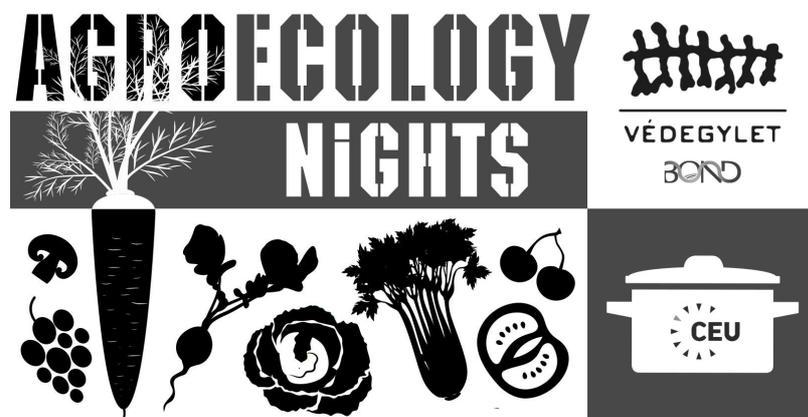


AGROECOLOGY NIGHTS N° 1 - The Big Picture



How familiar are you with alternative agricultural systems, sustainable diets, and food sovereignty? As responsible citizens and concerned consumers, we must be informed how our food is produced, by whom, and what environmental impact it has.

Join us in the Agroecology Nights event-series and get inspired by the discussions with guest speakers active in alternative agricultural systems as farmers, consumers' associations, researchers, academics, and civil society organizations.

Agroecology nights is co-organized by Védegylet and the Department of Environmental Sciences and Policy at CEU and will feature 4 events from November to March.

Join us to the first event on November 15th at 17.30 - 20.00 Nádor utca 9. Gellner Room.

Bird's-eye view on Agroecology - Farming within ecosystems. During this event, we will discuss how agroecology is an alternative food production system that enhances ecological processes within the farm as the antithesis to conventional farming where the natural resources, as well as human resources, are exploited and degraded.

Information about the organizations of the first guest-speakers can be found here:

Dóra Dexler - *ÖMKI, Hungarian Organic Agriculture Research Institute*
<https://biokutatas.hu/about-us/>

Róbert Szűcs-Winkler - *Felelős Gasztrohős , Responsible Gastro-Heroes*
<https://gasztrohos.hu>

Logan Strenchock - *Zsámboki Biokert, Organic Farm of Zsámbok*
<http://zsambokibiokert.unas.hu/en/>

Definition and dimensions of Agroecology

Agroecology is a scientific research approach, a collection of practices and principles and a socio-political movement. The science of agroecology entails the connections in the agro-ecosystem, in a wider sense finding correlations between the environmental, social and economic components of the whole food system; not looking for general-but context and situation specific solutions. Agroecology started out as a reaction to the problems caused by conventional industrial agriculture, it is scientifically based in agronomy, ecology, sociology and economics. Agricultural and food production practices are aimed at long term sustainability and solutions rooted in natural processes; but include community/rural development and alternative marketing practices as well. As a socio-political movement, agroecology fights for diversity in agriculture, social justice, food sovereignty and the improvement of rural livelihoods.

Agroecology uses ecological concepts and principles for optimizing cooperation between plants, animals, humans and the environment to create a sustainable and just food system. By improving synergies between components, agroecology is able to strengthen food production and food safety, while regenerating ecosystem services and biodiversity.

Practice

Agroecological farming practices are aimed at reducing reliance on external inputs while working with ecological processes for crop and animal protection and nutrition. Agroecological practices also contribute to protecting and regenerating the living soil and surrounding ecosystems. Practices include organic agriculture, integrated pest management, closing resource cycles, use of crop rotations, cover crops, biological pest management. Practices of agroecology also extend to the whole food - system and rural development, including reducing food miles and waste, strengthening local markets, supporting local food cultures and rural livelihoods. In general, practices in agroecology are locally adapted to environmental, social and cultural circumstances.

Science

As a scientific discipline, agroecology involves the holistic study of agro-ecosystems, including human and environmental elements. The science of agroecology expands in scale to the whole food system, emphasizing the inter-relatedness of all of its elements. Methods in research are multi-scale and transdisciplinary with a system approach, including knowledge and advances from various disciplines, as well as local and traditional knowledge. Being aimed at finding locally adapted solutions, agroecological research approaches are action-oriented and participation based, including various stakeholders in the research process.

