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Module

01. Agroecology and Permaculture Ethics

Module Progress: 

Background Material

The readings and activities that follow promote a conversation about ecological balance and sustainable agriculture. They are mostly adapted from the [Farmer to Farmer Learning Materials](#) originally published [Food First](#).

Presentation Slides

[Ana Galvis: What is Agroecology, Cohort 4, Sept-Dec 2017](#)



[Ana Galvis: What is Agroecology?](#)



[Troy Horton and Sasha Shankar: Permaculture Ethics](#)

Agroecology

We are delegates representing diverse organizations and international movements of small-scale food producers and consumers, including peasants, indigenous peoples, communities, hunters and gatherers, family farmers, rural workers, herders and pastoralists, fisherfolk and urban people. Together, the diverse constituencies our organizations represent produce some 70% of the food consumed by humanity. They are the primary global investors in agriculture, as well as the primary providers of jobs and livelihoods in the world.”

the International Forum for Agroecology

This quote emphasizes that agroecological knowledge is co-created with small farmers, as opposed to a discipline created by academics. Agroecology is rooted in ancestral knowledge and ancestral practices of land management. This video from the International Forum for Agroecology presents a variety of perspectives:

Agroecology: Voices From Social Movements (Long Version)



In *Agroecology what it is and what it has to offer* Silici (2014) describes Agroecology as “the application of ecological concepts and principles to the design and management of sustainable agro-ecosystems” that has three (often inseparable) facets:

1. A scientific discipline involving the holistic study of agro-ecosystems, including human and environmental elements
2. A set of principles and practices to enhance the resilience and ecological, socio-economic and cultural sustainability of farming systems
3. A movement seeking a new way of considering agriculture and its relationships with society

However, other scholars disagree with this sort of “reductionist” definition of agroecology (Méndez, Bacon and Cohen 2013). For example, Guzmán and Woodgate present a holistic definition of agroecology, which has its “foundations in agrarian social thought” (Guzmán and Woodgate, 2013).

The three readings that follow *are optional*, but provide insight on agroecology from the perspective of global farmer movements: La Vía Campesina and the Farmer-to-Farmer Movement.



[Grassroots Perspectives on Agroecology from La Vía Campesina.](#)



[Kruger \(1995\) Farmer-To-Farmer: We are the Solution](#)



[Holt-Giménez \(1995\) La Canasta Metodológica](#)

What Is Permaculture?

The information that follows comes from PJ's Permaculture Primer, and from [PJ's Urban Permaculture Guide](#).



[Planting Justice Permaculture Ethics and Principles](#)

Permaculture is the conscious design of agriculturally productive ecosystems which have diversity, stability, and resilience of natural ecosystems.

-Bill Mollison, co-founder of Permaculture

Permaculture is a scientific and artistic method for designing human settlements

to meet humanity's basic needs (healthy food, clean water, shelter, energy, and community) in a way that not only “sustains” but actively *regenerates* biodiversity and natural resources. Whether you are designing your own urban plot, a community garden, your whole city block, or a ten thousand acre parcel, Permaculture begins with the premise that by mimicking and working with Nature's principles, we can design for long-term abundance and healthy habitat for all life, from microscopic soil organisms to humans.

Permaculture begins with close observation, and builds upon thousands of years of practices from around the world that have long enabled communities of people to provide for their basic needs in ways that passively store energy, water, biodiversity, nutrients, ... Life...in the landscape. By working with Nature's patterns – for example, the way water moves across the landscape, or the way healthy soil micro-organisms break down organic matter – we can refill aquifers, build new topsoil, and help create biodiverse ecosystems in a surprisingly short amount of time. Indigenous peoples from California to India and across the world understood what we have only recently forgotten: that we are part of nature, that are lives are dependent upon the lives of all living beings, and that our collective actions determine whether our descendents experience scarcity or abundance.

