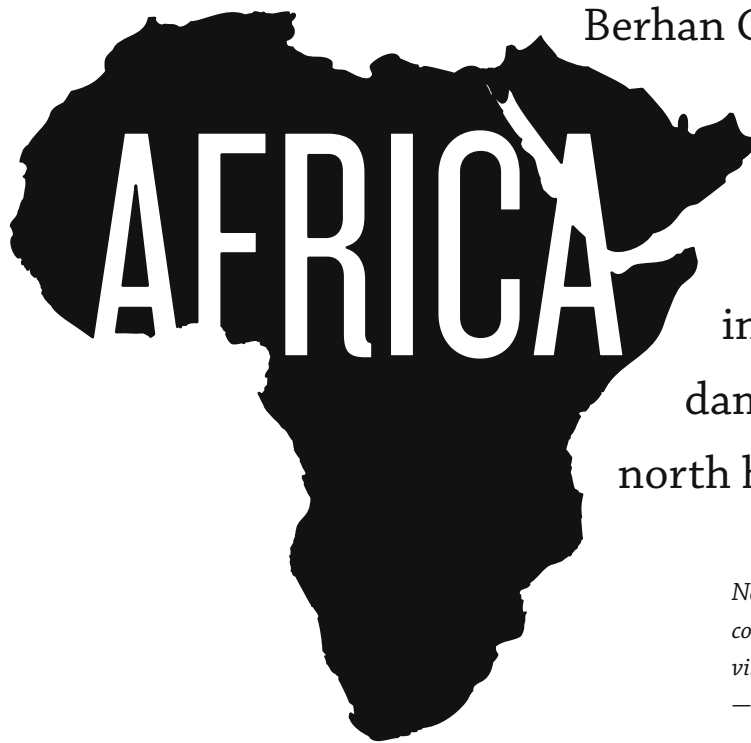


Let Local Communities Continue with Organic Agriculture to Feed Africa

by TEWOLDE BERHAN GEBRE EGZIABHER

Although humans originated in Africa, many of the characteristics that now define human society developed when early cultures were adapting to the adverse conditions of the colder northern countries. Tewelde



Berhan Gebre Egziabher looks at how these developments impact present day agriculture and considers in this global age, the damaging effects a dominant north has on southern countries.

Nobody is a fool so long as he is in his own country, by his own river side, in his own village, within his own community.

— TRADITIONAL AMHARIC SONG

Introduction

The human species is a social animal. This means that, throughout humanity's past, it has been local communities that have used land resources to feed and care for all humans. The fact that these resources are still here is proof that local communities have used them sustainably enough to pass them on to each generation. This is not to say that local communities have never used unsustainable ways of producing food, but it does point out that they have

had considerable experience - about 10 thousand years - in organic agriculture and have thus, through trial, error and success, accumulated wisdom in sustainability-based organic farming. Caution tells us that it is safer to build on these lores than to ditch them in favor of untried fads, however couched the fads might be in scientific jargon.



was the case where seasonality reduced the year-round availability of plant food, would have given men an obviously prominent role in the survival of the family and an advantage over women.

When the societies became agriculturalists, men continued in the dominant role. However, as survival was no longer dependent on the men hunting together, the demise of the local community increased. The

Community Ownership and the Emergence of Privatization

Stone tools, the earliest remains of technological achievements, are found in the Rift Valley of Eastern Africa, the areas of human origin. The path of evolution that gave humans a competitive advantage, that of modifying their environment, enabled them to selectively favor the plants and animals that were useful to them, producing agriculture as they ventured further a field from the Rift Valley. Their efforts to modify their environment gave rise to the construction of shelters and the making of clothing through tanning leather, weaving, etc., and thence to other industries. This meant that the technological frontier kept moving further and further outwards.

Human evolution is correlated with a strong community organization, which subsumed the individual but meant the stronger predator could be defeated and the almost always faster prey caught and killed. Thus community considerations were always paramount. This is not to imply that individual needs could remain unfulfilled, but that the individual was constrained from anti-social activities and, conversely, that the community had to be sensitive to individual needs.

As humans moved ever northwards, the increasing seasonality made it essential for them to stay in their shelters even during the day for increasingly longer periods each year. This can be presumed to have made the family rather than the local community more and more the functional unit of organization and the focus of life.

Hunting was primarily carried out by the men in a group. The increased dependence on hunting, which

state and its associated institutions then took over the functions of the local community. In the tropics the role of the community was not under pressure, but the development of some institutions did indeed also take place, but only as a result of local community initiatives and thus subject to their norms, or as a response to influences and/or conquests from northern regions. These influences and conquests were also instrumental in the demise of matrilineal inheritance and the fall of women into second class membership in society.

To sum up, the northward movement of humans, therefore, produced an incremental growth in science and technology, inequality between the sexes, a prominence of the family, a demise of the local community, a strengthening of state superstructures, and a regimentation of the individual.

