

ORGANIC FARMING AND THE TRANSITION TO SUSTAINABLE DEVELOPMENT

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Abstract

With the rise in recent years of emerging economies in Asia, domestic demand for organic produce also surfaced and grew rapidly across the region. ASEC -Asian Solidarity Economy Council- a leading resource center on social solidarity economy in Asia, based in the Philippines is actively involved in the promotion of organic farming through documentation, awareness raising, and partnership building.

As a result of the massive use of inorganic fertilizer and chemicals for pest and weed control, agriculture combined with deforestation and other land use has become the second largest contributor to global greenhouse gas emissions. A shift in the farming system from inorganic to organic would accomplish a dual slowing impact on climate change. First, by eliminating the use of chemicals, organic farming reduces the amount of gases emitted to the atmosphere. And second, by making intensive use of plants and trees organic farming sequesters more carbon from the atmosphere naturally. While governments have formally recognized the need to curb climate change and have pledged only recently to reduce gas emissions through the Paris Climate Agreement, people throughout the world have been taking voluntary actions for decades now to advance organic farming with the support of such global networks as the International Federation of Organic Agriculture Movement (IFOAM), URGENCI, World Fair Trade Organization (WFTO), and RIPESS. In the initial years, adoption of organic farming has been most conspicuous in developed countries where customers have the purchasing power to pay for organic produce at a premium price.

Contribution of Agriculture to Climate Change

The Food and Agriculture Organization of the United Nations (UN FAO) reports that agriculture is now a major contributor to greenhouse gases, accounting for 13.5 percent of global greenhouse gas emissions.² Globally, carbon dioxide (CO₂) emissions increased from 1971 to 2004 at an annual rate of 2% with the largest increases in CO₂ emissions for commercial and residential buildings from developing Asia registering at 30% and 42% respectively.³

The key greenhouse gases emitted by human activities are:⁴

Carbone dioxide (CO₂): CO₂ is emitted primarily from fossil fuel use and also from direct human-induced impacts on forestry and other land use, such as through deforestation, land clearing for agriculture, and degradation of soils. Activities like reforestation, improvement of soils, and other similar activities serve to remove CO₂ from the atmosphere.

Methane CH₄: Major contributors to CH₄ emissions are agricultural activities, waste management, energy use, and biomass burning.

Nitrous oxide (N₂O): Agricultural activities, such as inorganic fertilizer use, are the primary source of N₂O emissions. Fossil fuel combustion also generates N₂O.

¹ The author is founder of the Asian Solidarity Economy Council (ASEC), also known as “RIPESS Asia”.

² UN-FAO (2011) “The State of the World’s Land and Water Resources for Food and Agriculture: Managing Systems at Risk”. Summary Report. Rome: FAO , p6.

³ Ramesha Chandrappa, Umesh Chandra Kulshrestha, Sushil Gupta (2011). Coping with Climate Change: Principles and Asian Context” Berlin: Springer International Publishing AG, p 28.

⁴ Source: accessed from <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

Flourinated gases (F-gases): F-gases include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) which are emitted from Industrial processes, refrigeration, and the use of a variety of consumer products.

According to the Intergovernmental Panel on Climate Change (IPCC), emissions from fossil fuel combustion and industrial processes contributed about 78% of the total greenhouse gas emissions increase from 1970 to 2011. Net global greenhouse gas emissions from agriculture, deforestation, and other land use were the second largest contributor, accounting for over 8 billion metric tons of CO₂ equivalent, or about 24% of total global greenhouse gas emissions.⁵

The UN-FAO notes that poor farmers in low income countries are the most vulnerable and the least able to adapt to the increase in risk and unpredictability brought about by climate change – from warming and related aridity, from shifts in rainfall patterns, and from the growing incidence of extreme weather events.⁶

