



## FARM AS ECOLOGY by ALAN CASLINE



Last summer as I cleared maple saplings from a small patch of overgrown meadow, busted up sod and shook out dirt, lined the boundaries of my garden with stones my shovel came upon all in preparing a bed for the seeds I would sow, I became a participant in a human activity deeply rooted in culture and consciousness yet in terms of our historical development newborn. During the thirty-thousand or more generations before the invention of agriculture the earth was only sparsely populated by our species. The settled community made possible by the cultivation of crops and the domestication of animals freed some village folk to pursue crafts and to specialize in providing other goods and services to the community. The growth of population and the growth of cities coincide with each other.

The usual treatment of cultural evolution begins on a continuum roughly dated at 3000 B.C. When plow agriculture became dominant and the nation state developed—but my interest is not in putting cultures on the same time-line. Instead, I address a practical problem. How do you bring a piece of land into productivity? How do you become self-sufficient within a working system that allows earthfolk to live on the land without stealing anyone's future in the process?



Life cycles through us, through the land, but this cycle of cleaning and healing has definite limits. There is a place along the Mohawk River where the water falls into a deep pool worn out of rock. A place called by the native people the pot-that-washes-itself. The pot does wash itself but only so much. The Mohawk River is polluted. You cannot drink the water or subsist on any life found within because of this pollution.

In historic context not every culture has been life-supporting and the overall direction is ominous in it's course. Most of the world's ancient empires derived their strength from using up the natural fertility of the lands they controlled. The soil was mined; irrigated lands became too salty; the forests which had kept the hills from eroding were removed for lumber and fuel. The same is true today. On a world-wide basis more space is transformed into desert and steppe each year than is recovered or newly put to productive use. A central truth of our civilization is that it's economy is self-consuming. In the course of the last generation alone, fully one-seventh of the land surface of the planet has been transformed into desert and wasteland. This is disturbing and when you listen to the United States Department of Agriculture forecasters you become even more disturbed because you find they are blindly intent on continuing the same course.



There are Systems of Survival that are both Conservative and Rejuvenating.



The daily per capita energy consumption of modern industrial society is around 230,000 kilo-calories per person per day, while a society based on the technology of 19th century agriculture uses about 26,000 kilo-calories per person per day. If one were looking for the estimated 50% of energy use that is wasted through current practices of design and management, would not the past be a good place to look? But the past alone is not enough because with very few exceptions, all the forms of agriculture practiced throughout history have been destructive to the land. We need to use the full extent of current knowledge on less energy-intensive ways of maintaining land fertility.

Wendell Berry writes about a farmer measuring a years success in terms of what service has been done the soil, not in how many ears of corn have been grown. Too many modern farmers have less sensitivity to the effects they are having on the workings of nature. Although it can be rightly said that modern agriculture has led to greatly increased yields, it has not led to improvements in the use of energy or in soil conservation. In less than two centuries of modern farming in North America, fully a third of the total topsoil disappeared down muddy rivers and off into whirling dust storms and while mechanization may appear to mean more yield, it has in fact involved an increase in energy input of perhaps 500% for the same yield. There are perhaps advantages to mechanization if you consider the need for less farm workers an advantage, but efficiency is not one of them. Perhaps the most telling fact concerning modern mechanized farming is that it is an "energy sink" requiring the expenditure of four to five calories of energy, mainly of fossil fuels, for every calorie of food produced. Compare this to the primitive agriculturist who gets sixteen calories of food for every calorie of energy expended in growing food, or the wet rice farmer in China who gets fifty calories of food for every calorie expended.

We can be thankful that we don't all work for the USDA and it does seem to me that a turning point has been reached. Technological assistance on a local level means speaking with the farmer down the road to find out how so many strawberries grow on the plants there. Decentralization means not paying for everything with money, but instead becoming part of an economy that includes trade, barter, and shared work. A lot of different understandings are coming together. One of which is that you don't have to ask permission in order to change your own relationship to the world. My own changing understanding is based on a few simple connections.

There are systems of survival that are both conservative and rejuvenating. These systems have been practiced for almost the whole length of planet folk life. And though it wouldn't be possible to wholly adopt one of these systems we could borrow much from them in making ours more livable. Energy intensive agriculture and/or lifestyle is destructive to the earth as well as being excessively expensive. The possibility and responsibility of land-use is something not to be abused requiring continual experiment and rediscovery since we must feed and clothe ourselves.



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The artificial satellites placed in orbit around the earth are boundary stones as well. The cultivated land within is still surrounded on all sides by the wild except that the division is much more clear-cut. As far as we know there is no cultivated land beyond this one small living planet.

