

**LB0109: Agroecology and Sustainability of Production Systems, 2021-2022**

Recommended literature related to specific lecture (There could be few changes in lecture schedule and literature list before the course starts)

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| **Date** | **Lecture topic** | **Literature** |
| 2020-11-02 | Sustainability and challenges for agriculture | Gliessman 2015 (**chapters 22-23**), Rockström et al. 2009, Steffen et al. 2015 |
| 2020-11-03 | Agroecological principles and practices | Wezel 2017, Nicholls et al 2017. |
|  | Agroforestry | Wilson et al. 2016 |
| 2020-11-04 | Ecological mechanisms of ecosystem services | Bommarco et al. 2013, Isbell, 2017 |
|  | Ecosystem services to and from agricultural systems | Bommarco et al. 2013, Van Huylenbroeck et al. 2007 |
| 2020-11-05 | SAFA guidelines and sustainability assessment tools, including TAPE |  FAO 2013 (SAFA), FAO 2019 (TAPE) |
| 2020-11-08 | Beneficial biotic interactions and nutrient cycling | Gliessman 2015 (**chapters 3, 8, 9, 11**), Bedoussac et al 2015, Steffen et al. 2015 |
|  | Integrated weed management  | Buhler 2002, Gliessman 2015 (**chapter 11**) |
| 2020-11-09 | Multifunctionality on farmland | Gliessman 2015 (chapter 21)FAO 2013 (SAFA), FAO 2019 (TAPE) |
|  | Cropping systems and food diversification | Hufnagel et al. 2020 |
| 2020-11-11 | Agriculture’s climate impact and sustainability in a food system perspective  |  Poore and Nemecek 2018, Röös et al. 2016 |
|  | LCA and sustainability assessment of food production |  Schader et al. 2014, Pelzer et al. 2017 |
| 2020-11-15 | Animal welfare | FAO, 2001 |
| 2020-11-16 | Social aspects in livestock | Algers, 2011 |
| 2020-11-17 | Integrated pest management |  Hokannen and Menzler-Hokkanen 2020  |
| 2020-11-18 | Crop and livestock production | Algers, 2011, Gliessman 2015 (chapter 19) |
| 2020-11-19 | Soil, quality, fertility and health | Robinson et al. 2013 |
| 2020-11-22 | Markets and welfare | Eriksen 2010, Gliessman 2015 (**chapter 24**), Morse 2010 |
|  | Agricultural/rural development policies | European commission (CAP), Wästfelt 2018 (**chapter 9)** |
| 2020-11-23 | Urban and peri-urban agriculture | Benis and Ferrao 2018, Olsson 2018 (**chapter 14**) |
| 2020-11-24 | Global production and trade | <http://vimeo.com/8812686> |
|  | Transition to agroecology  | Geels and Schot, 2007, IPES-Food, 2016 |
| 2020-12-07 | Ethical issues in agriculture | FAO, 2001 |

## Course literature LB0109, Agroecology and Sustainability of Production Systems, 2021-2022

## Compulsory reading

## *Books/book chapters*

## FAO, 2013. *SAFA Guidelines, Sustainability Assessment of Food and Agriculture systems. Version3.0.* Rome: Food and Agriculture Organization of the United Nations. <http://www.fao.org/nr/sustainability/sustainability-assessments-safa/en/>

Gliessman, S.R., 2015. *Agroecology: the ecology of sustainable food systems.* 3rd ed. CRC Press. (Course textbook, 405 p)

Morse, S., 2010. *Sustainability. A biological perspective*. Cambridge: Cambridge University Press. **Chapter 5: Socio economic dimensions of sustainability**.

Olsson E.G.A., 2018. Routledge handbook of landscape and food. **Chapter 14: Peri-urban food production as means towards urban food security and increased urban resilience**. <https://doi.org/10.4324/9781315647692>

Wästfelt, A., 2018. Routledge handbook of landscape and food. **Chapter 9: Shifts in agriculture praxis: farm modernization and global integration.** [https://doi.org/10.4324/9781315647692](https://doi.org/10.4324/9781315647692%22%20%5Ct%20%22_blank)

## *Articles and reports*

## Algers, B., 2011. Animal welfare – recent developments in the field. *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources,* 6 (010), 1-10.