Movement

Agroecology is rooted in grassroot movements formed by small-scale producers and consumers that fight for food and seed sovereignty, food and social justice, access to land and other resources, and to prioritize local communities over large corporations in the whole food system. It is an inclusive movement which wants to decrease the gap between the poorest and most marginalized people and the rest of society. It celebrates cultural diversity and promotes the right to healthy and nutritious food for everyone. Women are in the center of the movement which is reflected in its core values. All generations are greatly respected for their knowledge and skills. The international peasants' movement Via Campesina, which is also the biggest social movement in the World, endorsed agroecology to achieve Food Sovereignty.

Contradictions in the industrial food system

“The global food system is a major driver of climate change, land-use change and biodiversity loss, depletion of freshwater resources, and pollution of aquatic and terrestrial ecosystems through nitrogen and phosphorus run-off from fertilizer and manure application. It has contributed to the crossing of several of the proposed ‘planetary boundaries’ that attempt to define a safe operating space for humanity on a stable Earth system, in particular those concerning climate change, biosphere integrity, and biogeochemical flows related to nitrogen and phosphorous cycles. If socioeconomic changes towards Western consumption patterns continue, the environmental pressures of the food system are likely to intensify, and humanity might soon approach the planetary boundaries for global freshwater use, change in land use, and ocean acidification. Beyond those boundaries, ecosystems could be at risk of being destabilized and losing the regulation functions on which populations depend.”

(Springmann, Marco, et al. "Options for keeping the food system within environmental limits." *Nature* (2018): 1.)

Since the Green Revolution during the 20th century, agricultural outputs have doubled due to advances in plant breeding, technologies and the expansion of agricultural areas. The practices of industrial agriculture have become “conventional”, ruling the current paradigm of food production. Characterized by a heavy reliance on non-renewable resources, intensification, specification, monocultures on a continuously growing scale; while succeeding at increasing outputs and making food a global commodity, the industrial food system also causes major challenges for the environment and society.

Environmental problems include:

- Environmental degradation and soil loss
- Pollution through production, transport, packaging and waste
- Loss of biodiversity
- Loss of resilience and resistance of ecosystems

Social problems include:

- Concentration of power in the food system in the hands of agrifood companies; externalized social and environmental costs. Social injustice in the loss of access to land and resources of local communities
- Major challenges in access to food: Although enough food is produced on the planet to feed its current population, worldwide hunger is still a problem due to uneven distribution and major food waste
- At the same time, industrialized societies face diseases connected to inadequate nutrition due to the low quality of food, such as obesity, diabetes or cardiovascular diseases

Food security can be achieved, when the inhabitants of a certain region have economic and physical access to nutritionally adequate food, and this food is produced in a socially acceptable and environmentally sound way.

Food sovereignty refers to the right of communities to define and form their own food production systems. Tackling problems of inadequate quantities or quality of food therefore entails not only providing enough calories needs, culture and resource access of households also need to be taken into consideration.

Agroecology calls for a paradigm shift in how we approach food production in its environmental, social and economic context; ideally resulting in a state of food production where the needs of communities and the integrity of the ecosystem are well balanced. Agroecological practices can contribute to strengthening local knowledge, experience and creating networks of producers, consumers, scientists and activists.

FOOD SYSTEM	AGROECOLOGY BASED	CONVENTIONAL (INDUSTRIAL)
PRACTICES AND PRINCIPLES		
FARMING	Complex farming systems adapted to local environments, characterized by diversification, creating mixed-systems; relying on ecosystem services	Increasing levels of intensification, specialization, mono-cultures and mechanization
Soil	Supporting a living soil ; regenerating soil fertility	High levels of soil erosion and depletion
Nutrients	Based on ecological processes and local natural sources of nutrients- compost, manure => closed cycle	Based on chemical fertilizers ; input dependant => linear
Pest Management	Based on ecological processes and natural substances, mostly preventive, keeping in mind the health of the whole ecosystem	Based on chemical pesticides and herbicides, preventive and curative, often characterized by negative environmental and health effects
Resource Use	Relies on locally available, renewable resources	Relies on fossil fuel and industrial chemicals, depleting natural resources, dependency on external resources
Ecosystem Management	Farming as part of the ecosystem, supporting local ecological processes	Farming as an industrial activity, disrupting the ecological integrity of areas
ECONOMIC DIMENSIONS		
Ownership	Community based ownership	Centralized, privatized ownership of genetic resources and land
Retail and market	Circular economy, decreased number of actors	Linear economy, increased number of actors
Capital	self-sustainable on the long run	Capital intensive
Consumption	Localized and seasonal	Globalized
SOCIO-POLITICAL DIMENSIONS		
Access to resources	Control over resources are put in the hands of local communities; common goods	Control over resources is in the hands of very few beneficiaries
Governance	Decentralized, collective governance	Increased influence of financial actors
KNOWLEDGE MANAGEMENT		
Access to knowledge	Transversal transfer of knowledge and technology	Top-down transfer of knowledge and technology
Research and education methods	Holistic, Participatory, transdisciplinary, action-oriented aimed at providing socially and environmentally sound, locally adapted solutions	Reductionist, aimed at improving yields and income from specific crops or products

