



Community Entrepreneur Development Institute

Why & How Ecological Farming?!
Training Workshop in HEPA Eco-Farming School
(Son Kim Commune, Huang Son District, Ha Tinh Province, Central Vietnam)

Key Farmers of MECO-ECOTRA/YIELDS 2015-2025
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Why Eco-Farming?



Photo by SPERI 2009 at HEPA Eco-Farming School

Abstract

In the global context of increasing agricultural intensification to feed an exponentially growing global population, climate change, rural displacement, and deforestation, eco-farming provides a holistic alternative that centers the mutual bond between human society and ecological integrity. Eco-farming provides not only an alternative method for food cultivation, forest protection, and natural resources management, but an approach to culture and customary laws rooted in practices and beliefs towards spiritual landscape of indigenous ethnic minority people in the Mekong region. An analysis of key eco-farmers will examine the potential and the right that farmers have in self-determination and livelihood sovereignty as it applies to land-use, spirituality, co-governance, and resistance to industrialization and neo-liberal policy.

Problem Statement

Currently, in Vietnam, farmers constitute roughly 25% of the total workforce (down from nearly 60% in 2000) and yet are responsible for food production for all of society. Concurrently, with a growing global population and increasing urbanization, farmers face an increasingly difficult task of cultivating food to support a global population. It is estimated that at least 0.5ha of arable land per capita is needed to provide an adequate and diverse diet for the world's population.

However, in the past 40 years, arable land per capita has decreased to only 0.27ha of arable land per capita and is projected to decrease even further with exacerbated levels of erosion and land loss (Pimental et al 1995).

Despite this trend in development, eco-farming provides a viable and holistic alternative to the poverty of wealth and culture often associated with farmers. With eco-farming, key farmers serve as a model of the full potential of farmers and their critical role as gate keepers for not only food, but also ecology, culture, and spiritual practice in society. Eco-farming defines farmers as having the following traits: 1) understanding five fundamental characteristic¹ of an ecosystem; 2) having five fundamental rights² to natural resources; 3) participating in a network of farmers; 4) Good health; 5) Willingness to share knowledge and experience; 6) Knowledge and know-how of harvest; 7) Knowledge and know-how of production; 8) Knowledge and know-how of processing; 9) Knowledge and know-how of seed saving; 10) Knowledge and know-how of storage and preservation of harvest; 11) Knowledge and know-how of marketing and communicating the values and principles behind their products; 12) Systematic and systems-level thinking; 13) Community spirit – a dedication to advancing the well-being and livelihood sovereignty of their village; 14) Nurturing nature; 15) Understanding traditional culture and customary norms.

It is agriculture and farmers that we are concerned with but it is the eco-farming farmers who practice Biological Human Ecology Theory that we will examine as a lens to view the issues and solutions that confront the world.

This training workshop aims to address issues specifically pertaining to the small-holder farmer, but is also equally applicable to society as without the smallholder farmer, food production would effectively crumble. In a context where the global population is increasing by over 250,000 individuals daily, the importance of smallholder farmers in providing not only food security, but also protecting natural biodiversity becomes increasingly crucial. With industrial development, numerous problems face smallholder farmers and some of which are listed below:

Erosion

Industrial agriculture has resulted in increasing mechanization and intensification of farm operations. In the past 50 years, the average size of a farm has doubled. This increase in farm size has been made possible through mechanization. This often means deep-tillage and monocropping. Such unsustainable management of soil and natural resources has led to massive erosion. Currently, over 80% of the world's arable land is at high risk of erosion, often due to over-tillage and over-pasturing. 30% of all farmland that is abandoned is due to erosion and accompanying salinization and waterlogging. This is particularly troubling as over 12,000,000 hectares of arable land is destroyed and abandoned annually due to such unsustainable practices (Pimentel et al 1995).

¹ 1) Diversity; 2) Uniqueness; 3) Interaction; 4) Adaptability; and 5) Sustainability.

² 1) the right to the ecosystem (basic); 2) the right to nurture the ecosystem (unique); 3) the right to practice wisdom and experience on the ecosystem (practical); 4) the right to self-reliance and self-determination in the ecosystem (holistic); and 5) the right to co-nurture the ecosystem with neighbors (strategic).

Climate change

Vietnam ranks second in the world in vulnerability and impact of climate change on land loss and agriculture. Impacts include increased temperature, precipitation, drier dry seasons and wetter wet seasons. Projections show that Vietnam is facing an annual increase in temperature of over 0.4 degrees Celsius that will only be exacerbated with time. In addition, Vietnam is also facing a potential 1.2% increase in average annual rainfall and annual sea-level rise of over 12cm (van Dijk et al 2012). As seen in the past, these factors have a huge potential to impact local food security as well as economic security via decreased agricultural yields (Bojö et al 2010).

Land-use change

“Señores, you don’t seem to understand. I am a farmer. My father was a farmer and his father was a farmer as far back as we know. You don’t seem to understand that we don’t want your welfare handouts, your political positions are meaningless to us, and your factory jobs are what we oppose – we want our sons and daughters, their sons and daughters to continue to be farmers on our own lands with our own languages and our own cultures and our own traditions. This is what we are fighting for -this is what we are willing to die for.” (Zapatista farmer)

Land-use change has been one of the key factors in arable land loss and farmer displacement. In the context of Viet Nam, from 1990-2003, over 697,427 hectares of land was acquired by the State for construction of industrial zones, urban areas, and infrastructure for the purposes of urban expansion and economic development. This trend has continued as from 2001-2010, 1,000,000 hectares was acquired by the State, which is equivalent to 10% of Viet Nam’s landmass (World Bank 2011). This large-scale land acquisition and land-use change has impacted over 950,000 farmers and 627,000 farm households. Urban resettlement has not been entirely successful and a reported 25-30% of displaced farmers became jobless and unable to adapt to the urban job market (VietNamNet/TN 2009).

