengthen sustainable food and agricultural systems and achieve Zero Hunger, focusing on the outcomes of regional multistakeholder seminars and the 2nd International Symposium on Agroecology that launched a Scaling up Agroecology Initiative and the 10 elements guiding FAO's vision on agroecology.

Suggested action by the Committee

The Committee is invited to:

(a) welcome the Scaling up Agroecology Initiative and request FAO to develop an action plan with partners, following country demands.

(b) endorse the 10 elements of agroecology as a guide to the transition to sustainable agriculture and food systems;

(c) urge FAO to continue applying agroecology as one of the approaches to implement the five principles of sustainable food and agriculture in support to the SDGs and to assist countries and regions to engage more effectively in the transition processes towards sustainable agriculture and food systems by:

i) strengthening normative, science- and evidence-based work on agroecology, developing metrics, tools and protocols to evaluate the contribution of agroecology to the transformation of sustainable agriculture and food systems;

ii) catalysing scientific evidence and co-creation of knowledge and facilitating its dissemination;

iii) providing policy and technical support to countries, upon their demands, including capacity development of smallholders and family farmers.

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I. Agroecology and the FAO process

A. Towards more sustainable agriculture and food systems

1. Agriculture must meet the challenges of hunger and malnutrition and reach Zero Hunger against a backdrop of population growth, increased pressure on and losses of natural resources, especially soils, biodiversity and water, and the risks associated with climate change, poverty and urbanisation. While past efforts focused on boosting agriculture to produce more food, today's challenge is to tackle the root causes of hunger and malnutrition through transformative changes on the way we produce, distribute and consume nutritious food that contributes to healthy diets.

2. To foster inclusive growth, enhance income and eradicate extreme poverty, a transformation centred on rural population, as critical agents of change, is key. Improving the livelihoods and resilience of smallholders and family farmers, including foresters, fishers and pastoralists, with particular focus on women, indigenous peoples and youth, can foster the implementation of the SDGs in many countries.

3. External input-intensive agricultural production systems have increased productivity but incur many side effects, such as environmental degradation and negative social impacts, a burden shared by today's society and future generations. Policies promoting these agriculture and food production systems, including current research priorities, need to be reviewed and improved to create a level playing field for ecosystem-based approaches such as agroecology and other sustainable agricultural approaches that take into consideration the externalities of agriculture and food systems.

4. There is still a strong need to provide an enabling policy environment and economic support to promote sustainable agriculture and food systems through innovative and integrative approaches, such as agroecology.

5. Since the 1920s, scientists and researchers have used the term agroecology to refer to the application of ecological principles to agriculture. Agroecology has been defined as "the application of ecological science to the study, design and management of sustainable agriculture" (Altieri, 1995) and has since been broadened to cover "the ecology of the food system" (Francis et al., 2003), reflecting the systemic approach of agroecology. In keeping with this broader interpretation, participants in the FAO regional seminars on agroecology consistently underlined the social dimension of agroecology and the increasing role played by civil society in promoting this approach, illustrated by describing agroecology as a "science, a social movement and a practice" (Wezel et al., 2009). The High Level Panel of Experts on Food Security and Nutrition (HLPE) of the Committee on World Food Security specified for the first time that food security and nutrition are the ultimate aims of agroecology (FAO, 2016): "From a scientific and technical perspective, agroecology applies ecological concepts and principles to food and farming systems, focusing on the interactions between microorganisms, plants, animals, humans and the environment, to foster sustainable agriculture development in order to ensure food security and nutrition for all, now and in the future. Today's more transformative visions of agroecology integrate transdisciplinary knowledge, farmers' practices and social movements while recognizing their mutual interdependence."

B. The FAO process

6. The Twenty-fifth Session of the Committee on Agriculture (COAG) discussed achieving sustainable rural development through agricultural innovation (COAG/2016/6) and called on FAO to "continue to strengthen its normative and science and evidence-based work with particular attention to agroecology, biotechnology, sustainable production, climate change, biodiversity, mechanization,

statistics, food safety, nutrition, youth and gender."1 This recommendation was endorsed by the Fortieth Session of the FAO Conference2 (Para. 43 h; C 2017/REP).

