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Resistance to agricultural globalization: Walking south on a northbound train?

"Adiós a las milpas"

This study grew out of an invidious comparison. Together with various colleagues we have been investigating prehispanic wetland agriculture and related activities in the Mexican Gulf Lowlands for some time[1]. We have deduced a system to which we are able to impute ecological diversity, high productivity and considerable durability. As we worked in a succession of wetland locations during the 1980's and 1990's we could not but become aware of the deepening contemporary agricultural crisis. Early on our workers explained to us how it did not pay for them to grow maize. We have since seen ample corroboration of that in studies of the current economy of maize (e.g. Hewitt de Alcántara 1994; Barkin et al. 1990), as well as thoughtful recent media pieces, such as that by Ivonne Melgar (2000), who bids farewell to the milpas, the fields in which the staff of Mesoamerican life has long been grown. Rural poverty has seemed to increase with each field season. Repeatedly young men have confided to us that in so and so many days they will be leaving for an attempt at the northern border.

It may turn out that we were interpreting the prehispanic scene too favorably, but even minimized our reconstruction did not accord with the depressed state of agriculture that we saw around us. The first begged an "interrogation" of the second.

Objectives

Contrarian reflections on "globalization" are frequent now in the popular media as well as in academic literature. Occasionally they break out into the streets, as they did in November 1999 around the meetings of the World Trade Organization in Seattle. We intend to continue such reflections, particularly regarding agricultural globalization, a process that is now policy or at least aspiration in most of the Americas, and with emphasis on Mexico, but references will be made to North America and indeed to other regions - it is difficult to avoid expansive references in an essay on globalization! Actors, conditions and consequences will be considered, as well as various reconceptualizations, which are a form of resistance in themselves, including the contest of paradigms in the study of agriculture. Dichotomies need to be eroded and qualifications attached. We note the various forms of resistance and sample the alternatives proposed. All this will require a synthesis or at least a

[1] Siemens et al. 1988, Sluyter 1994, Siemens 1998.

sampling of the rich, voluminous materials of the 1990's on this subject. We come down finally then on some imperatives, some recommendations and one basic lesson.

The Process of Globalization

The face value of the term is fairly self-evident: the more prosaic, economic aspects of it that are emphasized here involve the gradual removal of barriers to trade and related activities together with the progressive arrangement of a global division of labor.

Common current synonyms include "neoliberalism" and "transnationalization" (Gledhill 1995). Emphases differ in the interpretations:

> *Economists (...) have tended to interpret globalization in terms of the elimination of international barriers to trade; historians and geographers have emphasized the evolution and change of the world system; sociologists have focussed their attention on production and consumption processes (...) consensus has emerged in support of the concept that globalization is developing in the context of a new international division of labor.*[2]

There have been massive economic and political realignments in the Americas before, of course. Hegemonies waxed and waned in prehispanic times. The Encounter forced a vast new redivision of labor. Independence from Iberia and new relationships with other European countries and with the United States realigned production and trade again. Late in the twentieth century a powerful elite of corporate leaders, financiers, international and national bureaucrats are restructuring economies (McMichael, 1996 p. 28, 31). The post war development "project" sought to stabilize world capitalism through a new order in which each state would replicate the modernity of the First World - and the gap between the First and Third World. Now the globalization "project" seeks to stabilize capitalism through global economic management, this time along the lines of specialization rather than replication.

The outlines of such management seem to be taking shape currently in the negotiations over a Multilateral Agreement on Investment (MAI). The premises put baldly: increased trade and investment is the great engine of development. The freer it is and the less trammeled by protective considerations regarding labor and the environment, the better. Increased productivity is the only way to lift people and nations out of poverty, to improve labor conditions and to protect the environment (Corcoran 1997).

The actual applicability of the term "globalization" and the effectiveness of the process is still highly qualified.

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[2] Bonanno et al. 1994, p. 1.