This evolution of human society has repercussions on our present day world, as illustrated by the development of innovations and the barriers to their transfer. The differences in the male individual dominated powerful North with strong states, and the local community dominated and weaker South with weak states stand out as incompatible counterparts. Both treat anything communal as a free good, but for opposing reasons and towards opposing ends. Because the North – owing to its strong states – dominates in this era of globalization, legal norms for protecting innovations have been developed for its citizens, but not for protecting the innovations of their Southern functional counterparts, the indigenous and local communities.

Agriculture and Ecosystem Stability

In agriculture, interest is in the maximization of biomass production in crops and/or domesticated animals used for food or for other purposes. Therefore, agriculture reduces the number of species living or growing on the piece of land that has become a farm. In nature, species that grow together often fully or partially exploit different niches of the same ecosystem. In an agricultural monoculture, only one niche is exploited, and all the individuals of the crop or animal species compete absolutely for that same niche, while there remain other niches fully or partly unexploited. Therefore, though in any given season inputs may increase the yield of an intensive monoculture, sustained high productivity over several years is not possible because the ecosystem deteriorates. The hydrological cycle then gets disrupted, often resulting in soil salinization, and even more often in soil erosion (see box 1).

Comment on the state of the world's soil

Salinization is a consequence of irrigation, especially when water drainage is not properly carried out. Therefore, even though it may at first sound counter-intuitive to associate excess salts with excess water, it is the lack of proper drainage that causes simultaneous waterlogging and salinization, and land lost to both is usually lumped together. The frightening figures of 1.5 million to 2 million hectares of irrigated land being lost annually to waterlogging and salinization are quoted in the literature.

— Brown, L. R., and C. Flavin, 1997. Vital Signs, 1997, World Watch Institute: Washington, p. 42.
Pretty, J.N., 1995. Regenerating Agriculture, Earthscan Publications Ltd.: London, p. 126-127.

Soil is being eroded globally at a rate of 16 to 300 times faster than it is being formed. This shows that we are using up nature's investment and investing in death for future generations.

— World Resources Institute, United Nations Environment Programme, United Nations Development Programme and The World Bank, 1998. 1998-99 World Resources - A Guide to the Global Environment, Oxford University Press: Oxford, p. 157.

Recent literature does not seem to deal with the health implications of soil organic matter (humus). This may be because modern authors are so engrossed with agrochemicals for dealing with crop diseases and pests that they do not focus on the natural ecosystem's natural cures. Authors publishing before agrochemicals were as widely used as now do discuss the importance of a high soil humus content and a balanced soil microflora in keeping crops physiologically fit and thus not succumbing to diseases and pests.

— Russel, E. W., 1961. Soil Conditions and Plant Growth, Longman, Green and Co. Ltd.: London
Howard, A., undated. An Agricultural Testaments. The Other India Press: (Reprinted. First published in London in 1940), p. 143-174.

But, was it not the agricultural revolution, which was carried out by local communities, that brought about ecosystem instability and a fickle agricultural ecosystem? Yes, but the very same local communities practice mixed farming and have also devised many other ecological techniques of compensating for these deficiencies. Combinations of their methods keep the soil's humus content and fertility high, and the crops healthy and thus resistant to diseases and pests.

Placing Agricultural Ecosystem Components on the Market

Industrial agriculture tries to produce a homogenous environment in every farm, irrespective of the distinctiveness of the pre-existing ecosystem. Therefore, it uses irrigation extensively, even when not needed. It, thus, creates a captive market for pumping and irrigation equipment. It also creates a need for dams and irrigation and drainage canals. It divorces animal production from crop production. Soil fertility reduces quickly. This gives chemical fertilizer companies a captive market. It plants single variety monocultures as a continuum over very extensive areas. These varieties collapse regularly owing to emerging vulnerabilities to diseases and pests. This keeps the breeders who focus on eliminating diversity and producing uniform monocultures employed. It also gives pesticide and herbicide companies a captive market. Both the breeders and suppliers of agrochemicals are now increasingly the same North-based multinational corporations.

To enable corporations dictate how farmers use their seed and the agrochemicals, they patent both. The aggressive push of the patented package marginalizes the farming communities, who are the time-proven breeders of diversity (see box 2). The natural components of the ecosystem are thus replaced by tradable artificial components that are bought and sold in the market.

Assuming that these purchased replacement components can achieve the same level of ecosystem stability as the natural ones they replace, there would still be an objection to them: why pay cash when you can get the same free from nature merely by using a little labour? This is all the more true when rural labour is so plentiful, and there is virtu-

Comment on plant breeding

Plant breeders who produce homogenous varieties for industrial agriculture dispute claims that farming communities are also breeders, saying that they are merely selecting what nature provides. This is indeed true, but it is true not only of farming communities but also of plant scientists. The industrial agriculture breeders need to conjure up a distinction, and they have done this by calling the varieties produced by farming communities 'land races', denoting that it is the land and not the farming community that produced the variety.

