Rejoining Gaia: Restore Our Ecosystem Symbiosis

Contributed by Chuck Burr
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This new essay is followed by the great story of Masanobu "One Straw Revolution" Fukuoka.
The first step to solving a problem is admitting to it. To change, use different thinking than what created the problem. How do we get from “our lifestyle is not negotiable” to living a mutually beneficial lifestyle for us and our ecosystem?

The mother of all long-term problems is that our culture has become an “anti-ecosystem.” Humans lived in symbiosis with all life for three million years before the agricultural revolution. Humanity fixed nitrogen, created carbon dioxide, and compost for plants in exchange for food, shelter, water, and air/oxygen.

10,000 years ago, one tribe in the fertile crescent changed history and started living a new story that “the world belongs to man” instead of “humanity belonging to the earth.” This new story lead to our lifestyle today that has ruptured our evolutionarily developed mutually-beneficial relationship with our ecosystem.

Over the long run, how humanity lives with its ecosystem is infinitely more important than any other problem we face. Problems we face today such as the financial crisis and peak oil will affect us and the next couple of generations, but then they are over. Social justice, poverty, overpopulation, and climate change are more symptoms of how we live within our ecosystem.

Because we are living the story that “the world belongs to man,” we can concentrate wealth creating injustice and poverty. We can also populate at will regardless of the affect on all other species. Climate change is a reflection of our thirst for energy and an easy life. All of these and most other problems come from our world view. As long as “our life style is not negotiable” we will never change for the better.

I want to make it crystal clear that our biggest long-term problem is our relationship with our life supporting ecosystem. By long-term I don’t mean 7 generations, I mean 500 generations—another 10,000 years. In seven generations, they will still be cleaning up our mess. If there is to be a 500th generation, we must admit our problem and find a new way or regain an old way of knowing. This is not a question of how will future generations live, but whether there will be future generations or not.

I will use two simple examples to open your mind: history and your body. Every ancient human civilization has failed. And, unless their people walked way before their ecosystem became too damaged like the Mayan did, all ancient civilizations left deserts in their footsteps.

Recently I spent some time in Bosnia and Herzegovina with family. It reminded me of other parts of the Mediterranean that I have visited before. But once I remembered my history, what I was seeing really hit home. There was no topsoil left on the hills. Walking up them to the shrines for “Our Lady” in Medjigorie was difficult; it was almost completely rocky.

What was once old growth forest, was now a rocky savanna. The forests are long gone to smelt metals for the bronze and iron ages or just for heating and cooking. What is now left is a rocky over grazed scrubland that won’t even support olives. You can barley scratch any soil between the rocks with a knife there is so little left. (1)

Our culture reverses the growth of soil. Soil is reproduced from its parent material so slowly that once the topsoil is washed off the land it is, from a practical stand point, permanently impoverished. It takes about 300 to 1,000 years to build one inch (2.5 centimeters) of topsoil under favorable conditions. When seven inches of topsoil is washed away, at

least 2,000 to 7,000 years of nature's work is gone. All of the world's life depends on the fertility of this thin layer of topsoil covering only one-tenth of the earth's total surface.

The laws of natural selection force practically all plants and animals to support the soil building process. No species of plant can survive long on sloping hillsides unless it helped check soil erosion. No species of animal developed enough intelligence or versatility to survive for long unless it tended to support the continued growth of plants and soil. Otherwise it destroyed itself by destroying its primary source of food.

For about 350 million years, the growth of land-based soil and life has increased. And the evolution of plants and animals to higher forms and greater biodiversity has continued until now. This is why I call our culture an "anti-ecosystem;" it reverses what ecosystems build. The "agricultural revolution" should really be called the "symbiosis disruption." In a blink of a eye, our culture has ripped an enormous hole in our ecosystem's food web.

If the earth was your body, you may not know it yet, but you would have several severe or terminal illness. Your diagnosis would be congestive heart failure, AIDS, metastasized cancer, pulmonary fibrosis, plus a fever.

Your body has congestive heart failure because your rivers are polluted and blocked, AIDS because your natural resilience from biodiversity is crashing, cancer because the problem is spreading uncontrollably, the cancer has metastasized because it is now globalized everywhere, pulmonary fibrosis because your forest lung fibers are being clear cut and the air you breath is polluted, and you are running a fever called global warming. In short, if the earth was your body, you would be very sick.

The 2005 U.N. Millennium Ecosystem Assessment reported that, "Approximately 60% (15 out of 24) of the ecosystem services evaluated in this assessment are being degraded or used unsustainably," and "10–30% of mammal, bird, and amphibian species are currently threatened with extinction." If 60 percent of your body was beginning to fail and you were losing 10 to 30 percent of your immune system, you would be rushed to the hospital.