While it is claimed that the world's needs and desires have been homogenized it must be noted that in any "globalized site", such as the Mexico-Puebla-Tlaxcala region, hybrid and multiple trajectories develop. More generally, some 80 percent of the world's people live outside of global consumer networks anyway[3]. There are also some pessimistic things to be said of Latin American prospects in globalized agricultural markets (Llambi 1994). An outward-oriented growth strategy prevails; each country must specialize in production of export items that have advantages in order to increase foreign exchange earnings and facilitate debt repayment. Foreign direct investment is necessary to finance the new technologies that will lead to efficiencies in world markets. If barriers are removed the appropriate trade pattern will ensue. These are the assumptions, but in fact, comparative advantage seems to have little to do with current trends in agricultural markets within the region. There are some grim histories of various commodity groups; as they have become competitive, markets have closed for external reasons. And Mexican trucks are not yet allowed on North American roads - for safety reasons, it is claimed - nor vice versa, in retaliation, regardless of what the treaty envisages.

With the collapse of almost all international commodity agreements, producer cartels and state marketing boards, governments and domestic growers are more than ever at the mercy of the vagaries of the market and the power of transnational corporations. There seems no way back to former import substitution schemes; Latin America must search for a viable place in the emerging world order. "The only realistic option is to achieve increased bargaining power in all economic and political arenas. Contrary to the laissez-faire ideology currently predominant in most of the world (...) the nation-state is the only defense for Latin Americans"[4]. This is resistance to globalization writ large.

In any case the high value agriculture emerging in many "developing" countries has an underbelly of agricultural marginality. Watts quotes Marxist Karl Kautsky, who had already said it all in 1899, "The revolutionizing of agriculture is setting in train a remorseless chase. Its participants are whipped on and on until they collapse exhausted - aside from a small number of aggressive and thrusting types who manage to clamber over the bodies of the fallen and join the ranks of the chief whippers, the big capitalists".[5] The context was different but the effect was similar.

To study globalization, Mingione and Pugliese affirm (1994), is to study poverty, even in the midst of overproduction. Globalization imperils subsistence, and in the long run may well produce starvation.

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[3] Watts 1996, pp. 233-237; McMichael 1996, p. 27.
[4] Llambi 1994, p. 206.
[5] Watts 1996, p. 230.

Renditions of Globalization

Commentators in the media have expressed their disquiet in many images. The market is drawn as a horned biblical god in a business suit. Someone quips that a rising tide is sinking all boats. The Western Hemisphere is a great shark's mouth that is devouring the rest of the globe. Developing countries face a juggernaut. Are those that resist not just walking north on a southbound train? Recently German Dehesa, a brilliant wordsmith who is given regular space in LA REFORMA, one of Mexico's leading newspapers, said more or less the same thing but with a positive connotation:

> *Sería un poco absurdo crear una liga de enemigos del amanecer; aunque existiera, venturosamente seguiría amaneciendo y la vampirica agrupación viviría permanentemente frustrada. Algo semejante ocurre con respecto a la globalización en estos coléricos tiempos"*[6]

Nemesis

The model chosen for globalizing agriculture, of course, is agro-industry[7]. This is the northbound train on which resisting analysts and participants find themselves walking south. It requires homogenization of production processes, dependence on chemicals, machines and other advanced inputs, an organization of labor similar to that in industry, a measurement of productivity in terms of output per unit area and a de-emphasis of traditional bio-diversity. It has led to the ascendancy of the TNC, the transnational corporation (ConAgra, Cargill, Gruppo Ferruzzi, various Japanese Food TNC's and others); capital has become very mobile and cosmopolitan. This need not be seen as a conspiracy, but in many representations it does take on sinister proportions. It is a matter of seeking cheap labor, land and good transport technology, of whipsawing political entities for "incentives". The TNC, not the state, various authors agree, is the major actor in agricultural research as well as production and trading, the driving force behind the restructuring of the global food system. This primacy is based not only on the sheer magnitude of the capital that is managed but also on the ability to gather and use information regarding weather or market directions and to manage electronic mail more effectively than governmental systems. Agribusinesses can easily exert pressure on agricultural news. Moreover, they increasingly "source" from "have-not" nations and sell to "haves," perpetuating inequalities. Control by any individual nation can be quite effectively eluded. The question arises: if a nation's mandate is to provide food security, is it wise to become dependent on TNC's for food? In Mexico, cultural and environmental damage is likely.

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[6] Dehesa, 2000.

[7] Bonanno 1994; Busch 1994; Heffernan and Constance, 1994; Klein-Robbenhaar 1995; Reisner and Walter 1994.