Forest loss

By 2003, over 64% of high quality forest cover in the Mekong Delta has been lost and the region is on track towards complete deforestation by the end of the century. Land use change is the main driver of deforestation as not only urbanization, but also changes in global agricultural and timber markets drive farmers and companies to exploit forests in the process of economic development. In fact, expansion and increase in demand in the timber industry accounts for a majority of forest displacement in Vietnam (Meyfroidt and Lambin 2009).

Loss of culture, of self-reliance

In an era of rapid globalization and expansion of neo-liberal trade policies, farmers have increasingly been displaced and pressured to participate in the global commodity crop market. This essentially has been a main driving factor in the reduction of overall farmer self-reliance and loss of rural culture. Industrial scale agriculture has replaced small-holder farmers with factory farms, diverse landscapes with expansive mono-cultures, and rural villages with industrial parks. The resulting “economic development” has displaced countless rural people into urban areas and has altered both lifestyle and culture. Farmers who once were able to cultivate the land and provide for themselves now have to work in factories and urban areas, often for poverty wages, in order to purchase basic subsistence goods.

Historical Background

Green Revolution and the age of Industrial Agriculture

The Green Revolution started in the 1960s and was central in catalyzing and developing industrial agriculture. The Green Revolution was a reaction to the Red Revolution to win support of farmers and contain the spread of Communism. At the time, the Communist Revolutions in USSR³ and China were effective in galvanizing farmers and the West needed a way to entice farmers. The Green Revolution's approach was to use industrialized farming to boost outputs and present the allure of increased profitability to garner rural and peasant support.

The Green Revolution ushered in an era of agriculture that focused on development of industrial agriculture. Specifically, this meant the development of high-yield crops and seeds in lieu of traditional native seeds. This also meant popularizing the use of chemical fertilizers, pesticides, and herbicides. The logic was to promote a method of cultivation that replaced traditional crops and local biodiversity with high-yield commercial crops that increased production and output to markets and thus increased income for farmers.

The Green Revolution was not without severe environmental and societal impacts. The shift from multi-cropping and use of native species to mono-cropping systems that relied heavily on non-traditional, high-yield crop varieties led to a loss of agricultural diversity and loss of traditional farming knowledge. In addition, increased application chemical fertilizers, pesticides, and herbicides have resulted in massive soil degradation. This takes the form of soil nutrient loss and structural breakdown that leaves much of mono-cropped systems extremely vulnerable to erosion. In addition, increased presence of industrial farming systems has led to increased environmental pollution from run-off and direct site applications. Along with eliminating undesired pests and weeds, chemical herbicides and pesticides caused massive collateral damage in the form of fish, bird, insect, and soil microbial die-offs. Unfortunately, increasing use of chemical herbicides and pesticides have the unwanted impacts of creating resistant strains of weeds and pests. This ultimately creates a positive feedback where increased use of herbicides and pesticides results in increased resistance and thus cause increased reliance on chemicals for effective cultivation of cash crops.

Increased industrialization of agriculture also had significant social impacts. The Green Revolution's developments in the agricultural sector heavily favored wealthy, landed farmers. Smaller farmers had to borrow money, go into debt, or sell land to participate in the new industrial agriculture sector. This was in part due to increased mechanization that created an industry where farm labor was no longer needed and thus forced farmers who lost or sold their land to move into urban areas to find work. Often, these farmers were ill-equipped for the urban job market and ended up living in urban areas in poor conditions. Accompanying this rural displacement was a massive loss of culture. Rural culture, especially indigenous culture, is tied very much to the native natural ecosystem. Displacement and removal of people from the local ecosystem led to a breakdown of social beliefs, organization, and identity. These issues were

³ Former Soviet Union

further exacerbated by government policy that supported the Green Revolution and further centered power into the larger, emerging industrial farms.

The Green Revolution was the precursor to the drive towards the development of Genetically Modified Organisms (GMO). The massive environmental degradation that resulted from the industrialization of agriculture demanded a solution to resolve issues resulting from heavy application of chemicals in industrial farming systems. To overcome these issues, agro-chemical companies developed a new type of GMO seed to resolve issues caused by chemical pollution. These seeds were engineered to be resistant to herbicides and pesticides to curtail dependency on chemicals. This technology, however, caused additional ecological problems. GMO crops further promoted mono-cropping and thus further reduced landscape and ecological biodiversity. Over time, reliance on GMO crops has led to the emergence of super weeds and super pests that have become resistant to the GMO crops. This has the dual impact of requiring GMO farmers to once again resort to chemical applications to deal with weeds and pests while making farming more difficult for organic farmers. There has yet to be significant evidence proving the economic and yield superiority of GMO crops and health impacts are yet unknown. More importantly, GMO crops have eroded farmer sovereignty. GMO crops are the intellectual property of agro-chemical companies and are often engineered with terminator genes that prevent seed saving, thus creating a situation where farmers are completely dependent on these companies for a supply of seed, fertilizer, herbicide, and pesticide.

The Green Revolution and the eventual development of GMO products is tied closely to the development of neo-liberal forms of economy that further push the agenda of massive industrialization and dis-enfranchisement of local, small farmers.

The main points of neo-liberalism include:

1. **THE RULE OF THE MARKET** Liberating "free" enterprise or private enterprise from any bonds imposed by the government (the state) no matter how much social damage this causes. Greater openness to international trade and investment, as in NAFTA. Reduce wages by de-unionizing workers and eliminating workers' rights that had been won over many years of struggle. No more price controls. All in all, total freedom of movement for capital, goods and services. To convince the general working population that neo-liberalism is good for all, industry and government often argue that "an unregulated market is the best way to increase economic growth, which will ultimately benefit everyone." Similar to Reagan's "supply-side" and "trickle-down" economics which failed facilitate any meaningful trickle down of wealth.
2. **CUTTING PUBLIC EXPENDITURE FOR SOCIAL SERVICES** like education and health care. **REDUCING THE SAFETY-NET FOR THE POOR**, and even maintenance of roads, bridges, water supply -- again in the name of reducing government's role. Ironically, industry is not in opposition to government subsidies and tax benefits for business. This is illustrated very clearly in the example of big agriculture farm subsidies, which funnels billions of dollars to industrial agriculture conglomerates and thereby causing overproduction of agricultural commodity cash crops.
3. **DEREGULATION** Reduce government regulation of everything that could diminish profits, including protecting the environment and safety on the job.