We've designed most of our farms and cities to shed water and nutrients, rather than to soak them into the landscape. This has resulted in a food system that depends upon unsustainable amounts of groundwater, oil, and toxic inputs for its survival. In far too many places, we are watching humanity turn lush valleys, abundant coastlines, and diverse forests into deserts, or worse, poisoned and deeply scarred landscapes unsuitable for most living beings.

These are well-known and over-studied problems. We know what we are doing wrong. What we need are tangible solutions! So lets do it!

Life seeks to perpetuate itself. It does this by interweaving multiple connections between organisms, so that each organism's life creates the conditions for life for literally millions of other organisms. The most stable ecological systems are those with the most connections. The role of the permaculture designer then is not to invent anything new, only to arrange life forms in a way that maximizes the numbers of connections between elements, maximizes productivity, and minimizes work and pollution. If done right, a permaculture garden can water itself, build topsoil itself, and grow food itself, while the designer watches and eats! By following some basic design principles, we can design landscapes that will catch and harvest nearly every drop of water to produce food and beauty for decades to come without much tilling, weeding, or work at all, besides harvesting!

- Produce more energy than they consume
- Create soils and forests, rather than simply conserving them
- Produce most regional needs
- Recycle or produce nutrients
- Prevent energy from leaving before the basic needs of the whole system are satisfied

Deeply embedded in permaculture is a respect for the “Life Ethic”: all living beings are not only means but also ends. In addition to instrumental value to humans and other living organisms, they have an intrinsic worth.

1. **Care of Earth:** this includes all living and nonliving things that share this planet with us.
2. **Care of People:** to promote self-reliance, holistic health, and wellbeing for individuals and communities
3. **Setting Limits to Consumption:** the goal is to leave our earth healthier than we found it.

4. **Returning the Surplus:** to pass on anything surplus to our needs (labor, money, information, etc.)
5. **Working With Nature Rather than Against Her:** Observe, respect, and work with Nature's patterns (decay, gravity, contours, etc) to allow Nature to do the work and build fertility for us
6. **The Problem is the Solution:** Viewing every "problem" as an opportunity. For instance, slug overpopulation is a duck deficiency. A shaded backyard in Northern California is an ideal place for the cultivation of shiitake and oyster mushrooms, rabbits, indian lettuce (*Claytonia perfoliata*) and salal berries (*Gaultheria shallon*). Pollution and overpopulation in cities provides the excess "waste" nutrients and human energy we need to transform our cities into abundant and beautiful resources for food and energy.
7. **Make the Least Change for the Greatest Possible Effect:** Minimize unnecessary effort. Instead of digging up your lawn by hand (an enormous effort that will probably result in the lawn's regrowth due to the fact that it is very difficult to dig up all the roots), **sheet mulch** instead! Cover that lawn with biomass, and let the lawn decompose and turn into topsoil with the help of worms, bacteria, and fungi. Nature does the work, and you are left with rich, living topsoil (and a healthy back).
8. **Every Element Supports Many Functions (Stacking Functions):** For example, a tree can produce food, provide shade, support bird habitat, filter air pollution, provide a wind break, prevent soil erosion, drop leaves for use as mulch, build soil, soak up water, create beauty, and much more.
9. **Every Element is Supported by Other Elements (Planned Redundancy):** Once you have listed all the functions, needs (inputs), and products (outputs) for the elements in your design, you can place elements that support each other together. in the right place. When the needs required by each element are satisfied by the "wastes" of other elements, you've just eliminated a lot of work and pollution!
10. **Use Native and Perennial Plants Wherever Possible:** Use native plants first, proven (and delicious) low-maintenance perennials next, and annuals third. Native

plants are best adapted to your local ecology, and thus require the least maintenance and inputs. Perennial fruits, berries, nuts and vegetables that are adapted to your climate also can be extremely low-maintenance, and they can provide abundant harvests for generations. Annuals are often desired too for their culinary importance and cultural relevance, but these require more effort and care, and must be replanted each season.

11. Relative Location: Time is perhaps an individual's most precious resource. Use methods of permaculture design to place related and interdependent elements together, and the most used elements closest to your house and along commonly traveled routes.