Down to earth and from garden to garden, how the land is cultivated differs. Although much of the farming done in the eastern region of North America is still energy wasteful and land destroying, there do exist small islands of settled families and communities scattered about who are onto something different. These forms of land use practice have been termed 'organic' but might as easily be termed conservative. Instead of cutting gardens out of the wilderness, these farmers surround and protect the precious untouched areas with their gardens. Early in the process, organic gardeners concerned themselves with home use, with stocking their own pantry and freezer. The family garden plot has a long history and has provided for the healthy growth of many a child. Problems of scale occur when you expand into larger, field-area cultivation yet most people would be surprised how much food one gardener can supply through farming organically. One who is interested in self-sufficiency, in farming for a living, is faced with some obstacles. Everything seems experimental. The tried and true is what worked last year or the year before last. Seeing a profit come from your farming work hardly seems possible. Working the land can be a creative choice, your mental health may be improved, but if you don't pay your taxes you will lose your property. I don't see many large dairy farms switching from their current methods.



A Central Truth of Our  
Civilization is that it's  
Economy is Self-Consuming.



What I do see is many small-scale gardeners increasing their yields; the new sort of farms being farms of variety. If it is a poor year for one vegetable it is often a good year for another. Through improved methods of contact and distribution the small farmer will be able to reach the consumer. Too many vegetables rot in root cellars between every harvest year. Marketing through coordinated efforts is necessary. Many part-time or full-time farmers can be pooled together to buy in bulk and sell in bulk. This seems to me to be a neglected area. Because there have been no assurances of markets being available it has been hard for people to sink their time, money, and physical effort into any crop production beyond that which is for the home's own use.

We are faced with many demanding questions. Land use is a fundamental one. When food producing destroys land and consumes more in energy than it returns, there is reason for concern. Technology, however, should not be cast as the villain. There are ways of applying appropriate technology to the modern farm. How we use the world and the application of our tools in self-service to our needs is more the province of our culture than it is a given set of relations to necessity. As Carl Sauer has pointed out, "An environment can only be described in terms of the knowledge and preferences of the occupying persons: 'natural resources' are in fact cultural appraisals. Living soil agriculture can become the basis for cultural change only when the livelihood of the many is infused upon living soil as a resource of extreme value. It will be interesting to see how many other cultural value changes will be hooked into that same one. Growing food is not a livelihood that allows one to be stylish or quaint. Doug Jones warns, "Be sure to emphasize that we are not against the use of technology but that we wish to see smaller, more flexible, less energy intensive types of farming."

I am hoping for some sign that the federal and state and local governments are becoming aware of the failure of current agriculture practices to provide for the world's future needs. It is traditional in this country that inventive responses to established methods must be assimilated slowly. I just get tired of running into people who seemingly have no grasp of the nature of current developments in small scale, labor-intensive farming. Kermit Lineecker, manager of Farmers Production Credit Association in St. Lawrence County, is in favor of large, mechanized, fossil fuel, wasteful Dairy Farms. He thinks the small "crop and cow" farms may be doomed to extinction due to the fact that "the inexperienced farmer" cannot adapt to the changing times.

Standing out on the land of a modern St. Lawrence Dairy farm, all you see growing, over acre and acre, is corn. There is some pasture and hay but mostly it's corn. Corn and corn and more corn. This is monoculture and when the banks say the small farm is obsolete, they mean that this one particular form of agriculture requires large tracts of land. The attempts at farming this way on smaller scales often fail. I do understand the giant-size enclosed cab, air-conditioned tractors paraded down the main street of Canton along with the Dairy Princess. "Up with Milk" It will take a whole month to chop one hundred acres of corn. It's real noisy. You have to be out there ten hours a day. You need an enclosed cab with music going on or a radio or something. It's so noisy that some farmers wear ear plugs. Modern farming is supposed to have made the farmer more efficient; actually the farmer is out there slaving just as long. He spends more time fixing machines and sitting on machines and less time planting by hand, hoeing, weeding, and mulching, but his day is just as long.

In my opinion, the next stage of agriculture land-use in St. Lawrence County will be toward diversity. Dairy farming will still remain the major focus but as farming energy costs increase, more and more farms will turn to labor intensive cultivation of smaller total acreage. The definition of a farm will become ecologically based and governmental agencies will become regulators as well as technological assistants in the development of conservation and food productions co-existence.

Western agricultural land will continue to experience water shortages. We now know watertables take as long to develop and represent a resource as precious and essential as soil. The draining of the watertable through overuse in desert areas will not be corrected overnight anymore then you can easily return fertility to where it once existed. The water rich regions of the northeast will become increasingly important as food producing areas. It rains on the forested hills and that water runs down through fertile lands to the sea.