4. **PRIVATIZATION** Sell state-owned enterprises, goods and services to private investors. This includes banks, key industries, railroads, toll highways, electricity, schools, hospitals and even fresh water. Although usually done in the name of greater efficiency, which is often needed, privatization has mainly had the effect of concentrating wealth even more in a few hands and making the public pay even more for its needs.
5. **ELIMINATING THE CONCEPT OF "THE PUBLIC GOOD" or "COMMUNITY"** and replacing it with "individual responsibility." Pressuring the poorest people in a society to find solutions to their lack of health care, education and social security all by themselves -- then blaming them, if they fail, as "lazy" (Taylor and Gans-Morse 2009).
6. **POVERTY ALLEVIATION INDUSTRIAL COMPLEX (STRUCTURAL POVERTY)**
"How can you buy or sell the sky the warmth of the land? The idea is strange to us. Yet we do not own the freshness of the air or the sparkle of the water. How can you buy them from us? Every part of the Earth is sacred to my people. Every shining pine needle, every sandy shore, every mist in the dark woods, every clearing and humming insect is holy in the memory and experience of my people." Chief Seattle

The poverty alleviation industrial complex is a structure that seeks to force otherwise self-sufficient communities into the global market place. This is done through a combination of utilizing a cash based economy, neo-liberal economic policy, and application of global definitions of poverty and wealth that devalue native self-sufficiency. Prior to introduction or creation of the poverty alleviation industrial complex, it is important to note that communities have often been self-sufficient. This is defined as communities that can self-determine and provide completely for their own needs in a sustainable way. Often, self-sufficient communities operate in a subsistence economy that relies on local natural resources and eco-systems to provide for their material, spiritual, and cultural needs. These economies are often completely independent of cash-based economies. The important point to consider is sovereignty and self-determination.

The creation of a poverty alleviation industrial complex requires two conditions to be met. First, community sovereignty must be removed. Most often, this is done through removing land access and land rights either through forced land acquisition or resettlement. This ensures that communities cannot be self-sustaining and must rely on outside sources to supply the necessary materials and supplies to meet basic needs. The second condition that must be met is to require communities to participate in the cash-based economy, most often through the means and mechanisms of selling labor to corporations. This participation in the cash-based economy is often evaluated as poverty alleviation, when reality, this places communities further into poverty as sovereignty and self-determination is lost in the process.

In contrast, the Biological Human Ecology theory defines poverty as made up of 3 components:

1. Isolation (sự cô lập) – this phenomenon is not limited to geographic isolation, but instead refers to isolation from the center of power and decision making power. For example, this can be illustrated in cases where governments make decisions that impact the livelihoods of communities without community input (see figure below).
2. Inconfidence (thiếu tự tin) – inconfidence is brought about in part due to geographic and informational isolation that prevents communities from communicating and participating in

the creation and dissemination of information. This amplifies the negative aspects of socialization (for example, the social myth that minority tribes are in some way inferior).

3. No-ownership (không có quyền sở hữu) – this concept is directly tied to land-rights and ownership of the means of production. When communities are removed from the land or ecosystem, they effectively lose control over their own lives. For example, communities without land cannot become self-sufficient and are then forced to sell their labor to companies to earn a wage to purchase basic necessities (as opposed to producing basic necessities directly in a self-sufficient manner).

The Structural Property of Trần Thị Lành 1995

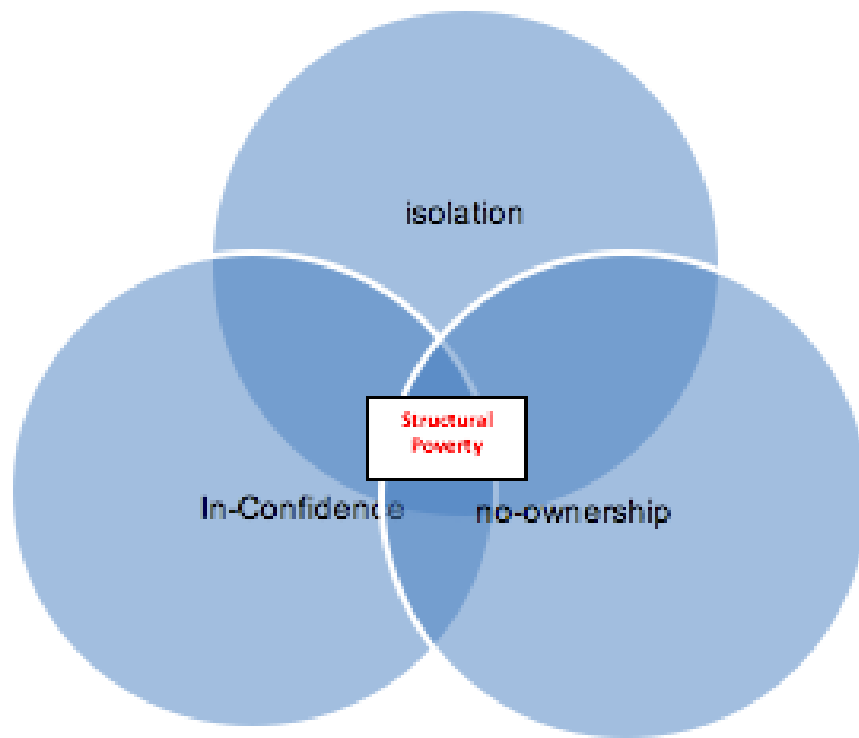


Figure 1

Farmer Movements

Different types of Farmers:

Subsistence

Subsistence farmers are cultural farmers whose goal is holistic natural resource management and livelihood sovereignty. The livelihood and culture of such farmers is entirely connected to the local eco-system. These farmers are not precluded from participating from local markets, but differ from other farmers in the importance placed on sovereignty, livelihood, and culture.

Commercial

Commercial farmers cultivate crops in methods that can either involve entirely mono-cropping or limited poly-cultures. These farmers are primarily concerned with producing crops to bring to market. These farmers differ from industrial crop farmers in that they are still primarily involved in food crop production and can supply both local and regional markets.