7. FAO's Regional Conferences held in 2018 provided specific guidance to support and harness agroecology in response to regional challenges, including within the Regional Initiatives, as detailed below.

a) The Thirty-fourth Session of the FAO Regional Conference of Asia and the Pacific (APRC) "noted the importance of promoting sustainable agricultural production through agro-ecological methods increasing biodiversity, and supporting Globally Important Agricultural Heritage Systems (GIAHS) as well as biotechnologies" in order to implement the climate change elements of the 2030 Agenda (Para. 19 v; APRC/18/REP)[3]. The APRC also highlighted agroecology as one of the relevant strategies -among others- to bring about sustainable intensification of agriculture in order to feed the growing population (Para. 16 iv; APRC/18/REP).

b) The Thirty-fifth Session of the FAO Regional Conference for Latin America and the Caribbean (LARC) recommended FAO to "support knowledge exchange for agricultural innovation, including agroecology, biotechnologies and other technologies, to enhance sustainable rural development." (Para 18 vi; LARC/18/REP)[4]. The LARC also recommended FAO to "Support the development of strategies and policies for the conservation and recovery of degraded forests and soils, by encouraging countries to invest in national initiatives on agro-forestry, agroecological and organic production systems as well as biotechnologies that protect and preserve biodiversity, especially for family farmers, and support experience exchange initiatives at global and regional levels" (Para. 20 vii; LARC/18/REP).

c) The Thirty-first Session of the FAO Conference for Europe and Central Asia (ERC):
- "highlighted the potential of agroecological approaches, in particular for smallholders and family farmers, to accelerate the transition to sustainable agriculture and food systems and called on governments to promote such agroecological and other sustainable agricultural approaches as befits their national contexts" (Para. 18 c; ERC/18/REP)[5];
- "emphasized the need for research and quality data on agroecological and other sustainable agricultural approaches" (Para. 18 d; ERC/18/REP);
- "requested that FAO ii) incorporate agroecological approaches and diversification into the three Regional Initiatives; and iii) further develop its work on agroecology, for example in the context of the United Nations Decade of Family Farming (2019–2028) and the Scaling up Agroecology Initiative, discussing this in FAO's technical and governing bodies" (Para. 18 k; ERC/18/REP);
- "reiterated the importance of combining digital technological innovations with other innovations, including agroecology as well as enhanced capacities of all actors, in order to promote a development change in food and agriculture systems" (Para. 20 b; ERC/18/REP).

d) The Thirty-fourth Session of the FAO Regional Conference for the Near East (NERC):
- "recognized the contribution of agroecology to support adaptation to climate change in semi-arid areas for sustainable agricultural development, food security and nutrition" (Para. 17 a; NERC/18/REP[6]). In this regard, the NERC "called upon governments to identify and provide incentives to agricultural producers particularly small-scale farmers to foster transitions to more sustainable agriculture and food systems, based on agro-ecological practices" (Para. 17 b; NERC/18/REP);

[1] http://www.fao.org/3/a-mr949e.pdf
[2] http://www.fao.org/3/a-mu208e.pdf
[3] http://www.fao.org/3/mw412en/mw412en.pdf
[4] http://www.fao.org/fileadmin/user_upload/bodies/LARC_35/MW677_REP/MW677_LARC_18_REP_en.pdf
[5] http://www.fao.org/fileadmin/user_upload/bodies/ERC_31/MW908_ERC18_REP/MW908_ERC_18_REP_EN.pdf
[6] http://www.fao.org/fileadmin/user_upload/bodies/NERC_34/MW880_REP/MW880_NERC_18_REP_en.pdf