The TNC should not, however, be described in too monolithic terms. Macrae and colleagues (1993) see a greening in agribusiness, it can move toward "sustainability". *The Farm Journal*, an important publication for North American farmers, has presented many articles to this effect and carried advertising by companies ready to facilitate less aggressive cultivation, for example, or biological pest control, management of agricultural waste and herbicides that are biodegradable. Even the Green Revolution is greening. It brought the great boon of tremendous increases in food production, but mainly benefited entrepreneurial minorities and led to increased dependence on fossil fuels and chemicals as well as environmental deterioration. The network of research centers under the umbrella of the World Bank that were mainly responsible for the original revolution are undertaking new initiatives to investigate the management of resources, to look at agroecology, as well as to push for higher yields[8].

Context

Global Demographics and Food Production

One can go more or less Malthusian (e.g.'s Brown and Kane's "Full House" [1994], *vis-a-vis* Gee's "Apocalypse Deferred" [1994]). A somewhat more evenhanded but still ominous summary can be put together from Brown and Kane (1994), the World Watch Institute (1994) and Wackernagel and Rees (1996). It does seem apparent that rates of population increase are declining but massive actual increase continues. Population and economies grow exponentially but natural resources do not. Limits seem to be at hand in fisheries and rangelands, water levels are dropping in many areas. The backlog of agricultural technology is shrinking; progressive farmers have fewer options for expanding food output. In many countries additional fertilizer on currently available crops has little effect on yields. Densely populated countries undergoing industrialization without a commensurate increase in land productivity are facing a long-term decline in food production. Moreover, rich and the poor are competing unequally for a declining global carrying capacity.

Mexican Specifics

Mexico joined GATT in 1986; subsequent reduction in tariffs strongly affected Mexican producers of various commercial crops, lowering prices while production costs remained high or increased. Rural indebtedness became acute, which Gates has analyzed very effectively (1993). The NAFTA worsened the situation for farmers; tariffs on basic food crops are due to be removed completely over a period of 15 years from the inception of NAFTA in 1994.

[8] Walsh 1995, p. 26.

Competition with producers in many agrarian sectors in North America will be very difficult; many Mexican producers will need to abandon agriculture completely and migrate to urban areas. The rural sector has for some time now been mired in recession, as has been laid out in many sources, as for example a Universidad Nacional Autónoma de México study (La Jornada 1995).

Agrarian policy has been reshaped during the 1990's in order to facilitate globalization - with a minimum of consultation with the representatives of people affected and a lack of consensus (Harvey 1996). Article 27 of the constitution, the legislation covering land tenure, was amended in fundamental ways in late 1991. *Ejidatarios* were given the right to rent, sell or use as collateral their individual plots and communal lands. Private companies were allowed to buy up this land, to certain limits. New associations were allowed between capitalists and *ejidatarios*, and the provisions for land distribution were deleted. Land reform had been ended definitively - a symbolic break with the past, without assurances for the future.

However, there has not yet been rapid reconcentration of land in private hands; the "reforms" had not attracted much private investment as of early 1997; largely, it is claimed, because the process of title certification that must precede such transactions has been slow. Various pressures for privatization still obtain: including the bankruptcy of most ejidos leading sooner or later to sale by agencies holding the debts[9]. Also, there is evidence that young people on ejidos are much less committed to this institution, the prime result of the Revolution, than are their elders; they generally do not see their future in it and hence are less interested in the new structural possibilities than they might be[10].

Pathology

Trends in rural Mexico are now routinely treated very pessimistically. David Barkin is its Jeremiah - a seasoned commentator long concerned about the effects of agricultural modernization in Mexico and a self confessed defender of small farming communities[11]. He notes how Luis Téllez, Under-Secretary of Agriculture in the government of Carlos Salinas de Gortari, indicated the governmental intention to encourage migration of 13 million people from rural areas in the 1990's. They were considered redundant and a drag on progress, to be neglected financially, beyond temporary relief.

Barkin notes further how a pro-NAFTA policy will push a select group of farmers into export production and disadvantage the rest:

[9] Mexico & NAFTA Report/Latin American Report 1997, p. 3.
[10] Stephen 1993, pp. 14-15.
[11] Barkin et al. 1990, p.xi; Barkin 1995; n.d.; Barkin et al. 1997.