You may say, "I don't think it's that bad." Three points: First, looking back, people do not experience what the world was like for their grand parents or great great grandparents. If they did, they would be shocked. Peter Kahn called this "generational environmental amnesia." We live too short of a lifetime to know how the world has changed. We might remember when the field next door was turned into a subdivision. But we do not remember the old growth forest or the native American family that lived there before it was turned into a field.

Looking forward, I am not talking about the near future. Although, in a few years from now it will become difficult to walk out your door and go "happy motoring." I am defining a long-term problem that affects many future generations. Connect the dots much further out than just your next paycheck.

Third, how can we be so selfish? We have been given the gift of not only life which we should cherish, but also of some semblance of intelligence. Yet we have this enormous lack of empathy for any other species other than our own. We sit back, drink beer, watch TV, and many couldn't care less.

For ten millennia now one tribe's cultural story has grown to dominate all others. The last remaining indigenous cultures are barley hanging on against our cultural onslaught: our technology, our languages, our media, our corporations, our bankers, and our loggers. A few dysfunctional wealthy stand atop the shoulders of the vast majority of people and all other species.

Theologian Leonardo Boff put it this way, “Not only do the poor scream, but also the water, the animals, the forests, the soils: that is, the Earth as a living super organism, called Gaia. They scream because they are continuously attacked. They scream because their autonomy and intrinsic value are not recognized. They scream because they are threatened with extinction. Every day around ten species of living beings disappear as a result of human aggressiveness in the contemporary industrial process.”

Many people are starting to recognize that “something just isn’t right,” and are searching for what to do. The answer is to restore the disruption in our relationship with the ecosystem. If we do this, everything else will eventually fall into place. There is a gray area between our ability to restore the earth and getting out of the way to let Mother Nature do her work. I myself am a permaculturist trying to restore a 140 years of damage to our Ashland farm. With permaculture, we work with nature’s succession instead of against it.

Masanobu Fukuoka developed a system of rice farming and orcharding that involved no cultivation, no chemical fertilizer or prepared compost, no weeding by tillage or herbicides, and no pruning. Once he got “out of the way” of nature his rice and orchard yields matched industrial agriculture's. He was doing anther vastly important thing: he was building topsoil. Each year Fukuoka’s fields became more fertile.

We cannot expect everyone of us to start living like Masanobu Fukuoka today, but for those who are ready let’s start considering a new story -- that “humanity belongs to the earth.” The story we live by is the rudder that steers our culture. Change the story and the culture will follow in time.

An ecosystem is a network of inseparable patterns of relationships and energy flows. Our planet, Gaia, is a self-regulating whole life system. Sunlight is the only input to this closed loop. A life form is what “it does.” The now extinct passenger pigeon was a huge nutrient distribution system. When one of the several mile long flocks of birds that darkened the sky stopped to roost, it left two to three inches of manure nutrients. One flock of millions of passenger pigeons did 300 to 1,000 years of soil building in a few just a few days.

Life is a process -- a sacred spirit-enlivened process. We know this when a loved one is still alive, yet has become simply a body that can no longer relate or respond to us. We know they are gone even before they are dead.

The earth, Gaia, our ecosystem is a sacred place. We are sacred in a sacred place. If we can remember the original story that air, water, soil, oak trees and even mushrooms are just as sacred as we are -- that humanity belongs to the earth, then we will restore our symbiotic bond with our ecosystem. By reforming this bond of love, the earth will be able to heal herself and humanity as well.

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(1) Read Culturequake: The Fall of Modern Culture and the Rise of Earth Culture for detailed examples of civilization-caused ecosystem degradation.

Visit culturequake.org to learn more about Culturequake the book and the online Magazine. ©2009 Chuck Burr LLC

Notes:

Oneida Kincaid(, Another Way of Knowing

Chuck Burr, Culturequake: The Fall of Modern Culture and the Rise of Earth Culture

Tom Dale(, Topsoil and Civilization

P.A. Yeomans(, Water for Every Farm

Peter H. Kahn, Jr., The Human Relationship with Nature: Development and Culture

The United Nations, Millennium Ecosystem Assessment

Leonardo Boff(, Resurgence magazine, November/December 2002

Masanobu Fukuoka(, The One-Straw Revolution: An Introduction to Natural Farming

Natural Farming Greening the Deserts: Japanese Farmer-Philosopher Fukuoka Masanobu

By Yoneda Yuriko

A farming method called 'natural farming' needs no tilling, no fertilizers, no pesticides, and no weeding. For about 60 years, Fukuoka Masanobu, Japan's renowned authority on natural farming, honed methods based on his unique theories, insights and philosophy. His seminal book, "One-Straw Revolution," first published in 1975, has been translated into English, French, Spanish, Chinese, Russian and other languages, and has been read around the world. The book addresses not only the practical aspects of natural farming but also the root causes of environmental deterioration. Fukuoka's thought and philosophy have inspired many people worldwide by pointing out a way of life. Here we introduce his thought and practices.