Industrial Crop

Industrial crop farmers are almost entirely mechanized and participate exclusively in intensive mono-cropping of cash crops. These crops are supplied to the global commodity crop market. Much of these commodity crops are subsidized and processed for either production of animal feed or processed foods.

Development of industrial and commercial agriculture withstanding, numerous alternative farmer and consumer-based movements have synthesized in recent decades in response to environmental, food safety, and workers' rights concerns associated with industrial agriculture. Some of these alternative farmer movements are listed below:

Organic

The organic farming movement started as a response to concern around the environmental and health impacts of chemical industrial agriculture. Simply, organic agriculture is in opposition to un-restricted application of chemical fertilizers, pesticides, and herbicides. Over time, organic agriculture has been commodified and in the United States, organizations such as OMRI⁴ dictate what can and cannot be used in organic farming practices. Organic practices do not entirely exclude the use of chemicals, but rather, excludes the use of un-permitted chemicals and materials. Organic farming is still primarily concerned with **profits** and **commercialization of farm outputs** and can still involve the use of mono-cropping.

Permaculture

Permaculture was started by Bill Mollison and David Holmgren in the 1970s in response to the Green Revolution. Permaculture differentiates itself as it emphasizes working with nature **within the context of system design and a set of environmental and social ethics**. The ethical principles of permaculture can be summed up as primarily focusing on caring for the earth, caring for people, and emphasizing fair sharing of resources. Design principles associated with

⁴ OMRI = Organic Material Review Institute

permaculture emphasize observation, working with nature, resourcefulness, creativity, energy storage and maintenance, micro- and macro-level interactions, integration, and diversity. The goal of permaculture is to *create a sustaining ecosystem that has been disrupted* due to industrialization.

Agro-ecology

Agro-ecology excludes the use of chemicals and bases its farming methodology on **local and indigenous farming practices and technology supplemented with relevant scientific knowledge**. Agro-ecology emphasizes holistic landscape approaches and poly-cultures that maintain natural biodiversity as opposed to large-scale mono-cropping operations of industrial farms and is **dedicated to the saving of native seeds and preservation of native customary laws**.

The MASIPAG Agroecology Example

An example of what can be achieved by agro-ecological techniques is given by MASIPAG (Farmer-Scientist Partnership for Agricultural Development [established 1986]), a Philippine farmer-led network of people's organizations, NGOs and scientists working toward the sustainable use and management of biodiversity through farmers' control of genetic and biological resources, agricultural production, and associated knowledge.

A recent report (Bachmann et al 2009), considered to be the largest study of sustainable agriculture in Asia, analyzed the work of MASIPAG by comparing 280 full organic farmers, 280 farmers in transition toward organic farming, and 280 conventional farmers. It focused on food security, income, livelihood, yield, productivity, environmental outcomes, and farmer knowledge and empowerment.

The research found that food security was significantly higher for organic farmers. Their reported health was also substantially better. It revealed that the full organic farmers have considerably higher on-farm diversity, growing 50% more crops than conventional farmers, better soil fertility, less soil erosion, increased tolerance of crops to pests and diseases, and a net income one and a half time higher than conventional farmers. References: Altieri, M. A. 2002. Agroecology: the science of natural resource management for poor farmers in marginal environments, *Agriculture, Ecosystems and Environment* 1-12. Altieri, M. A., F. R. Funes-Monzote, and P. Petersen 2012 Agro-ecologically efficient agricultural systems for smallholder farmers, *Agron.Sustain.Dev* 32:1-13. Altieri, M.A. and P. Rosset (1999) Ten Reasons Why Biotechnology Will Not Ensure Food Security, Protect The Environment And Reduce Poverty in the Developing World, *AgBioForum*, 2 (4):155-162 . Bachmann, L. et al (2009) Food Security and farmer Empowerment: A study of the impacts of farmer-led sustainable agriculture in the Philippines, MISEREOR. European Union (2013) Impact of Biotechnology on Developing Countries, Directorate-General for External Policies, Policy Department.

Eco-Farming

Eco-farming emphasizes holistic approaches to farming and a culture and *spirituality* that is tied to the local eco-systems. Eco-farming largely differentiates itself from other farming movements as it is based on **indigenous movements and is tied to community spirituality, well-being, and livelihood sovereignty**.

The following table helps illustrate key differences between different farmers and farming approaches.

	Industrial Agriculture	Organic Agriculture	Agro-ecology	Permaculture	Eco-farming
Fertilizer	Chemical Synthetic	OMRI-Approved Fertilizers	Organic Fertilizers (Manures)	Organic Fertilizers (Manures)	Organic Fertilizers (Manures)
Pest Control	Chemical Pesticides	OMRI-Approved Pesticides	Natural	Natural	Natural
Weed Control	Chemical Herbicides	OMRI-Approved Herbicides	Natural	Natural	Natural
Seed	GMO ⁵	Organic	Organic or Heirloom	Organic or Heirloom	Native or Heirloom
Livestock Feeds	Commercial feed	OMRI-Approved food	Natural forage or farm waste	Natural forage or farm waste	Natural forage or farm waste
Destination of Foods	Off-site	Off-site	Off-site, community, subsistence	Off-site, community, subsistence	Off-site, community, subsistence
Biodiversity	Mono-cropping	Low (can be mono-cropping)	Diverse	Diverse	Diverse
Tools	Mechanized	Can be mechanized	Non-mechanized	Non-mechanized	Non-mechanized
Spirituality	Not applicable	Not applicable	Not applicable	Not applicable	Biological Human Ecology Theory
Worker Sovereignty	Workers paid wage	Workers paid wage	Livelihood Sovereignty	Livelihood Sovereignty	Livelihood Sovereignty
Farm Design	Commercial mono-cropping	Often commercial	Systems level	Systems level	Based on the 5 fundamental characteristics of Eco - System and Spiritual Landscape
Farmer well-being prioritized?	No	No	Yes	Yes	Yes
Knowledge	Scientific	Scientific	Based off traditional knowledge	Based off traditional knowledge	Based off and in cooperation with indigenous tribes
Community Development	Not applicable	Not applicable	Focuses on strengthening local communities	Not applicable	Integrated within eco-farming principles