Inorganic Agriculture and Climate Change

Agriculture's contribution to climate change began to increase significantly when agriculture practice shifted from the natural way to chemical based after the second world war. Believing that economic growth will be faster when subsistence communities are integrated into the market economy, governments in developing countries took pains to monetize a greater portion of local transactions and to 'modernize' agriculture. In the late 1960s, new high-yielding varieties (HYVs) of cereal grains were introduced in Asia together with massive investments funded by foreign borrowings from the World Bank for the expansion of irrigation infrastructure, modernization of management techniques, distribution to farmers of hybridized seeds, synthetic or inorganic fertilizers, herbicides, and pesticides. Former United States Agency for International Development (USAID) Director William Gaud was well pleased with the spread of the new technologies and said, "These and other developments in the field of agriculture contain the makings of a new revolution. It is not a violent Red Revolution like that of the Soviets, nor is it a White Revolution like that of the Shah of Iran. I call it the Green Revolution."⁷

The shift to inorganic agriculture aka 'Green Revolution' hastened the integration of subsistence economies into the market economy. Community-based diversified production for local consumption was replaced by mass mono-culture production over vast areas and across territories for the globalizing market economy. The hitherto self-reliant food supply chain was transformed into supplier of a global supply chain.

The consequences of inorganic agriculture were severe: loss of soil productivity, degradation of environment, loss of biological diversity & indigenous knowledge, increased cost of production, & farmer indebtedness. Poverty deepened in the countryside, pushing rural folks to move into cities, or seek work abroad. Chemically altered herbicides and pesticides adversely affected the reproductive system of

⁵ Intergovernmental Panel on Climate Change (IPCC) (2014): Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II & III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. (80 pp, 4.2 M). Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.]. IPCC, Geneva, Switzerland, 151 pp.

⁶ op.cit., UN-FAO (2011)

⁷ Timerime (2012. October 12). Green revolution. Accessed from [http:// timerime.com/es-linea_de_tiempo/138734/GREEN+REVOLUTION](http://timerime.com/es-linea_de_tiempo/138734/GREEN+REVOLUTION).

women manifesting in inability to produce offspring, abortion or arrested childbirth, abnormalities in reproductive cycle and hormone production.⁸

Strategic Actions to Slow Climate Change

One of the strategic actions to stop global warming is to reduce the amount of gases emitted to the atmosphere. These actions include improvements to energy efficiency and vehicle fuel economy (so less energy will be needed per unit of output), increases in wind and solar power, production of hydrogen from renewable sources, biofuels (produced from crops), natural gas, and nuclear power.

It was to slow down climate change that the United Nations Framework Convention on Climate Change (UNFCCC) formally adopted the Paris Climate Agreement in December 2015. More precisely, it's stated goal is to keep the world from warming more than 2°C (3.6°F) above pre-industrial times. The UN Environmental Program's Fifth Annual Emissions Gap Report pointed out, however, that the greenhouse gas emissions reductions countries have pledged so are not enough to meet that goal. The world's cumulative emissions are estimated to reach 52 gigatons by 2030 (from 39 gigatons of CO₂ emissions in 2015) – even if all Paris Agreement pledges are met.⁹ UNFCCC says that in order to keep warming close to the 2°C threshold, the world will have to find a way to cut an additional 25 percent of its carbon pollution.

Clearly, alternative measures to slow climate change are much needed. A complementary approach to reduce gas emissions is to increase the amount of gases that are taken out of the atmosphere. A popular measure that everyone can do is to grow more plants and trees because they "sequester" or absorb carbon naturally. A change in the system of farming is also much needed. There ought to be a shift from inorganic farming, which relies heavily on chemical-based fertilizers and pesticides, to organic and natural farming in order to significantly increase the amount of carbon taken out of the atmosphere.¹⁰

Remarkably, people from all over the world are themselves taking voluntary steps to promote organic farming in their own communities. In addition to sequestering carbon emissions, the benefits of organic farming include: 1) creating more entrepreneurial and new job opportunities for the youth and especially women, organic farming being more labor intensive); 2) promoting more nutritious food that contain less or no pesticide residues, and healthy lifestyle; 3) restoring soil health and natural productivity; and 4) ensuring food security: organic farming can feed an estimated world population of 9.6 billion people in 2050 without expanding the area of farmland already in use.¹¹

Organic Agriculture, Community Supported Agriculture, and Fair Trade

The International Federation of Organic Agriculture Movements (IFOAM), also known as Organics International, is the worldwide umbrella organization for the organic agriculture movement which represents close to 800 affiliates in 117 countries. IFOAM defines organic agriculture as "a production system that sustains the health of soils, ecosystems *and* people. It relies on ecological processes,

⁸ Pesticide Action Network (PAN) Asian and the Pacific (2011). The Permanent People's Tribunal Session on Agrochemical Transnational Corporations: Indictment and Verdict. Penang, Malaysia.