- "invited stakeholders to establish national and regional platforms for exchange of knowledge and experiences on agroecology" (Para. 17 c; NERC/18/REP)
- "encouraged Members to promote the adoption and scaling up of agroecology, which requires mobilization of resources and cooperation between countries that share common agroecological concerns" (Para. 17 d; NERC/18/REP).
- requested FAO to "integrate agroecology into the existing Regional Initiatives and strengthen its work on agroecology in the context of the United Nations (UN) Decade of Family Farming (2019–2028), the UN Decade of Action on Nutrition (2016–2025) and the Sustainable Development Goals (SDGs)" (Para. 18 a; NERC/18/REP);
- "support countries to build on the successes achieved under the South-South and Triangular Cooperation experience for enhancing cooperation and experience sharing in the area of agroecology" (Para. 18 b; NERC/18/REP);
-"support countries to better work together with the other active partner organizations and international and regional research organizations for promoting and upscaling agroecology" (Para. 18 c; NERC/18/REP)
- "build countries capacities in the areas of relevance to agroecology for climate adaptation for food security and nutrition, including support to rehabilitation of degraded lands, monitoring and assessment of land degradation and taking a proactive role in rangelands management and the conservation of biodiversity" (Para. 18 d; NERC/18/REP).

e) The Fifth Session of the FAO Informal Regional Conference for North America (INARC) identified the support to agroecological approaches as a complementary tool with other agricultural innovations and urged FAO to work more closely with Member States on agroecology going forward.

8. FAO organized the Second International Symposium on Agroecology on Scaling up Agroecology to achieve the SDGs. The Symposium built on the first FAO International Symposium on Agroecology for Food Security and Nutrition, held in Rome in 2014, and the seven subsequent regional multi-stakeholder seminars that took place from 2015 to 2017[7]. The seminars captured a wide range of experiences, practices, initiatives and policies from all stakeholders and regions. Agroecology was recognised as an innovative approach, among others, to support countries in achieving SDGs and respond to Climate Change challenges.

9. A recent publication analysing FAO's work plan shows that agroecology accounts for eight percent of FAO's results planned for 2018–2019 that support transition to sustainable agriculture and food systems. The analysis also shows that country requests for support by FAO contain the potential to further scale up agroecology integrating it with other approaches of sustainability to accelerate transition towards sustainable food and agriculture systems ultimately supporting countries in achieving the SDGs[8].

II. Outcomes of the Second International Symposium on Agroecology and the Scaling up Initiative

10. The Second International Symposium held at FAO's headquarters from 3 to 5 April 2018, brought together more than 760 participants (including representatives from 72 governments, 350 non-state actors' organisations, and representatives of 6 UN organisations) who analysed experiences, evidence and public policies to respond to the challenges faced by current agriculture and food systems.9

11. Building on the outcomes of a series of regional multi-stakeholder seminars on agroecology organized by FAO, from 2015 to 2017, in Latin America and the Caribbean, sub-Saharan Africa, Asia

[7] http://www.fao.org/3/I9035EN/i9035en.pdf
[8] http://www.fao.org/3/I9007EN/i9007en.pdf
[9] http://www.fao.org/about/meetings/second-international-agroecology-symposium/en/

and the Pacific, China, Europe and Central Asia, and the Near East and North Africa, recommendations were put together in a chair's summary10with a view to harness agroecology in the support of a transition process towards sustainable food and agricultural systems: i) strengthen the central role of family farmers and their organisations in safeguarding, utilising and accessing natural resources; ii) foster experience and knowledge sharing, collaborative research and innovations; iii) promote markets for agroecological-based products for health, nutrition and sustainability; iv) review institutional, policy, legal and financial frameworks to promote agroecological transitions for sustainable food systems; v) take agroecology to scale through integrated and participatory territorial processes.

12. Acknowledging that innovation for agroecology is more than just the invention of new technologies or products, it entails processes where new, socially and environmentally sustainable ideas, technologies, products and practices emerge through stakeholder interaction. Participants of the Symposium emphasized that agroecological innovations should be people-centred, meet smallholders and family farmers' and consumers' needs, be co-created, combine research and traditional knowledge, be locally adaptable, be based on open source data and technology, and enhance capacity for collective action and responsible investments.

13. In providing guidance and advise to support countries in transforming their agriculture and food systems, to mainstream sustainable agriculture, and to achieve multiple SDGs, a set of 10 elements circumscribing the salient features of agroecology were presented. These elements (see Annex) emanated from FAO's global and regional dialogues and were developed based on scientific literature.