Comparative Analysis of Farming Methods

⁵ GMO = Genetically Modified Organism

Eco-Farming and Biological Human Ecology Theory



Terrace rice field in Can Cau village - photo by SPERI 2007

Eco-farming is unique in that it is integrated within human ecology theory. This theory states that human core values, customary laws, and behavior are intricately tied to local ecology. In fact, humans and local ecosystems interact through the mutual exchange of materials, energy, and information in ways that can be harmonious. These interactions shape human society by informing core values and beliefs. These core values and beliefs give rise to customary laws and institutions that uphold these beliefs. Human behavior is the outer-most layer of human society and is a function of customary laws. Because human core values are ultimately tied to the local ecology, removal of either local ecosystem or displacement of humans from their local ecology would alter core values, customary laws, and ultimately human behavior. The interaction between humans and ecology is illustrated below:

“Eco-farming is a cultivation method which is related harmoniously to *five fundamental characteristics of an ecosystem*, namely: 1) Diversity; 2) Uniqueness; 3) Interaction; 4) Adaptability; and 5) Sustainability. These characteristics serve as a basic foundation to create life, endurance and differences of all living things. This cultivation method reflects a moral behavioral culture of farmers towards the *intangible values* that have become their *beliefs and behavioral norms*. This is the cultivation method that *nurtures the original and unique landscape pattern presented to all living things by the Creator*. Farmers who engage in this method have nurtured *five fundamental rights of a human livelihood* which have become the core values and daily behavioral norms of their life and the livelihood identity of the farmers: 1) the right to the ecosystem (basic); 2) the right to nurture the ecosystem (unique); 3) the right to practice wisdom and experience on the ecosystem (practical); 4) the right to self-reliance and self-determination in the ecosystem (holistic); and 5) the right to co-nurture the ecosystem with neighbors (strategic). This cultivation method only exists in remote areas where ethnic minorities live deep

in the forests that are less impacted by a so-called “civilized and modern” society. These communities have never ever lost themselves by running after new technology and speedy competitions in an immoral market economy towards living things. This cultivation method differs from other agriculture in its values and *ten behavioral criteria*⁶” (Tran Thi Lanh, 2007).

Eco-farming philosophy is reflected by a system of indicators of a farmer’s daily behaviors. They are: 1) *Spiritual ecosystem (worship nature)*; 2) *Farmers relate, inherit and nurture their livelihood as a gift*; 3) *Farmers are responsible for their behaviors towards the ecosystem through a system of unwritten behavioral norms (customs and wisdom)*; 4) *Respect, listen, observe, design, plan, use and enrich resources created by sun, rain and wind energies in order to create products suitable to the five fundamental characteristics of ecosystem*; 5) *Dynamic between practice and learning lessons to enrich wisdom regained from experiences in order to nurture and return natural landscape and resources for inter-generations that are presented equally to living things by the ecosystem*. (Tran Thi Lanh, 2007). Accordingly, follows are the landscape observation, designing and nurturing an ecological farming approach:

Three core values

1. Nurturing Nature;
2. Indigenous Wisdom;
3. Landscape heritage

Landscape Observation

1. Overview the holistic landscape while recognizing specific geographical features, particularly sacred/spirit signals; and clarifying edges within and between neighbouring ecologically system;
2. Note the direction of the Sun, Wind and Water Flow into the farm land ; and the relationship of these to the neighbouring landscapes;
3. Envision inter-relationships with neighbouring ecological system in order to figure out advantages and difficult, strengths and weaknesses;
4. Analyze the challenges and potential of eco-farming seasonality;
5. Design options.

Landscape Designing

1. Follow the inter-dependence between 5 fundamental characteristic⁷ of of the spiritual ecosystem;
2. Apply as appropriately as possible the three essential natural energies: Sun, Rain and Wind directing to the Eco-Farming; especially the inter-dependence between these three natural spiritual energies and the all invisible ecological micro-organic energies in the soil; in

⁷ 1) Diversity; 2) Uniqueness; 3) Interaction; 4) Adaptability; and 5) Sustainability.

addition, the vertical automatic action of gravity⁸ and the horizontal process of natural genetic changes to species⁹;

3. Be aware of Biology – Geograhpy – Chemistry cycles in the ecosystem (i.e. the cycles of nitrogen, carbon and phosphorus in nature, the water cycle and the process of photosynthesis); and be aware of the sensitive edges where the different zones of the whole eco-landscape interact;
4. Remove nothing¹⁰ from the system;
5. Accept both positive and negative interactions within and between neighboring ecologically systems towards the integration and adaptation with time and space;
6. Nurture the holistic wellbeing of the ecosystem in farming;
7. Slow – Small - Smart - Silent – Sufficient - Self-Reliant - Sustainable.