⁹ Brian Kahn (Nov 3, 2016). "The World isn't doing enough to slow climate change". Accessed from <http://www.climatecentral.org/news/unep-report-climate-change-20846>

¹⁰ Mike Amaranthus (2013). Soil carbon- Diamond in the rough. Accessed from <http://mycorrhizae.com/wp-content/uploads/2013/03/Soil-Carbon-Diamond-in-the-Rough-PDF.pdf>

¹¹ John P. Roganold. (2016) "Can we feed 10 billion on organic farming alone?". Accessed from www.theguardian.com/sustainable-business/2016/aug/14/organic-farming-agriculture-world-hunger

biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation *and* science to benefit the shared environment and promote fair relationships and a good quality of life for all involved." IFOAM reports that organic production and consumption is active in 179 countries, with 2.4 million producers, a market of over US\$80 billion, and growing continuously.

IFOAM launched Organic 3.0 consistent with its belief that organic agriculture can significantly contribute to addressing global environmental and social challenges and to achieving the Sustainable Development Goals (SDGs). Organics 3.0 builds on 6 main features: 1) A culture of innovation - proactively combines the best traditional practices with modern innovations. It assesses practice, knowledge and innovation against impact risks and potentials; 2) Continues improvements towards best practices - accountability. for operators along the whole value chain. Continuous improvement covers all dimensions of sustainability: ecology, society, economy, culture and accountability; 3) Diversity of ways to ensure transparency - to broaden the uptake of organic agriculture beyond third-party certifications; 4) inclusion of wider sustainability interests - through proactively building alliances with the many movements and organizations that have complementary approaches to truly sustainable food and farming; 5) Empowering from the farm to the final consumer - to recognize the interdependence and real partnerships along the value chain and also on a territorial basis. It particularly recognizes the core position of small-scale family farmers, gender equality and fair trade; and 6) True value and cost accounting – to internalize costs and benefits of external effects, to encourage transparency for consumers and policymakers, and to empower farmers as partners with rights.¹²

One of the complementary approaches recognized by IFOAM that advance small-scale farming at the global level is the COMMUNITY SUPPORTED AGRICULTURE or CSA. CSA is a local solidarity-based partnership between farmers and the people they feed. Although CSA practice varies from one locality to another and no two CSA farms are alike, underlying all CSA farms is a set of shared values that were first set out in the principles of Teikei, written and adopted by the Japan Organic Agriculture Association in 1978. These values are reflected in the charters of CSA networks in France, England, and across Europe and in the basic platform of URGENCI¹³ -

CSA was first developed in Japan and Switzerland in the 1970s. It then spread in the 1980s to the United States, China, Brazil, Sweden, France and other European countries. In developing countries of Asia, Latin America and Africa, CSA provides a doable and sustainable way of developing local communities, alleviating poverty and empowering people. CSA provides a sustainable solution to the twin problems of population growth and the food crisis which individuals acting independently and rationally cannot resolve. CSA brings together people who farm and people who eat to form communities around locally grown food. CSA can happen when citizens make a commitment to local farms to share the risks and the bounty of ecological farming.

Among the pioneers of CSA in Japan is the Seikatsu Club initiated by women in 1965 as a voluntary association to facilitate the collective purchase of food. With food safety as its goal, Seikatsu Club buys organic food for its members, and shuns genetically modified organisms. To realize its goal, the Seikatsu Club establishes direct relationship between producers and consumers and between people and their environment. As more autonomous Seikatsu Clubs were established in various parts of Japan, the Seikatsu Club Consumers Cooperative Union (SCCCU) was formed in 1967 and currently has 340,000 members mostly women.¹⁴

12 IFOAM Organics 3.0. Accessed from https://www.ifoam.bio/sites/default/files/summary_organic3.0_web_.pdf

13 URGENCI is the international network of Community-Supported Agriculture initiatives fostering peer-based solidarity among CSA actors to actively contribute to the food sovereignty movement worldwide.