14. A Scaling up Agroecology Initiative (the Initiative)11 was launched during the Symposium in cooperation with major UN partners, and participants representing national and international institutions, and constituencies. The Initiative is proposed as a way forward and as a strategic approach to promote and achieve the 2030 Agenda, in particular SDG 2.

15. The Initiative aims to accompany and support agroecology transition processes through policy and technical capacity building at global, regional and national level, and by sharing experiences between countries. This guidance will address the levels of agroecological transitions, including: agroecological practices, agroecosystem re-design, diverse agroecological food systems, and strengthening the enabling environment12. The Initiative will be guided by the key recommendations identified during the 2nd Symposium and focus its efforts on three areas of work: (i) knowledge and innovation for sustainable agriculture and food systems; (ii) policy processes for transformation of agriculture and food systems; and (iii) building connections for transformative change.

16. The Initiative represents an opportunity for UN partners and related bodies (FAO, IFAD, WFP, UN Environment, UNDP, and CBD) to work in a coordinated way to scale up agroecology through policies, science, investment, technical support and awareness, according to their mandate and expertise, and extending the knowledge to all actors.

17. The United Nations Decade of Action on Nutrition 2016–2025 and United Nations Decade of Family Farming 2019–2028 present an opportunity for FAO and its partners to raise awareness in the international community about the importance of family farming and agroecology for achieving sustainable development and improved health and nutrition everywhere, leaving no one behind.

[10] This Summary represents an attempt by the Chair to capture the richness of the contributions presented during the Symposium by different stakeholders and experts, to be more fully registered in the full report of the Symposium to be prepared by FAO, and does not necessarily reflect the opinions and views of each individual participant or of each of the Member States which participated in the Symposium.

[11] http://www.fao.org/3/I9049EN/i9049en.pdf

[12] Gliessman, S. 2016. Transforming food systems with agroecology. Agroecology and Sustainable Food Systems, 40(3): 187–189.

III. Way forward

Suggested action by the Committee

The Committee is invited to:

(a) welcome the Scaling up Agroecology Initiative and request FAO to develop an action plan with partners, following country demands.

(b) endorse the 10 elements of agroecology, as a guide to the transition to sustainable agriculture and food systems;

(c) urge FAO to continue applying agroecology as one of the approaches to implement the five principles of sustainable food and agriculture, in support to the SDGs and to assist countries and regions to engage more effectively in the transition processes towards sustainable agriculture and food systems by:

i) strengthening normative, science- and evidence-based work on agroecology: developing metrics, tools and protocols to evaluate the contribution of agroecology in the transformation to sustainable agriculture and food systems;

ii) catalysing scientific evidence and co-creation of knowledge and facilitating its dissemination;

iii) providing policy and technical support to countries, upon their demands, including capacity development of smallholders and family farmers.

ANNEX

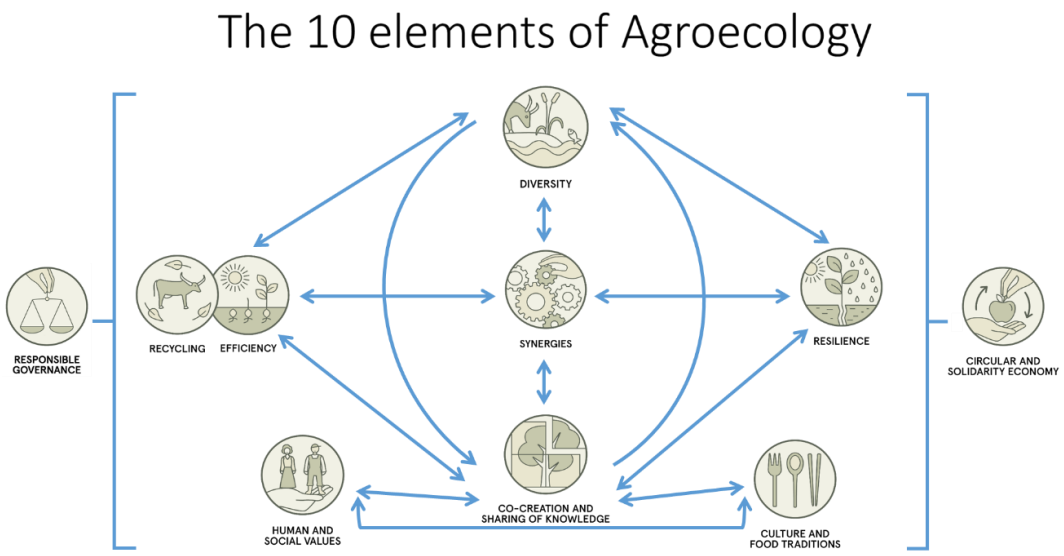
THE 10 ELEMENTS OF AGROECOLOGY, GUIDING THE TRANSITION TO SUSTAINABLE FOOD AND AGRICULTURAL SYSTEMS