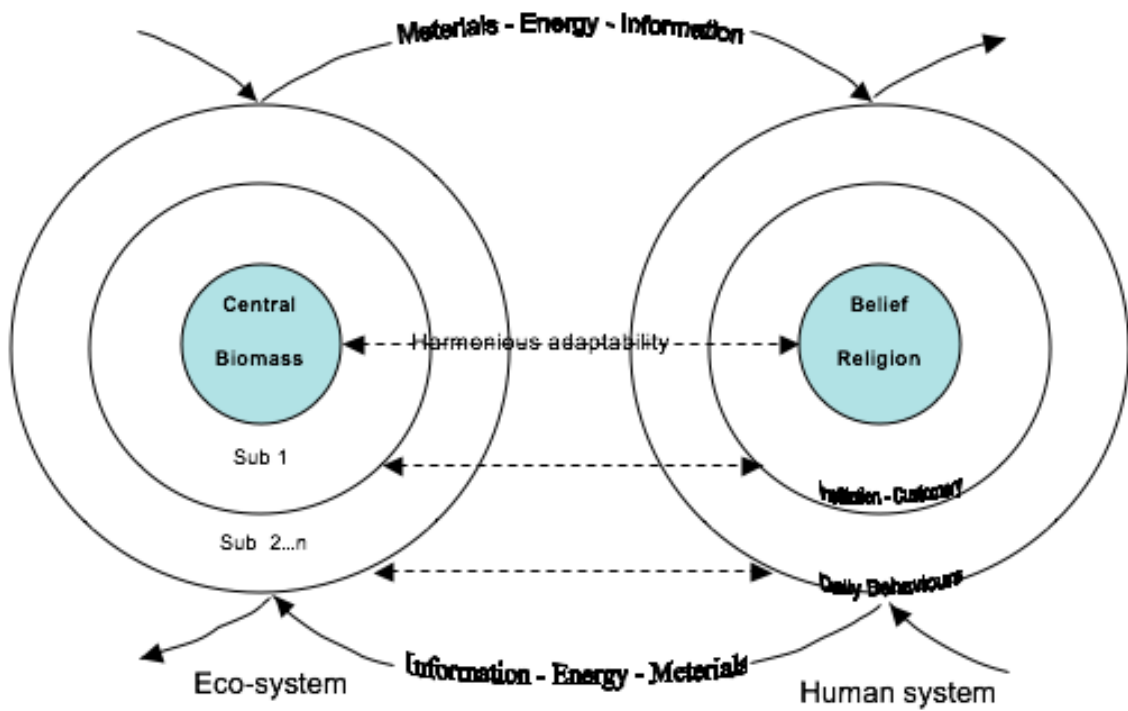
Landscape Nurturing

1. Nurturing the ecological diversity by offering optimal ecological conditions for natural genetic breeding;
2. Enriching spirituality and uniqueness by listening and learning from nature;
3. Facilitating inter-dependence in practicing;
4. Strengthening adaptability;
5. Initiating sustainability;
6. Caring for micro-organic and nutritional cycling;
7. Mulching and Composting;
8. Good habits in Diary keeping and recording;
9. Ecological Product Processing.

⁸ Gravity is the physical force that causes objects to fall to the ground, and water to flow downhill.

⁹ Genetic changes to species: When organisms reproduce, natural genetic changes sometime occur that can give rise to new varieties of a species.

¹⁰ For example: if a tree falls to the ground, leave it to naturally decay. When the tree begins to decay, it creates a new environment for other forms of life like fungi, or worms that eat the decaying wood; other animal will eat the worms, constantly recycling the nutrition. Eventually it all goes into the soil, and creates new soil which can nourish seeds and plants. Plant will grow up and be eaten by animals like cows or goats. The manure from cows and goats will go into the soil. When an animal dies, it too will decay the same as a tree. When a goat dies, the wise farmer will bury it under a tree so the tree can gain nourishment from the goat. The same cycle goes on circling forever from one to another. Nothing is wasted in eco-farming behaviour. The human consumes the produce and the human waste should be treated in some way to make it safe to put back into the soil as a useful fertilizer. Nothing leaves the farm. In contrast, in the industrial agricultural system, there are very big inputs from outside the system, and very big waste of material going out of the system. What you don't recycle in your farm is lost to the system.



Hmong, Thai, san ziu are Worship - Photo by SPERI 2008



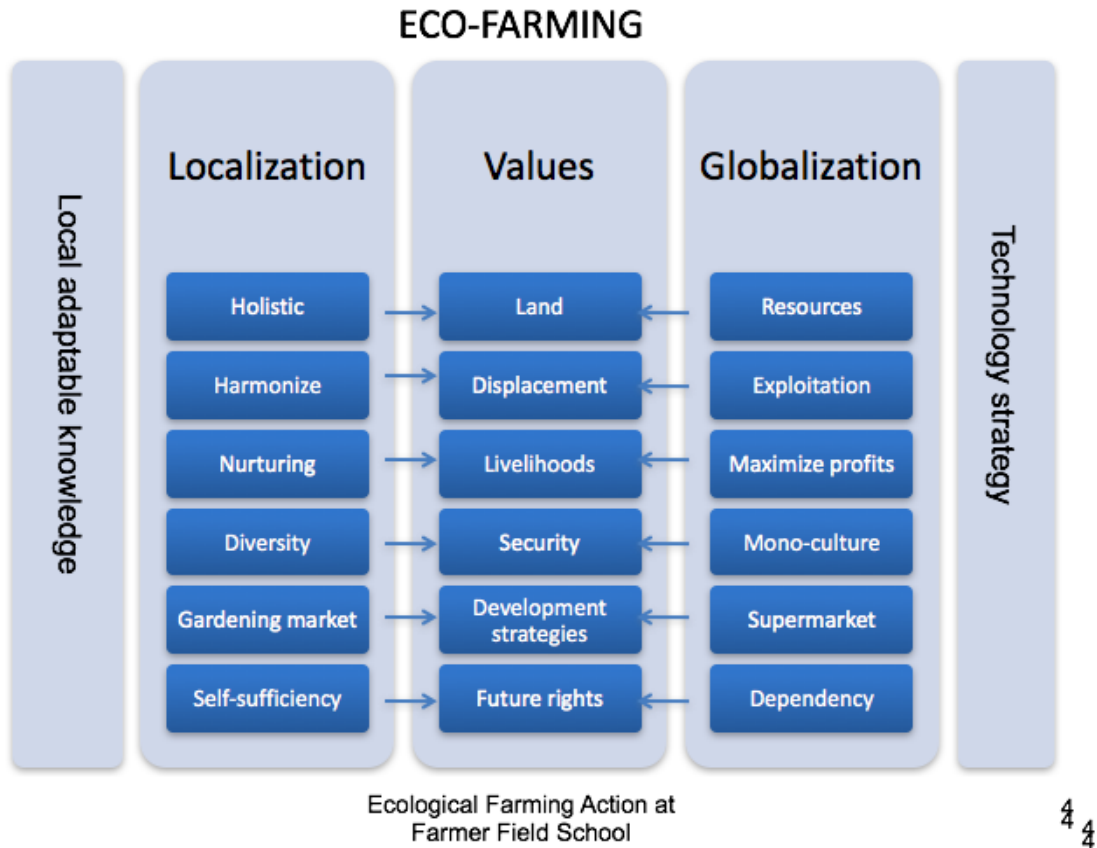
Eco-farming and human ecology theory also distinguishes itself from other agricultural methods as it is also rooted in community development and community well-being. As a result, eco-farming is invested development of local communities in ways that are rooted in community self-determination and livelihood sovereignty. Eco-farming and human ecology theory are rooted in a tested 9-step process for community development and structural poverty reduction as follows.