Fukuoka was born in 1913 in Iyo, Ehime Prefecture, in the southern island of Shikoku in Japan. After graduating from an agricultural high school, he took a job at the Yokohama Customs Office. At the age of 25, however, he was hospitalized with acute pneumonia. The days spent alone became a turning point in his life. After leaving the hospital, he continued to reflect on matters of life and death. One morning, a flash of insight came to him: "There is nothing in this world. No matter what humans try to do, they can achieve nothing. Every thought we have and every action we take is unnecessary." This was the birth of Fukuoka's philosophy, "the theory of the uselessness of human knowledge," or the theory of "mu"

(nothingness).

To demonstrate his theories in practical ways, in 1937 he returned to his native village and become a farmer at his father's orange orchard. In 1939, when Japan's situation in World War II began to deteriorate, he started to work at an agricultural research station in Kochi Prefecture as an instructor and researcher on scientific farming, and continued there until the end of the war. He returned to Iyo in 1947, and continued to work on his unique natural farming system.

When he visited America in 1979 and saw California's desertified land, it occurred to him that his natural farming method would work to green these regions. Visiting American communities working on natural farming, he kept telling people that modern large-scale farming and cattle-raising were causing desertification. During one speaking tours, the head of the United Nations department in charge of combating desertification asked him for technical advice. This was the starting point of Fukuoka's initiative for desert greening all over the globe: in China, India, the Americas, and Africa.

Natural Farming Based on Spiritual Philosophy

Fukuoka's natural farming method begins with the absolute rejection of science. He says in one of his books, "My study started with the rejection of conventional agricultural technologies. I absolutely reject science and technology. My view is based on the rejection of Western philosophy, which supports today's science and technology."

He continues, "Natural farming, in my mind is, in fact, not part of so-called scientific agriculture. I aim to establish a new farming method from the perspective of Eastern philosophy, thought, and religion, moving away from the framework of scientific agriculture." He values not the Western concept, that nature is for the use of humanity, but the Eastern way, that humans are part of nature. Through natural "do-nothing" farming he tries to demonstrate that science is imperfect and unnecessary.

In another book, "The Road Back to Nature," Fukuoka notes, "Dietary abnormality results in abnormality of the body and mind, and affects everything. A sound body comes from healthy food. A sound idea comes from a healthy body." He considers food the most significant factor in human life, and he repeatedly uses the Daoist or Buddhist term "shindo-fuji" in his books, which literally means that body (shin) and earth (do) are inseparable (fuji). That is, humans and the environment are united. When people eat food in season, grown on the very land where they live, their bodies can be sound and in harmony with the environment.

Fukuoka's Natural Farming Method

Currently, most farmers in Japan practice chemical farming using chemical fertilizers, herbicides and pesticides. Recently, however, with people paying more and more attention to food safety, an increasing number of farmers practice sustainable agriculture, through reduction of herbicides and pesticides and/or through the use of organic fertilizers. At supermarkets and retail stores, consumers are able to buy agricultural products bearing the Organic JAS (Japanese Agricultural Standard) logo, certifying that food has been produced in accordance with international guidelines. JAS certification is given to agricultural products from farms which have not used agrichemicals and chemical fertilizers for more than three years.

Is Fukuoka's natural farming just one type of organic farming? Fukuoka rejects scientific farming based on human knowledge. Instead, he has established a farming method that requires as little human intervention as possible. Organic farming, in which people spread organic fertilizers, is different from what he has been aspiring to prove.

Fukuoka explains natural farming: "We can make healthy rice, healthy and rich soil that requires no fertilizer, and have productive soil without tilling if we just accept the fact that excessive efforts--tilling, application of either organic, chemical fertilizers, or pesticides-has never been necessary. A farming method that develops the conditions under which people do not have to do anything--this is what I have been pursuing. After thirty years I finally came to the point where my natural farm could yield, without any effort, virtually as much rice and wheat as typical scientific farms."

Japan For Sustainability Newsletter interviewed Matsumoto Muneo, who has been attempting Fukuoka-style natural farming in Saitama Prefecture, in the suburbs of Tokyo. According to him, a few farmers are now practicing "natural farming" across Japan. But there is no set definition of natural farming as each person approaches it in his own way. Having learned natural farming from Fukuoka, they have adapted it to their circumstances. Fukuoka's natural farming could be described as the prototype, or at least one of the sources of a stream.