> *The remaining millions of farmers, whose plots are too small and/or whose land is of marginal quality, will be isolated from the institutional and financial supports that allowed them to continue to farm in the face of unfavorable market conditions (...) the country can ill afford the effects of a narrowly defined program such as the one presently being implemented. The environmental, political and social problems that another massive rural-urban migration would occasion are beyond the capabilities of the system to manage.*[12]

Mexico's "National Forum for Food Sovereignty" has outlined the nutritional implications of neoliberal policies and unprecedented reliance on imports. Much of that imported food is contaminated. People are abandoning traditional foods and eating junk food. Malnutrition has reached dramatic levels, particularly in rural areas (National Forum for Food Sovereignty 1996).

If one considers the people of what might be called Greater Mexico, particularly the many Mexicans who work in the agroindustry of the United States, the pathology of contemporary rural Mexico is not ameliorated, as these migrants hoped, but projected. Vincent has written eloquently about these "invisible poor" in California (Vincent 1996). There are evidently about a million farm workers in that state, 98% of whom are Mexican; they are mostly young and have their families with them; for various reasons they are statistically invisible in calculations of poverty in California. They have a strong work ethic, strong aspirations for improvement, for stable homes and communities, and yet, by a number of indicators: income, educational levels, community facilities, they are poor. This too must be kept in view in an analysis of globalization.

The Mexican ecologist Victor Toledo and his colleagues outlined the pathology of Mexican agriculture some years ago (1989). The assessment is ecologically articulate and hardly out of date, unfortunately. Mexico has imported and promoted too few and improper, especially North American, models. There has been insufficient ecological and cultural sensitivity, too much promotion of specialization and regional concentration. Animals have been backed, rather than plants; the "traditional" has been neglected and little concern has been given to environmental deterioration. Industrialization has proceeded at the cost of the rural sector. The rural sector, in turn, is polarized between modern, commercial agroindustry and the "traditional" peasantry, i.e. the vast majority of the rural people. The latter have, in effect, been abandoned regarding credit and technical help, with only stop-gap aid.

[12] n.d., p.3.

Contested Conceptualizations

Various terms have recently had to be set apart as questionable, as open to redefinition or even deconstruction, but which cannot yet be abandoned. The reexamination is itself a form of resistance.

"Sustainability"

This term often arises in the literature that is basic to this essay in connection with discussions of agroindustry. It is repeatedly judged as not sustainable. An early, defining statement was given by the Brundtland Commission in 1987:

> *[Sustainable Development] meets the needs of the present, without compromising the ability of future generations to meet their own needs.*[13]

Numerous concerns and elaborations have been registered in the interim. "Sustainability" may well be conflated with economic viability or ecological integrity.[14] It is a polysemic term, confusing, perhaps even chaotic; its flexibility promotes contestation.[15] "Sustainability" is in the eye of the beholder, it is socially constructed.[16]

More ominously, one author points out, the discourse of sustainability has become a simulation of concern over the limits of growth and environmental impact that in effect leaves both to go on toward entropy[17].

However, the term does often connote deep concern over trends in the use of resources; just to raise the issue is already a warning, as in reference to the real costs of agroindustrial inputs, the acceleration of urbanization consequent on agroindustrialization, the disruption of rural fabric, and the environmental impact of neoliberal trade and production policies.

A strong argument was recently joined on this last point in Mexico: The president of the Instituto Nacional de Ecología maintained that free trade can stimulate environmental protection by reason of the improved income to be generated[18]. In the *Journal of Agricultural and Environmental Ethics* there was a strong argument that private property, a free market and the negotiation of mutually beneficial arrangements regarding the environment are needed, not public regulation, which soon falls prey to special interests[19].

This was countered equally strongly: private property does not necessarily lead to good stewardship, more likely toward the taking of profit

[13] cited in Redclift 1992, p. 395.
[14] Lehman et al. 1993, p. 127.
[15] Redclift 1992, p. 395; Marsden et al. 1996: footnote 3, p. 369.
[16] Pretty 1995, p. 11.
[17] Leff 1999.
[18] Quadri de la Torre 1995.
[19] Narveson 1995a and 1995b.

and a transfer of investment after despoliation. There is no invisible hand in the market ensuring environmentally sound practices; market prices do not provide objective measures of environmental matters. An economic system based on private proprietorship is not likely to provide legal means to constrain internalization of the social costs of pollution. Regulation is needed to protect the public from unreasonable environmental risk (Smith 1995).