Agroecology in Hungary

Currently in Hungary there are good examples of agroecological approaches at different levels of the food system, especially in the field of organic farming. However, agroecology is not yet part of the public discussion, little Hungarian literature has been produced, the terms and definitions of agroecology have not yet been translated.

Stay tuned for the next events of Agroecology Nights coming soon!



VÉDEGYLET

Useful resources:

Center for Agroecology and Food Security (CAFS): Mainstreaming Agroecology: Implications for Global Food and Farming Systems, Coventry University, 2013
http://www.coventry.ac.uk/Global/05%20Research%20section%20assets/Research/CAFS/Publication,%20Journal%20Articles/MainstreamingAgroecology_WEB.pdf

International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD): Agriculture at a crossroads (Global Report), 2009

Altieri, M.A., Nicholls, C.I. and Montalba, R., 2017. Technological approaches to sustainable agriculture at a crossroads: an agroecological perspective. *Sustainability*, 9(3), p.349.

Altieri, M.A., 2002. Agroecology: the science of natural resource management for poor farmers in marginal environments. *Agriculture, ecosystems & environment*, 93(1-3), pp.1-24.

Gliessman, S., 2016. Transforming food systems with agroecology, *Agroecology and Sustainable Food Systems*, 40:3, 187-189, <http://dx.doi.org/10.1080/21683565.2015.1130765>

Reganold, J.P. and Wachter, J.M., 2016. Organic agriculture in the twenty-first century. *Nature plants*, 2(2), p.15221 www.agroecologia.net/wp-content/uploads/2016/02/Reganold-2016-Organic-farming-in-XXI-Nature-Plants.pdf

Sevilla Guzmán, Eduardo, and Graham Woodgate. "Agroecology: Foundations in agrarian social thought and sociological theory." *Agroecology and Sustainable Food Systems* 37.1 (2013): 32-44.

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Silici, L., 2014. Agroecology-what it is and what it has to offer. *Issue Paper 14629IIED*. London: *International Institute for Environment and Development*. https://www.researchgate.net/publication/264245203_Agroecology_What_it_is_and_what_it_has_to_offer

Tomich, T.P., Brodt, S., Ferris, H., Galt, R., Horwath, W.R., Kebreab, E., Leveau, J.H., Liptzin, D., Lubell, M., Merel, P. and Michelmore, R., 2011. Agroecology: a review from a global-change perspective. *Annual Review of Environment and Resources*, 36, pp.193-222.

Wezel, Alexander, and Jean-Claude Jauneau. "Agroecology-interpretations, approaches and their links to nature conservation, rural development and ecotourism." In *Integrating agriculture, conservation and ecotourism: Examples from the field*, pp. 1-25. Springer, Dordrecht, 2011.

Méndez, V. Ernesto, Christopher M. Bacon, and Roseann Cohen. "Agroecology as a transdisciplinary, participatory, and action-oriented approach." *Agroecology and Sustainable Food Systems* 37, no. 1 (2013): 3-18.

CIDSE- The principles of agroecology, 2018
<https://www.cidse.org/publications/just-food/food-and-climate/the-principles-of-agroecology.html>

FAO, Agroecology for food security and nutrition- Proceedings of the FAO International Symposium, Rome, Italy, 2014

FAO - Agroecology Knowledge Hub- Online platform, 2018, <http://www.fao.org/agroecology/en/>