Nine-step approach to structural poverty reduction and sustainable development

1. Researching and learning languages, customs, religious beliefs, knowledge, and lived experience of the community
2. Closely collaborate with village elders and hamlet chiefs. Link and align the community's customary law with the local authority's official legal system.
3. Create opportunities for meetings between different ethnic minority groups in the process of forming common interest groups
4. Create an environment to enable the community to build capacity to self-organize, self-govern, self-determine, and solve problems for themselves
5. Create legal means and material conditions that are conducive to the community self-organizing towards community development and structural poverty reduction
6. Provide basic conditions and means to enable community to self-examine and self-evaluate internal affairs
7. Organize seminars open to partners, including other communities, government, development organizations, media, researchers, and policy makers
8. Create a learning environment for the study of institutions, models, and examples that allow communities to effective self-governance structures to aid them in achieving their goals
9. Seek new collaborative partners and linking communities with networks and assisting in establishing sustainable community entrepreneurs

Conclusion and Moving Forward

It is incontrovertible that industrial farming has left a lasting impact not only on the global economy and food systems, but has also permanently altered concepts of culture, values, and customary law. It is therefore imperative, as we move towards a new age of development that a holistic approach to farming, spirituality, community livelihood sovereignty, and cultural dignity is at the forefront of leading the charge against industrialization and neo-liberalism. This requires a different set of values and way of looking at the world.



Building upon integrated ecological, human, and spiritual concepts, Biological Human Ecology Theory and Eco-Farming thus have developed 10 values and criteria that are central ecological products.

10 Values and Criteria of Ecological Products

Five Fundamental Characteristic of an Eco – System

- 1) Diversity - Đa dạng sinh thái;
- 2) Uniqueness - Đặc thù;
- 3) Interaction - Tương tác;
- 4) Adaptability - Thích nghi;
- 5) Sustainability - Bền vững.

Five Fundamental Rights of Community

- 1) Right to land and ecology - Quyền tiếp cận hệ sinh thái;
- 2) Right to worship nature - Quyền thờ phụng hệ sinh thái;
- 3) Right to practice - Quyền thực hành tri thức ;
- 4) Right to self-determination - Quyền quyết định trên hệ sinh thái;
- 5) Right to co-governance and management of natural resources - Quyền đồng quản lý quản trị hệ sinh thái.

The philosophy behind the 10 values and criteria of ecological products is the foundation and conceptualization that eco-farmers are not only small-holder farmers and community-based farmers, but are community entrepreneurs. The concept of community entrepreneur is explained as follows:

Community Entrepreneur

Community entrepreneurs are those who professionally nurture and develop the cultivation method that relates to the five fundamental characteristics 1) Diversity; 2) Uniqueness; 3) Interaction; 4) Adaptability; and 5) Sustainability of an ecosystem that have become beliefs in nurturing nature of the community. Accordingly, the community can sustain the five fundamental rights of a human livelihood: 1) the right to ecosystem (basic); 2) the right to nurture ecosystem (unique); 3) the right to practice wisdom and experience on ecosystem (practical); 4) the right to self-reliance and self-determination on ecosystem (holistic); and 5) the right to co-nature ecosystem with neighbors (strategic) that have become the core values and daily behavioral norms in the cultivation method and livelihood identity of the community.

More simply, community entrepreneurs can be defined as brave persons, who can create free spaces to help the entire community develop their creativeness in the moral interactive relations with ecosystem and their well-being.

They are venturesome and ready to sacrifice themselves for the interests of the community. Hence, they are worshiped and respected as spiritual leaders who help the community overcome difficulties, challenges and personal temptations to maintain and develop their distinctive cultural and moral values towards a harmonious, safe and autonomous development. The non-material values created by the community entrepreneurs and their community are towards ecology, society, safety and well-being of all living things.

The capital created by the community entrepreneurs is basic and fundamental non-material values to decide the meaning and quality of life based on the five fundamental characteristics of an ecosystem and the five fundamental rights of a human livelihood.

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ANNEX

French Farmer Movements (prepared by Oliana Quido)

BACK GROUND

Some useful elements to understand the French agricultural context:

After World War II in France, the agricultural system shifted from family-based agriculture to industrial agriculture. To overcome food shortages due to the war, the government supported policies aiming at developing productivity. Indeed, the country reached self-sufficiency for food supply in the 1970s. But on the other hand the number of farms had been decreasing very strongly and very quickly (divided by two over twenty years, while the average size of French farms was getting bigger due to concentration of economic power. Nowadays France has about 500 000 farms, about one third being big mono-crop exploitation. French agriculture is now largely intensive and export-oriented.

Such evolution came along with increased competition among farmers. Farmers in 2016 have the most unequal income repartition among all categories of French workers (farmers representing for only 4% of the work-force). The European Common Agricultural Policy (CAP), by prioritizing quantity over quality to increase productivity, even strengthened this tendency of industrial farms growing bigger.

CO-OPERATIVE MOVEMENT AND ALTERNATIVE FORMS OF AGRICULTURE

French farmers eventually realized they were lacking solidarity. They started to get organized locally, through farmers-based initiatives, to re-invent new forms of organization, because they did not trust in co-operative organizations anymore. After the war the government had been supporting some kinds of cooperatives in order to help farmers reduce the costs of productions and increase productivity, but it had suffered the same tendency towards the concentration of economic power and eventually the loss of meaning of members' implication in such organizations.