Agroindustry in Mexico is seen as unsustainable by many thoughtful observers; it threatens further grain dependency, malnutrition of the population, and a threat to national sovereignty, and has already shown serious environmental effects: deforestation, desertification, soil erosion, salinization, eutrophication, ground water contamination (e.g. Klein-Robbenhaar 1995).

"Peasant"

This term or indeed the frequent Spanish synonym "campesino" lurks behind "traditional"; they need to be brought forward, to be "reconceptualized".[20] Mostly "peasant" needs to be rescued from binary or dualistic formulations. It has been a prominent "other" in twentieth century anthropology. These people were dependent, conservative, that is highly resistant to change, and usually in positions of economic disadvantage. There were peasants and there were farmers, as there were "traditional" and modern practises. Agriculture was for subsistence or it was commercial. There was a rural world and an urban world, all of which is now "problematized".[21]

Interesting, and most encouraging, are representations that run counter to what has long been accepted about peasants. Gupta, drawing on examples out of India, points to "the experimental and inventive ethic of poor people".[22] Richards has documented something similar out of Africa (1985).

Instead of dichotomies, we now see continua, all sorts of combinations of agricultural and manufacturing work, networks of work places, communities and social relationships mediated by extensive multidirectional migration. Densely settled landscapes that would have been associated with peasantry in the past have now become a jumble of uses and facilities, quite unamenable to inherited locational analysis. They are strong expressions of globalization, as in the densely settled corridor between Puebla and Mexico City.

"Traditional"

> *As a direct result of globalization, we can speak today of the emergence of a post-traditional social order. A post-traditional order is not one in which tradition disappears - far from it. It is one in which tradition changes its status.*

[20] Kearney 1996.
[21] McMichael 1996, p. 45.
[22] 1996, p. 57.

> *Traditions have to explain themselves, to become open to interrogation or discourse.*[23]

Academic interest in "traditional" knowledge is widespread, of course. This interest may be nostalgic or naive, even romantic; it is commonly taken to reflect social and environmental consciousness or even political correctness. It is certainly not difficult to become absorbed by "traditional" ways, especially in the field, as many of us know first hand.

One prominent characterization of "traditional" agricultural practices - by a Mexican scholar - runs as follows:

> *[They have] remote origins, are ecologically adapted, sustainable over long periods of time, and use large amounts of human labor rather than agricultural machinery. [They are] apparently technologically very simple but are, in fact, extremely complex in holistic aspects. They take into account the different elements of the local ecosystems in which they are inserted. Agricultural knowledge is transmitted informally from generation to generation. These systems are also very flexible in their adaptation to market conditions.*[24]

A helpful practical elaboration is provided by Pretty[25]. He distinguishes between "traditional" and "industrial" agriculture in terms of internal and external resources for agro-ecosystems[26]:

The above dichotomies can be seen as extremes of continua. Much that is considered "traditional" is actually part modern, part experimental or locally adaptive, and only part traditional, i.e. passed from generation to generation in a particular cultural context.

Unease over the word "traditional" has various theoretical and practical roots. Max Weber outlined types of social action; in his scheme he distinguished "traditional" from "rational" and indicated the first as being immune to reason.[27] "Traditional" has often been given other negative or ethnocentric connotations. Agriculture so qualified may well be considered highly resistant to change, obsolete, undeveloped and certainly not modern. This judgement has often been made in Western society with respect to various aspects of non-Western societies (González Jácome 1993, p. 141). Nevertheless, the term is still the one that first comes to mind; it is almost unavoidable, even if flagged as doubtful by quotation marks.

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[23] Giddens, 1994 , p. 5.
[24] González Jácome 1993, p. 142.
[25] 1995, p. 10.
[26] derived from Pretty, 1995, p.10 .
[27] Parsons 1937/1949, pp. 645-647.