## Benis, K and Ferrao, P.2018. Commercial farming within the urban built environment- Taking stock of an evolving field in northern countries. *Global food security,y* 17:30-37

Bedoussac, L. et al., 2015. Ecological principles underlying the increase of productivity achieved by cereal-grain legume intercrops in organic farming. A review. *Agronomy for Sustainable Development*, 35, 911-935.

Bommarco, R., et al., 2013. Ecological intensification: harnessing ecosystem services for food security. *Trends in Ecology and Evolution*, 28, 230–238.

Buhler, D.D., 2002. Challenges and opportunities for integrated weed management. *Weed Science*, 50, 273-280.

Eriksen, H. T., 2010. Small places, large issues. London: Pluto Press. Chapter 12: Exchange and consumption, and chapter 13: Production, nature and technology (pages 184-219).

European Commission. The Common agricultural policy (CAP) at a glance. <https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en>

FAO., 2001. Ethical issues in food and agriculture. Rome: Food and Agriculture Organization of the United Nations.

FAO, 2019. Tool for agroecology performance evaluation (TAPE)-process of development and guidelines for application: Test version. <http://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1257355/>

Geels, F.W. and Schot, J., 2007. Typology of sociotechnical transition pathways. *Research Policy*, 36, 399-417

Hokannen, H.M.T. and Menzler-Hokkanen, I., 2020. Improving the efficacy of biological control by ecostacking. In Y.Gao et al. (eds), Integrative Biological Control, 3-16. <https://doi.org/10.1007/978-3-030-44838-7_1>

Hufnagel, J., et al. 2020. Diverse approaches to crop diversification in agricultural research. A review. *Agronomy for sustainable development* 40 (14)

IPES-Food., 2016. From uniformity to diversity: a paradigm shift from industrial agriculture to diversified agroecological systems. International Panel of Experts on Sustainable Food systems. (section 2 and 3b) <http://www.ipes-food.org/_img/upload/files/UniformityToDiversity_FULL.pdf>

## Isbell, F., 2017. Benefits of increasing plant diversity in sustainable agroecosystems. *Journal of Ecology*, 105, 871-879.

## Nicholls, CI et al., 2017. Agroecological Principles for the Conversion of Farming Systems. Agroecological Practices for Sustainable Agriculture - Principles, Applications, and Making the Transition. Ed. Alex Wezel https://www.worldscientific.com/doi/epdf/10.1142/9781786343062\_0001

## Pelzer, E. et al., 2017. Design, assessment and feasibility of legume-based cropping systems in three European regions *Crop & Pasture Science*, 68, 902-914.

## Poore, J. and Nemecek, T., 2018. Reducing food’s environmental impacts through producers and consumers. *Science*, 360, 987–992.

## Robinson, D.A. et al., 2013. Natural capital and ecosystem services, developing an appropriate soils framework as a basis for valuation. *Soil Biology & Biochemistry*, 57, 1023-1033.

Rockström, J. et al., 2009. Planetary boundaries: exploring the safe operating space for humanity. *Ecology and Society* 14(2):32

## Röös, E. et al., 2016. Limiting livestock production to pasture and by-products in a search for sustainable diets. *Food Policy*, 58, 1-13.

## Schader, C. et al., 2014. Scope and precision of sustainability assessment approaches to food systems. *Ecology and Society* 19(3):42-

Steffen et al., 2015. Planetary Boundaries: Guiding human development on a changing planet. *Science* 347 (issue 6223).

Wilson, H.M., et al., 2016. Agroforestry-The next step in sustainable and resilient agriculture. *Sustainability* 8, 754

van Huylenbroeck, G. et al., 2007. Multifunctionality of agriculture: a review of definitions, evidence and instruments *Living Reviews in Landscape Research*, 1, 1–38.