12. Relationship Between Elements: Bill Mollison says it best:

Design is a connection between things. It's not water, or a chicken, or the tree. It's how the water, the chicken and the tree are connected. It's the opposite of what we are taught in school. Education takes everything and pulls it apart and makes no connections at all. Permaculture makes the connection because as soon as you have the connection, you can feed the chicken from the tree.

– Bill Mollison, co-founder of Permaculture

13. Pollution as an Unused Resource: Pollution is nothing but an overabundance of a resource in the wrong place...an overabundance of nutrients that are not being used by other elements in the system. By Design...

- Interactive Diversity > Stability
- Stability > Fertility
- Fertility > Productivity
- Productivity > Vibrant Local Economies
- Local Economy > Community

- Community > Culture

Permaculture design emphasizes patterning of landscape, function, and species assemblies. It asks the question, “Where does this element go? How is best placed for maximum benefit in the system?” Permaculture is made up of techniques and strategies:

- Techniques are how we do things, (one-dimensional)
- Strategies are how and when, (two-dimensional).
- Design is patterning, (multi-dimensional)
- Permaculture is all about the science and ethics of design patterning.
- Approaches to design
 1. **Maps, “where is everything?”** A main tool of a designer, but “the map is never the territory”. Be careful not to design just from maps, no map tells the entire story that can be observed on the ground. A sequence of maps are valuable to see clearly where to place elements: – Water, Access, Structures, Topology etc.
 2. **Analysis of elements, “how do these things connect?”** List the needs, products, and the intrinsic characteristics of each element. Lists are made to try and link the supply needs of elements to the production needs of others.
 3. **Sector planning, “where do we put things?”**
 - Zones help us place elements in a beneficial relative location. Zone 1 may be your home, bedroom, and bathroom, so you would place things in zone 1 that you use many times per day. Zone 2 may be just out your front door, so place things in zone 2 that you need once a day or more, whereas things go in zone 5 that you only need a few times per year.
 - Sectors help us understand the flows of energy into the system. Where is the wind coming from? Where is the path of the sun in the summer and in the winter.
 - Slope analysis helps us to best utilize gravity and water. Can we store

that rainwater tank on the highest point possible, to water our gardens using gravity?

- Orientation: Know the path of the sun! Make sure that you have adequate sun exposure in the winter, and shade in the summer.

4. Observational

5. Experiential

The struggle of people against power is the struggle of memory against forgetting.

-Milan Kundera

Indigenous peoples have long sustained themselves through their intimate connection to their local ecology... the natural patterns, plants, water sources, sources of energy, soils, animal life, etc around them. Exploitation of the earth's natural resources on a massive global scale, and the introduction of unbalanced economic systems (so-called "Free Trade" agreements) interrupts the stability of local ecologies and economies, and diminishes the ability of local communities to provide for their basic needs. This leads to mass migration and the devastating loss of cultures and place-based knowledges.

Permaculture can help us re-remember the ingenious techniques and strategies that enable humans to provide for our needs in ways that contribute to the overall health and dynamic vibrancy of all living things around us, on which we depend for our own survival. What could be more important than that?

We badly need permaculture in urban environments, and fast! Cities are epicenters of poverty, hunger, unemployment, and pollution... but seen another

way, they are also epicenters of resources, nutrients, diversity, and possibility! We have great access in the city to a variety of free, excess nutrients (on a purely scientific caloric level) and materials to build healthy soil and garden infrastructure. Just think about all the uneaten food from supermarkets and restaurants in your neighborhood... these nutrients can be collected and composted to build soil and garden fertility where there once was none. Dense population offers us a ready supply of collaborators, employees, and volunteers, and cuts the shipping mileage from soil to plate to nearly zero. We have paved surfaces such as roofs, sidewalks, and driveways, which we can use to direct water to grow food and fertility. We have a variety of microclimates in which we can grow diverse varieties of food. What we need is innovation, tangible solutions, and successful models that can be replicated in cities across the world.

Reflection Questions



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