	"Traditional"	"Industrial"
Energy:	Solar, other energy generated or collected on holding	Dependence on fossil fuels
Water:	Mainly rain and small irrigation schemes	Large dams, centralized distribution and deep wells
Nitrogen:	Fixed from the air and recycled in soil organic matter	Primarily from inorganic fertilizer
Minerals:	Released from soil and reserves and recycled	Mined, processed and imported
Weed and pest control:	Biological, cultural, mechanical and locally available chemicals	Pesticides and herbicides
Seed:	Some produces on farm	All purchased
Management decisions and information:	By farmer and community gathers locally and regularly	Some provided by input suppliers, researchers, extensionists; similar across the farms
Animals:	Integrated on farm	Production at separate locations
Cropping:	Rotations and diversity	Monocropping
Varieties of crops:	Thrive with lower fertility and moisture	Need high input levels to thrive
Labour:	Requirements greater family on farm and hired labour	Requirements lower, mostly hired labour and mechanical replacement of manual labour
Capital	Initially family and community; accumulation invested locally	Initially external indebtedness or equity, accumulation leaves community

Norman Borlaug, a guru of the "Green Revolution" (and since then of biological modification, as well), is to have maintained categorically in 1992 that small scale agriculturalists in the developing world cannot be lifted out of poverty by "so-called 'sustainable' technologies" but rather with modern crop varieties, fertilizer and agricultural chemicals. "Development specialists (...) must stop 'romanticizing' the virtues of traditional agriculture in the Third World."[28]

There are some particularly agreeable statements on this maligned agriculture. Some years ago Gene Logsdon wrote about, "The Importance of Tra-

[28] quoted in Pretty 1995, p. 6.

ditional Farming Practices for a Sustainable Modern Agriculture"; in it he documented his attempt to reproduce a traditional farm, vintage 1940, on thirty acres somewhere in the Midwest of the United States (1984). He engagingly pondered symbiotic relationships, observed dung beetles closely, traced food webs and came down on the importance of *biological efficiency*. He is sharp on economics and scale. Altogether Logsdon makes good contrarian sense in a North American context.

Somewhat later Altieri made a similarly good case, from the south (1990). He sees "traditional" agriculture as sophisticated, that is subtle, complex, not at all naive and certainly wise to the practitioners' world. They are in immediate contact with the physical world and tend to be sensitive to biological and environmental diversity. The knowledge they have acquired shows depth as well as a richness and fineness of discrimination accessible to western scientists only through long and detailed measurement and computation. They often manipulate competent taxonomies, especially with respect to soils, and these often correlate well with scientific taxonomies.

Are these super-agriculturalists? Hardly:

> *Local, or traditional, knowledge is often proposed as a superior form of knowledge as it lies outside science and is seen as representing a closer affinity with 'nature'. However, local knowledge, like scientific knowledge, can be reified, given virtues it simply does not possess...science is not different to local knowledge because it has a superior access to 'reality' but because it is more powerful, i.e. it is able to act over greater distances...local knowledge in traditional agriculture (...) is often 'scientific' but is more intimately related to local environments. However,local knowledge is not always in 'harmony' with such environments and can result in serious degradation.*[29]

Contested Paradigms

Agricultural Science

The numerous dichotomous formulations arising in the previous discussion beg a specific consideration of some basic epistemological alternatives. Institutionally, there are some strong juxtapositions:

> *Traditionally agricultural research, technology development and trade policy have responded to the neoclassical economics criteria of comparative advantage and competitiveness and have emphasized productivity of land and labor without regard to broader long-term institutional variables and criteria (...) concerns for the natural environment and sustainable food production confront the foundations of agricultural research theory and practice.*[30]

[29] Murdoch et al. 1994, p. 115.
[30] Andrew et al. 1995, p. 229.

It has been argued sharply that increased production should not be the central goal of agricultural research, that fostering accumulation undermines its integrity, that pricing does not provide the best guide to efficient use of resources (Busch 1994; Feldman and Welsh 1995). Farmers have had to forsake the values of husbandry and assume those of finance and technology. Husbandry is intimate, traditional, local; there is tension between it and the general or scientific.

The latter is theoretically based, providing objective, generalizable, propositional knowledge; rural people's knowledge, often in the north as well as in the south, is specific and particular, emerging from practical, localized experience. It takes community into account and the sustaining capability of the regional resource base, both human and natural[31].