Therefore, starting from the 1970s, farmers started to gather locally to launch what has been called the “ecological movement”, characterized by a return to tradition, along with a search for innovations, aiming at enhancing social proximity and developing networks. Those movements appeared because of several food scandals (pesticides being found in food), the discovery of professional diseases due to pesticides, environmental contamination... and also by the will to limit population shift from rural to urban areas. Thanks to such movements, French farmers have been able to unite against chemicals use, and they achieved the complete refusal of GMO experimentations (since 1995).

NETWORKING PROCESSES

Networks are thought as an effective way of resisting both economic and political powers, and to increase collective strength. They do not focus only on achieving material needs for farmers, but they also aim at giving a new social (and environmental) meaning to “being a farmer”.

In France, one particularity is that networking started from two entities: from farmers, but very strongly from consumers as well.

- Consumers union: AMAP system (meaning “association for maintaining peasant agriculture”). This “short-circuits” system first appeared in France in the 2000s (based on an

idea from the US, about Community-supported agriculture). The idea is to develop a Nation-wide network (now strongly settled in almost all cities in France) through consumers union passing a contract with one (or several) local producers to ensure seasonal planning. This movement strongly supported organic agriculture, and now more and more going into agro-ecology.

- From the farmers side, France now counts with a great number of networks, specializing on different aspects of agricultural issues, and getting organized at different levels:

Historically the first to develop was focusing on the promotion of organic agriculture, but today this movement is maybe not the most relevant because in France it is becoming more and more commercial organic agriculture. Some figures about organic farming in France: it concerns about 7% of French farmers, and only 5% of the agricultural land is under the organic label. It is also driven by increased demand from consumers (demand for organic food rising about 10% per year). But because this sector is becoming quite important within the agro-industrial system, and now in competition with organic food imported from different parts of the world and being sold in supermarkets, there is risk that consumers may lose trust in the quality of the products. Rather than going into a costly certification process managed by the European Union, farmers in those networks now try to develop “participatory guarantee systems”.

Other networks more broadly deal with improving the attractiveness of rural areas, in which people can still have a better quality of life, but for now lacking economic opportunities and more importantly access to services and culture for instance.

Another strong movement focuses on access to rights and decent income for farmers, through farmers unions.

Most of existing movements in 2016 are experimenting more on agro-ecology and permaculture

- Rural development (called CIVAM organizations)
- Organic movement
- Access to land (ex “Terre de Liens”)
- Consumers union (ex AMAP)
- Seeds (Kokopeli, “Semences Paysannes”)
- Farmers Union (“Confederation Paysanne”)
- Advocacy against GMO (Inf’OGM)

There are strong interconnections between all of these networks. They are usually organized by territory at the local, regional and finally national levels. They also want to be able to connect internationally, it this is one of the purpose of the CCFD for instance (CCFD-Terre Solidaire, French NGO for international solidarity). Moreover one of the most interesting movements now to my eyes is the farmers union called “Confederation Paysanne” that has been existing for over 25 years now and defending a very holistic – and political – approach of “peasant agriculture”, defending small-holders farmers’ autonomy. It has been very successful in resisting GMO and agro-chemical companies.

It is closely related as well with a very strong international network called “Via Campesina”, created in 1993 (it achieved an international memorandum against GMO back in 2012). The chart refers to six core principles:

- Autonomy
- Quality
- Transmission
- Repartition (leave room for all)
- Local development
- Work with nature.

Traditional Farming Development Strategy Report-backs

Group 1

Solutions and methodology

1. Build consciousness of both producers and consumers
2. Build a network of people who are dedicated to preserving and developing traditional knowledge and farming
3. Change and impact government policy
4. Re-discover and develop cultural and ethnic identity
5. Develop eco-farming techniques
6. Develop culture
7. Develop working eco-farming models
8. Base work in communities
9. Develop and build on foundation of indigenous customary laws
10. Develop alternative economics
11. Develop think tanks
12. Develop support foundations – for financial, material, and labor needs
13. Develop indigenous library banks.

Group 2

Learned about green revolution and red revolution as well as GMO seeds – we need to keep traditional farming methods

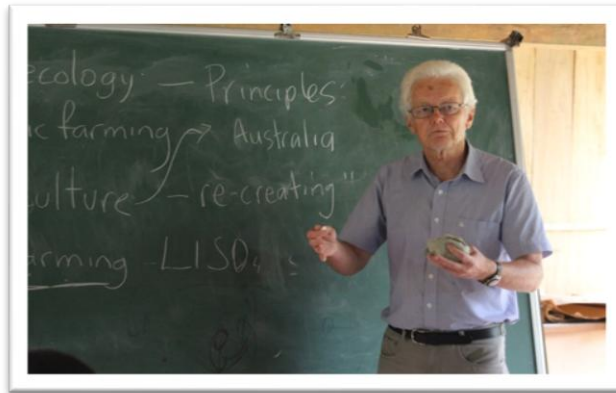
What do we need to prioritize?

1. Need land and land title
2. Indigenous species and seeds
3. Activities on land must be in harmony with nature
4. Biodiversity
5. Organize community
6. Master local knowledge – learn and archive
7. Farming methodology, design, etc
8. Watershed management

How do we do this?

1. Organize community – central to indigenous cultures
2. Understand information and activities pertaining to society today – in order to stay afloat, we need to better share information and lessons learned to bring out solutions and strategies
3. Indigenous knowledge – law and legal structure must recognize
4. Indigenous tree species must be recognized by legal structure
5. Infrastructure to protect and develop indigenous species
6. Establish seed banks
7. Establish mechanisms for lessons learned sharing and archiving knowledge
8. Establish models for ecological farming in local communities and to serve as working models for the work that we do
9. Establish youth movements to collect native species
10. Proselytize and disseminate our work
11. Collaborate with communities and local organizations and government

Photographs from SPERI and HEPA Eco-Farming Workshop, December 25-26, 2016



Dr.Barber comparing different types of Agricultural Practices



Mrs Tran Thi Lanh explaining characteristic of Eco-Farmers



Key eco-farmers discussing 10 eco-farming product principles



Ms.Oliana Quidoz explaining French Farmer Movements



Mr.Daniel Nguyen explaining 10 principles and criteria of eco-farming products