Agroecology considers the interactions among key environmental, social and economic characteristics, processes and an enabling environment that are typical of diversified agricultural systems . It also recognizes the great potential of collective action processes to foster knowledge sharing, and deepened understanding, that favour behavioural changes in food systems that are required for sustainable agriculture to become a reality.

In guiding countries to transform their food and agricultural systems, to mainstream sustainable agriculture on a large scale, and to achieve Zero Hunger and multiple other SDGs, the following 10 elements emanated from the FAO regional seminars on agroecology. The 10 elements characterizing agroecology were developed through a synthesis process. They are based on the seminal scientific literature on agroecology – in particular, Altieri's (1995) five principles of agroecology[13] and Gliessman's (2015) five levels of agroecological transitions[14]. This scientific foundation was complemented by discussions held in workshop settings during FAO's multi-stakeholder regional meetings on agroecology from 2015 to 2017, incorporating also aspects put forward by international and FAO experts.

The 10 elements are further described in an FAO publication made available for the 2nd International Symposium on Agroecology: "The 10 elements of agroecology, guiding the transition to sustainable food and agricultural systems"[15].

As an analytical tool, the 10 elements can help countries to operationalise agroecology into concrete actions on the ground. By identifying important properties of agroecological systems and approaches, as well as key considerations in developing an enabling environment for agroecology, the 10 elements serve as a guide for policymakers, practitioners and stakeholders in planning, managing and evaluating agroecological transitions.



[13] Altieri, M.A. 1995. Agroecology: The Science of Sustainable Agriculture. CRC Press.
[14] Gliessman, S.R. 2015. Agroecology: The Ecology of Sustainable Food Systems. 3rd Edition. Boca Raton, FL, USA, CRC Press, Taylor & Francis Group.

[15] http://www.fao.org/3/i9037en/I9037EN.pdf

The 10 elements of agroecology are interlinked and interdependent.

DIVERSITY. Diversification is key to agroecological transitions to ensure food security and nutrition while conserving, protecting and enhancing natural resources. Agroecological systems are highly diverse. From a biological perspective, agroecological systems optimize the diversity of species and genetic resources in different ways. Increasing biodiversity contributes to a range of production, socio-economic, nutrition and environmental benefits. By planning and managing diversity, agroecological approaches enhance the provisioning of ecosystem services, including pollination and soil health, upon which agricultural production depends. Diversification can increase productivity and resource-use efficiency by optimizing biomass and water harvesting. Agroecological diversification also strengthens ecological and socio-economic resilience.

CO-CREATION AND SHARING OF KNOWLEDGE. Agricultural innovations respond better to local challenges when they are co-created through participatory processes. Agroecology does not offer fixed prescriptions – rather, practices are tailored to fit the environmental, social, economic and cultural context. The co-creation and sharing of knowledge plays a central role in the process of developing and implementing agroecological innovations to address challenges across food systems including adaptation to climate change. Through the co-creation process, agroecology blends traditional,local knowledge including producers' and traders' practical knowledge, and global scientific knowledge. Producer's knowledge of agricultural biodiversity and management experience for specific contexts as well as their knowledge related to markets and institutions are essential elements in this process. Education – both formal and non-formal – plays a key role in sharing agroecological innovations resulting from co-creation processes.