14 Accessed from http://www.seikatsuclub.coop/about/introduction_e.html

Another people's voluntary action recognized by IFOAM that promotes organic farming and contributes to slowing climate change is FAIR TRADE. Fair Trade is a trading partnership, based on dialogue, transparency, and respect, that seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, disadvantaged producers and workers - especially in the South.¹⁵ In addition, the World Fair Trade Organization (WFTO) promotes fair trade as a vehicle for promoting safe and healthy working environment for producers, as a means to promote better environmental practices and the application of responsible methods of production, and as a trading system that prioritizes the social, economic and environmental well-being of marginalized small producers and does not maximize profit at their expense.

The Role of ASEC/RIPESS Asia in Promoting Organic Farming

In the initial years, adoption of organic farming has been most conspicuous in developed countries where customers have the purchasing power to pay for organic produce at a premium price. With the rise in recent years of emerging economies in Asia, domestic demand for organic produce also surfaced and grew rapidly across the region. As more of its partner organizations became involved in organic farming, ASEC/RIPESS Asia inevitably took steps to support its promotion in some countries of Asia.

The steps taken by ASEC/RIPESS Asia were the following:

Documentation of best practices: Since the first Asian Solidarity Economy Forum (ASEF) in October 2017, ASEC/RIPESS Asia documented concrete cases of existing organic farming initiatives¹⁶ with the aim of critically assessing their performance in “five critical areas or dimensions”: socially responsible governance, edifying moral/ethical values, contributions to social development, contributions to environmental conservation, and economic/ financial sustainability. The unit of study was largely confined to the project level, social enterprise level, or the integrated supply/value chain level. For lack of adequate resources, ASEC/RIPESS Asia has not been able to document cases at the territorial level where local government units, private companies, social enterprises, and development aid agencies worked together to develop a given territory.

Promoting awareness of and action on common but differentiated responsibilities through social dialogue and education (via forums, conferences, small group discussions, workshops, training courses, etc.).¹⁷ ASEC/RIPESS Asia is not a passive facilitator of social dialogue and education. Using the case studies as resource material, ASEC/RIPESS Asia promotes best practices on the “five critical dimensions” whether at the project level, social enterprise level, or integrated supply/value chain level. As partner organizations assess their own performance vis-à-vis the best practices, ASEC/RIPESS Asia assists them in realizing and acting on the adjustments that needed to be done in order to advance their transition to inclusive and sustainable development.

Partnership building: The socio-economic actors are varied whether one works at the project level, the social enterprise level, or the integrated supply/value chain level. For instance, stakeholders of organic farming include input suppliers, producers, consumer groups, social finance institutions,

¹⁵ Accessed from <<http://www.fairtraderesource.org>> i

¹⁶ The case studies for the 1st ASEF in 2007 (Philippines) were largely focused on Fair Trade. At the 2nd ASEF in 2009 (Japan), the case studies presented included both Fair Trade and Consumer Supported Agriculture (CSA). At the 3rd ASEF in 2011 (Malaysia), the 5th RIPESS International Meeting on Social Solidarity Economy in 2015 (Philippines), and the ASEC/RIPESS Asia Leaders Meeting and SSE-SDG Dialogue in 2017, case studies on organic agriculture (embodying Fair Trade, CSA, and sustainable agricultural value chains) became more prominent.

¹⁷ A copy of the course design for the training on organic farming can be made available to interested parties upon request to ASEC/RIPESS Asia.

distributors/retailers, and other service providers (e.g. government agencies, international donor agencies, civil society organizations, faith based organizations, academes & research institutions). Each stakeholder may have its own frame of reference for measuring performance and impact. The goal of ASEC/RIPESS Asia partnership building is to enable the stakeholders to appreciate the relevance of using the “five critical dimensions” as a common framework for gauging their contributions to the advancement of organic farming and the transition to inclusive and sustainable development.

In sum, the tasks of documentation, awareness raising, and partnership building continues to occupy much of ASEC/RIPESS Asia’s attention. Notwithstanding the limited resources at its disposal, ASEC/RIPESS Asia has built a network of committed actors (i.e. national networks) in India, Indonesia, Japan, Malaysia, Philippines, and Thailand. The challenge that ASEC/RIPESS Asia faces at present is how to make use of these national networks to advance organic farming in other parts of Asia.