The "productionist paradigm" is targeted engagingly by Paul B. Thompson in *The Spirit of the Soil* (1995). To the reductionistic measurements of one or another of the elements of agriculture must be added the consideration of stewardship, which is an acceptance of the responsibility of caring for the land, which in turn, is a form of prudence, a way of appreciating the full cost of food. Agriculture needs to be viewed holistically, as part of a larger system, including unoccupied, more or less "wild" nature. Some realization of this is likely to make for "good farmers", as Wendell Berry has profiled them in mostly North American settings in one or another of his various books (eg. 1972; 1981), and as Gene Wilken describes them in Central Mexico (1987).

From the point of view of the subjects of agricultural research and promulgation in developing countries the science of trade-driven institutions may well be alien and distasteful. Always it is the powerful outsider helping powerless insiders. The researcher wants replication and comparison, the agriculturalist is intent on "fitting available resources to changing circumstances well enough to make it through the season"[32].

These two authors also help us beyond some of the dichotomies. "Rural people's knowledge, like Western scientific knowledge, is always fragmentary, partial and provisional (...) [neither are] "unitary 'bodies' or 'stocks' of knowledge. Instead, they represent contrasting multiple epistemologies produced within particular agroecological, sociocultural, and political economic settings." (59)

For the field investigator the bridging of epistemologies requires a leap of imagination, certainly a dialogical approach. Situations conducive to exchange must be organized, the participants must be animated and effective

[31] Andrews et al. 1995, p. 242.
[32] Thompson and Scoones 1994, p. 61.

lead questions must be generated. It is only too easy for the whole effort to crumble into confusion. Rural or "traditional" knowledge is not just something more or less well defined that can be found and incorporated into an existing research or development strategy for better results, it is not just something asked from people or observed, as we have long enjoyed doing, but rather a set of insights arrived at in negotiation, in contest, even in conflict resolution!

A Mexican graduate student recently examined agricultural extension *vis-a-vis* "traditional" agriculture in a Veracruzan community (del Carmen Andrade Limas 1991). She concluded in effect that the technology the agents proposed did not accord with what the people of the community needed. They practiced a production system finely tuned to the local environmental conditions and their economic constraints. They needed help to improve production but could not obtain it from the technicians who did not take ecological and socioeconomic conditions into consideration when giving advice. Here were two solitudes; there are countless other examples of such juxtapositions to be drawn out of rural Mexico; we have come on them often enough in the field.

Pretty would maintain that the essence of "sustainability" lies largely in the local, in the "greater use of local resources and knowledge".[33] Localist studies seem in fact to have proliferated alongside globalization analyses.[34] Globalization crystallizes the local, it situates an entity in a relational field. This seems to have invigorated rural sociology, McMichael points out. It could be added that this has long been a part of human geographical tradition: seeing places in their relationship to the larger scene.

Escobar has some interesting comments in this regard:

> *To think about alternatives to development [we may, perhaps, also read globalization] requires a theoretical and practical transformation in existing notions of development, modernity and the economy.*[35]

He sees that increasingly Third World scholars are rejecting the development paradigm, seeking alternative ways of imagining.

More specifically, it is not a transfer of knowledge to farmers that is needed so much as a recognition of the primacy of the farmers themselves and the importance of local, situated knowledge, which is likely to be complementary to scientific knowledge. Gathering together the view of various scholars - and inserting innovational terms - he affirms that it is necessary to consider subaltern domains:

> *State [dominant] science proceeds by territorializing, creating boundaries and hierarchies, producing certainties, theorems, and identities (...)*

[33] 1995, p. 8.
[34] McMichael 1996, p. 48.
[35] 1995, p. 212.

> *Nomad science stays closer to the everyday, seeking not to extract constants but to follow life and matter according to changing variables. While state science reproduces the world according to a fixed point of view, nomad science follows events and solves problems by means of real life operations, not by summoning the power of a conceptual apparatus or a pre-established form of intervention.*[36]

Escobar is suggesting alternative ways of knowing and studying, and, echoed by others[37], he finds it practiced particularly among indigenous people and, more generally, by women.