SYNERGIES. Building synergies enhances key functions across food systems, supporting production and multiple ecosystem services. Agroecology pays careful attention to the design of diversified and synergistic systems, including the combination of annual,perennial and cover crops, livestock, aquatic animals and trees. It pays particular attention in the careful use of soil, water and other components of farms and agricultural landscapes to enhance resilience in the context of an increasingly changing climate.

EFFICIENCY. Innovative agroecological practices move from input-based systems to knowledge-based systems of food production aiming at further increasing productivity while using less external (including non-renewable) resources. Increased resource-use efficiency is an emergent property of agroecological systems that carefully manage diversity to create synergies between different system components. Agroecological systems improve the use of natural resources, especially those that are abundant and free, such as solar radiation, atmospheric carbon and nitrogen. By enhancing biological processes and recycling biomass, nutrients and water, producers are able to use available resources more efficiently, reducing costs and negative environmental impacts.

RECYCLING. More recycling supports an agricultural production with less waste and emissions and reduces economic and environmental costs. By imitating natural ecosystems, agroecological practices support biological processes that drive the recycling of nutrients, biomass and water within production systems, thereby increasing resource use efficiency.Recycling can take place at farm-scale and within landscapes, through diversification and building of synergies between different components and activities.

RESILIENCE. Enhanced resilience of people, communities and ecosystems is key to sustainable agriculture and food systems. Diversified agroecological systems are more resilient, i.e. they have a greater capacity to recover from disturbances including extreme weather events such as drought, floods or hurricanes, and to resist pest and disease attack. By maintaining a functional balance, agroecological systems enhance resiliance to pest and disease attacks. Agroecological practices work with the biological complexity of agricultural systems promoting a diverse community of interacting organisms to increase buffer capacities when facing pest outbreaks. On a larger scale, diversified agricultural landscapes have a greater potential to contribute to pest and disease control functions

building on ecosystem services (e.g. natural enemies for biological control). Agroecological approaches can also enhance socio-economic resilience. Through diversification and integration, producers can better manage risks and thus reduce their vulnerability should a single crop, livestock species or other commodity fail. By reducing dependence on external inputs, agroecology can also reduce producers' vulnerability to economic risk.

HUMAN AND SOCIAL VALUES. Protecting and improving rural livelihoods is essential for sustainable food and agricultural systems. Agroecology emphasizes human and social valuesand inclusion of all contributing to the improved livelihoods dimension of the SDGs. Agroecology seeks to address gender inequalities by creating opportunities for women. By building autonomy and adaptive capacities to manage their agro-ecosystems, agroecological approaches empower people and communities to overcome poverty, hunger and malnutrition. As a bottom-up, grassroots paradigm for sustainable rural development, agroecology empowers people to become their own agents of change.

CULTURE AND FOOD TRADITIONS. By supporting healthy anddiversified diets, agroecology contributes to food security and nutrition while maintaining healthy ecosystems. Agriculture and food are core components of the human heritage. Culture and food traditions play an important role in society and in shaping human behaviour. Cultural identity and sense of place are often closely tied to landscapes and food systems. As people and ecosystems evolve together, cultural practices and indigenous and traditional knowledge offer a wealth of experience that can inspire innovative solutions.

RESPONSIBLE GOVERNANCE. Sustainable food and agriculture requires responsible and effective governance mechanisms at different scales - –local,national and global. Agroecology calls for responsible and effective governance to support the transition to sustainable food and agricultural systems. Transparent, accountable and inclusive governance mechanisms are necessary to create an enabling environment that supports producers to transform their systems considering also agroecological concepts and practices. Land and natural resources governance is a prime example. The majority of the world's rural poor and vulnerable populations heavily rely on terrestrial and aquatic biodiversity and ecosystem services for their livelihoods, yet lack secure access to these resources.

CIRCULAR AND SOLIDARITY ECONOMY. Circular and solidarity economies that reconnect producers and consumers provide innovative solutions for living within our planetary boundaries while ensuring the social foundation for inclusive and sustainable development. Agroecological approaches help promote fair solutions based on local needs, resources and capacities, creating more equitable and sustainable markets. These include innovative markets, alongside more traditional territorial markets, where most smallholders sell their products. Social and institutional innovations play a key role in encouraging production and consumption based on agroecological approaches.