The principles of Fukuoka-style natural farming are no tilling (cultivation), no fertilizers, no pesticides, and no weeding. Although "no tilling" may be a difficult concept for ordinary farmers to understand, Matsumoto explains that "Tilled soil easily dries out." He continues that the application of fertilizers, including manure, overprotects plants. By contrast, plants without fertilizer can grow to be robust and tasty. Regarding the principle of no weeding, he cuts weeds when they bloom, instead of pulling them out. And the mowed weeds, laid flat on the ground, keep soil moist in summer and warm in winter; eventually they decompose into natural fertilizer.

Moreover, Matsumoto rarely waters the plants so that the roots search for water and stretch deep. If water is abundant, he says, plants will have shallow roots and become weak from getting water too easily.

When seeding, Matsumoto scatters a mixture of seeds. A plant sprouts only when it best suits the place, and thus he cannot anticipate in advance what will grow where. To those who do not know better, Fukuoka-style natural farms may appear to be untended, with plants growing randomly. Neighbors often despise such farms, thinking that they look disorderly. In this country, where most farms have vegetables growing in neat rows, natural farming may be hard to understand for most people.

An agricultural method that requires no tilling, no fertilizers, no pesticides and no weeding sounds quite easy. But in reality it is not. In his books Fukuoka stressed repeatedly that the "natural" in natural farming is different from noninterference. Matsumoto elaborates: "Nature without human intervention just follows its course automatically. However, nature once tampered with by humans will not return easily to its original condition without human intervention." Restoration of the original natural conditions is rather difficult to accomplish and certainly requires expertise. Fukuoka was able to establish his natural farming method only through repeated attempts and failures, eventually returning his own fields to the natural condition.

The rapidly growing demand for petroleum in recent years is giving rise to conflicts all over the world. In chemical-based agriculture, petroleum is not just the material used to make fertilizers and pesticides but also the fuel to power cultivation machinery. In contrast, natural agriculture requires no cultivators, fertilizers or pesticides. Since it does not depend on petroleum, it is a more sustainable form of agriculture.

Greening of Deserts with Clay Balls

Fukuoka's natural rice farming method is a "no-tilling, direct sowing, rice-barley double cropping" system in which rice and barley grow in the same field alternately in a year, from seeds sown on non-tilled fields. Knowing that bare seeds tend to be eaten by birds, Fukuoka came up with the idea of inserting seeds into clay pellets before sowing them on fields. In general, such clayballs are made by (1) mixing clay, water and various kinds of seeds, (2) removing air bubbles from the mixture as much as possible, (3) forming small, round balls, and (4) drying them for 3 or 4 days.

Clay-coated seeds are prevented from being eaten by birds or insects and also from drying up. The globular shape of these clay pellets makes them hard to break. Clayballs contact the ground with a small area where dew is formed due to differences in daytime and nighttime temperatures, which facilitates the rooting of seeds.

Clayballs are especially suited for sowing in deserts since they require no watering or fertilizers in addition to their low-cost nature. Fukuoka launched a movement for desert-greening with clayballs, and succeeded in greening activities in Greece, India, Tanzania, the Philippines, and worldwide. Although Fukuoka is now retired from the movement, activities that he initiated continue in many countries.

It takes years before the deserts can be transformed into green areas filled with germinating seeds, small plants, vegetables and trees. In other words, it is rather easy to destroy nature, but restoring nature once lost requires tremendous time and energy.

Bringing Nature Back Into Our Lives

After World War II, Japan has expanded economically and become a country that imports materials from all over the world. Even the food, which is essential for our survival, comes from as far away as the other side of the planet. Through this change, Japan has achieved affluence. On the other hand, agriculture is now largely detached from the lives of most people in this highly technological society.

Humanity cannot live without nature. The farmer-philosopher Fukuoka has shown us that natural agriculture allows us to live without the aid of technology. We should never forget that it is nature that sustains our lives. Scattering seeds to bring back nature and agriculture closer to our daily lives may be one step toward a sustainable society.

In 1988 Fukuoka received the Deshikottam Award, India's most prestigious award, and the Philippines' Ramon Magsaysay Award for Public Service, recognized as Asia's Nobel prize. In 1997 he received the Earth Council Award, which honors politicians, businesspersons, scholars, and non-governmental organizations for their contributions to sustainable development. Today, the 93-year-old Fukuoka has retired from the greening movement, and lives a quiet life in his home village, Iyo. His fields are now closed to the public.

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