However, albeit grudgingly, even industrial agricultural plant breeders are now recognizing farming communities as breeders, separating their contributions from the professional plant breeding as 'plant breeding by farmers'.

— Duvick, D. N., „Plant breeding and biotechnology for meeting future food needs,“ in: Islam, N., (ed.), 1995. Population and Food in the Early Twenty First Century: Meeting Future Food Demand of an Increasing Population, International Food Policy Research Institute: Washington, D.C., p. 221-222, recognizes both as breeders

— Fowler, C., and P. Monney, 1990. The Threatened Gene: Food, Politics and the Loss of Genetic Diversity. The Lutterworth Press: Cambridge, p. 115-139

ally no alternative employment. When it is noted that the suppliers of these replacement agricultural ecosystem components are from industrialized countries, it is clear that, irrespective of the labour consideration, the Southern farming community is

getting into a dangerous dependency and possible eventual elimination.

In fact, the agricultural ecosystem that these purchased replacement components – seed and agrochemicals – constitute is not stable and deteriorates quickly, perpetuating locally insensitive corporate control from afar.

Transitory Quick-Fixes

The corporations often come up with highly simplistic quick-fixes when the market-making fundamental flaws they have created threaten food production. The most recent quick-fix is genetic engineering. This is being championed not as a means of increasing yields by stabilizing agricultural ecosystems, but as a means of producing crops during their degeneration. This would be bad enough, since it lulls us into accepting degeneration until it is too late to reverse it, but it is far worse. So far, genetically engineered crops have been used only to introduce more disruptive factors into the agricultural ecosystem: poison to invertebrate animals in the case of Bt transgenic crops, and universal poison to other plants in the case of herbicide tolerant





transgenic crops. Moreover, it is not lack of good seed that is starving the South; it is global structural defects. Scrapping the Agreement on Agriculture of the WTO would bring money to the Southern farming community and perhaps start to reduce the five hundred year old net resource flow that keeps the North getting wealthier and the South poorer.

On the other hand, implementing the African Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders (see box 3) and the Regulation of Access to Biological Resources would protect the African local community from the predation of its biodiversity, technology and knowledge. In addition, it would foster its development towards an appropriate industrialization that does not have as its dictate only economic growth, but also the steady improvement of the well-being of every African and the African environment.

The African Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders

The African Model Law for the Protection of the Rights of Local Communities, Farmers and Breeders (The Model Law) was endorsed by the Organisation of African Unity's (OAU) Summit of Heads of State and Government in May 1998 in Ouagadougou and re-endorsed in July 2001 in Lusaka. It represents the African position on the protection of local community rights, farmers and breeders' rights and the regulation of access to biological resources. One of its principal objectives was to 'ensure the conservation, evaluation and sustainable use of biological resources, including agricultural genetic resources as well as associated indigenous knowledge, in order to improve their diversity as a means of sustaining the life support systems.'

Can the Local Community Raise Agricultural Production through Organic Farming?

Our experience in Ethiopia enables us to answer this question with a definite 'yes'¹. In 1996 we started working with four local communities in drought

prone degraded areas in northern Ethiopia to find an answer to this question. Each community in the trial developed bylaws to ensure that the management of their land and natural resources was according to the collective will. They decided to restrict free-range grazing to small areas, encouraging grass and trees to cover the rest of the land. They dug trenches to maximize infiltration of water into the soil during the rainy season. They built retaining walls across gullies that had been forming, causing them to fill up with soil from upstream. With improved feed and restricted movement, their animal's produced more dung that could be collected. We showed them how to make compost - the only new technology we introduced. They augmented the regenerating woodlands with leguminous trees, including on the edges of their fields, to help improve both animal feed and soil fertility. Their landscape rehabilitated. Their animals were better fed. Their soil regained fertility. Springs that had dried up came back and more water became available in the dry season. Food production increased. The increase was better than that of their neighbouring communities who used chemical fertilizers supplied by the agricultural extension system. We were surprised as to how quickly these changes happened. In the third year, drought hit the land. Their fields, supplied with compost, were so much better off than those of their neighbouring communities that the Regional government adopted our approach into its extension system. This approach is now expanding fast throughout Ethiopia.

Local communities have always fed Africa using organic systems. Their role has been obstructed by national and global obstacles created in the last three decades or so. Even so they still feed Africa, albeit falteringly. Remove these obstacles, and I am certain that they will feed Africa and with enough spare to meet export needs.

¹ Hailu Araya and Sue Edwards, in press with Third World Network. **Successes in Sustainable Agriculture: Experiences from Tigray, Ethiopia.** Article gives a complete account of the experiment called 'Sustainable Development and Ecological Land Management with Farming Communities in Tigray'.

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