What is Agroforestry? Practices and Pathways for Multifunctional Landscapes

An agroforestry primer for interdisciplinary online learning

Objectives of the curriculum:

Upon completion of this set of modules, students will be able to…

1. Define agroforestry practices as they are situated in a broader ecological and social context;
2. Recognize the value of perennial crops in agroecological systems;
3. Consider planning, design, and management approaches for specialty crops in agroforestry.

Module 1: Understanding agroforestry as it is situated in a broader ecological and social context

Video: 20 minutes
Introduction to agroforestry as a multifunctional landscape application (Dr. Sarah Lovell)
https://youtu.be/GXQTedmGcWY

Text: *Working Trees for Agriculture* (USDA National Agroforestry Center)
https://www.fs.usda.gov/nac/assets/documents/workingtrees/brochures/wta.pdf

Guiding questions

- Consider current global circumstances with regard to regional food and agriculture systems: how might agroforestry play a role in climate resilience, human health, and other current issues? What ecological, economic, or social concerns relevant to your own community may be addressed with agroforestry?
- Imagine you are an agriculture or conservation policy-maker; what barriers would you expect to encounter in supporting implementation of landscape-scale agroforestry?
- Imagine you are a farmer; what considerations would influence your willingness to adopt agroforestry practices?

Supplemental materials

The Agroforestry Podcast episode 1: *Insights from Agroforestry Change-Makers*
http://agroforestry.libsyn.com/

8th Annual Agroforestry Symposium seminar videos: Connecting human health and conservation with medicinal plants in agroforestry http://www.centerforagroforestry.org/events/sym2017.php

6th Annual Agroforestry Symposium seminar videos: Climate-smart agriculture and the role of agroforestry http://www.centerforagroforestry.org/events/sym2015.php

Module 2: What is the value of integrating perennial crops in agroecological systems?

Video: 1 hour 11 minutes
Agroforestry Economics (Dr. Larry Godsey)
https://www.youtube.com/watch?v=ub9CP5MmooQ&list=PLU_ms5hgm-kEPS1bsSqB0pvP6j3rSTr0j&index=4&t=0s

Text: select one or more of the following texts based on subject area(s) of interest.

Agroforestry in Action technical guide: *Integrating Agroforestry Practices for Wildlife Habitat* (MU Center for Agroforestry) http://extension.missouri.edu/explorepdf/agguides/agroforestry/af1012.pdf

Working Trees for Water Quality (USDA National Agroforestry Center)
https://www.fs.usda.gov/nac/assets/documents/workingtrees/brochures/wtwq.pdf

Working Trees Info: *How can agroforestry help landowners adapt to climate change?* (USDA National Agroforestry Center)
https://www.fs.usda.gov/nac/assets/documents/workingtrees/infosheets/WTInfoSheet-ClimateAdaptation.pdf

Guiding questions

- How can the ecological values of diversified, integrated perennial farm systems (e.g. soil health, water management, wildlife habitat etc.) affect a farmer's financial 'bottom line'?
- Given the long-lived nature of perennial crop species, how can farmers, policy-makers, agencies and organizations support the financial risk of agroforestry implementation?
- Explore the Center for Agroforestry's Financial Decision Support Tools for specialty perennial crops (http://www.centerforagroforestry.org/profit/); what values (social, ecological) are not represented in this financial model? Can these values be integrated into an agroforestry planning model? If so, how?

Supplemental materials

The Agroforestry Podcast episode 9: *Agroforestry in Urban Landscapes* http://agroforestry.libsyn.com/

9th Annual Agroforestry Symposium seminars: Soil health in diverse cropping systems
http://www.centerforagroforestry.org/events/sym2018.php

7th Annual Agroforestry Symposium seminars: The future of pollinators, why agroforestry matters
http://www.centerforagroforestry.org/events/sym2016.php

"Persistence" mini-documentary (15min) http://www.savannainstitute.org/persistence-documentary.html

Module 3: Planning, design, and management approaches for specialty crops in agroforestry

Audio: The Agroforestry Podcast episode 5: *Tree-based Polycultures* http://agroforestry.libsyn.com/

Text: select one or more of the following texts to review specialty crop applications

The Training Manual for Applied Agroforestry *Appendix 2: Trees and Shrubs for Agroforestry* http://www.centerforagroforestry.org/pubs/training/app2_2018.pdf

Agroforestry in Action technical guide: *Growing and Marketing Elderberries in Missouri* http://www.centerforagroforestry.org/pubs/2014GrowingElderberryGuide.pdf

Agroforestry in Action technical guide: *Growing Shiitake Mushrooms in an Agroforestry Practice* http://extension.missouri.edu/explorepdf/agguides/agroforestry/af1010.pdf

Agroforestry in Action technical guide: *Growing Chinese Chestnuts in Missouri* http://extension.missouri.edu/explorepdf/agguides/agroforestry/af1007.pdf

Guiding questions

- The success of integrated perennial crops depends on their compatibility both above and below ground. What biophysical factors do you think are most important for a farmer to consider when planning an agroforestry site design?
- How does available infrastructure, consumer awareness, and marketing opportunity affect the viability of a specialty crop as it enters regional food systems?

Supplemental materials

11th Annual Agroforestry Symposium seminars: Value-added processing for agriculture and forestry products https://www.youtube.com/playlist?list=PL0DrukDNX73oUo3gPtj7svHDl311_I0yF

The Agroforestry Podcast episode 8: *Pawpaw: Cultivating the Elusive Fruit* http://agroforestry.libsyn.com/

The Agroforestry Podcast episode 4: *Native Plants for Perennial Farms* http://agroforestry.libsyn.com/

Gold, M., Cernusca, M., Hall, M. 2013. *Handbook for Agroforestry Planning & Design.* University of Missouri Center for Agroforestry. http://www.centerforagroforestry.org/academy/2013/HandbookforAgroforestryPlanningandDesign.pdf

Agroforestry Practice Videos. 2004. University of Missouri Center for Agroforestry (UMCA): http://www.centerforagroforestry.org/pubs/videos.php

USDA NRCS Plant Database: http://www.plant.usda.gov

USDA Forest Service Plant Database: http://www.fs.fed.us/database/feis/plants/