Gender

Much of the pragmatic as well as reflective material on resistance to globalization is gendered. Women pose specific alternatives and qualifications; globalization has particular effects on them. Useful reflections have come out of the "developed" and the "developing" worlds:

> *Indigenous women (...) keep alive world views as well as extensive knowledge of their peoples' resources. And women are seed savers. Most often they are the ones who plant, gather, and cultivate the vast majority of their communities' food. In increasing numbers, too, indigenous women are organizing to fight the harmful effects that contact and integration with the outside world have on their families and their cultures.*[38]

Out of a Canadian study comes the conclusion that, "farming is a motherhood thing" (Campbell 1994 p. 215). Household (or family) farming, although on holdings that are comparatively large and highly modernized, is best articulated, this author maintains, under a feminist ethic of care. Maternal thought centers on preservation, growth and acceptability. "Much of the neglect and harm in our society results precisely from our refusal to bend our schedules to rhythms of children's and animal's growth and illnesses or the rhythms of the land" (p. 217). All this is masked by the common contractual model of farm relationship with the wider economy. Certain crops must be grown on certain acres and delivered at certain times.

A U.S. study concludes that the family rather than the family farm is of prime importance.[39] To affirm this means focussing not on the larger corporate units of production that now account for the overwhelming percentage of U.S. national production, but rather on the truly rural sector in which many of the values of North America are still vested. This requires new kinds of data

[36] p. 223.
[37] e.g. Kloppenburg 1991; Feldman and Welsh 1995.
[38] Cultural Survival Quarterly 1991 p. 13.
[39] Friedland, 1991.

gathering and a conceptualization that is not centered on production, to which we have already referred above.

A sobering "Policy Declaration" came out of a Mexican "National Forum for Food Sovereignty" in August of 1996. Together with a pointed review of the critical current Mexican conditions of nutrition, food production and much else already reviewed here in a foregoing discussion, the point is made that these problems of food provision devolve most heavily on women[40].

In 1991 Raynolds reviewed the literature on women and agriculture in the third world (1991). The bibliography is massive, but the review comes down to some basics that parallel much of what has already been said. Export promotion and cheap food policies have marginalized countless peasant households. Off-farm income is needed; the migration of rural Mexican men to the U.S. is well known, but there and elsewhere women also often go after off-farm employment. Cheap female labor is important seasonally and permanently in many agribusinesses, and in other industries as well, of course. Many peasant households have become semi-proletarianized. This means particular stresses for women.

A recent new study elaborates on all of this to very good effect by means of a close look at the lives of women in two Mexican agricultural communities (Preibisch 1996). The study is local indeed, in the sense discussed above, yet is able to give historical presence and authority to rural women on processes that have global proportion.

One of the two communities practices "traditional" agriculture, which yields little beyond the barest subsistence - the conditions outlined earlier obtain, with a vengeance.

Men have emigration as a survival strategy; more and more women emigrate as well, but for those with children or for grandmothers who have had children left with them, this is not an option. Their community and thousands like it have been officially abandoned except for stop-gap aid. They must eke out some sort of a bare living by dint of long hours of hard work, indeed by an intensification of subsistence production techniques, even inventiveness, augmented with some small amounts of money that may be sent by the men who have gone north.

The other community practices commercial agriculture on a modest scale. The benefits of globalization have not yet accrued, in fact they opposite is true: producers are in a classic cost-price squeeze. Profitable commercial production is possible now only on full-scale agribusinesses. The ecological consequences of commercial agriculture under stress can easily be deduced; much of the land on the smaller holdings is being abandoned. The survival

[40] p. 2.

strategy for the men here too is emigration; there might well be jobs for them in agricultural production or processing but most just cannot stand working for the low wages offered. Most of the women of the community cannot leave; they are constrained to accept the low-paying jobs. With jobs many women have gained influence, even power. But they also have a difficult life: they must work and keep up their households, which leads to incredibly long working days, to a lowered lifespan, to stress and psychosomatic illnesses. A good deal of Mexico's current comparative advantage in agriculture is achieved by means of this profound gender inequality.

In the second community, as in the first, remittances from the north help, in fact one informant remarks that, "If it weren't for the United States, I don't know what would happen to us".[41] But there is tragedy and irony here. Many of the women whose men have gone to work in the north have in fact been abandoned. With recent clampdowns along the border and increased insecurity in the surroundings the costs of the venture have risen. Should the man working in the U.S. want to save money to send home he will find that his wages, although many times what he would earn in his home community, hardly cover his living costs. Only through very careful banding together with other migrants and abstemious living can he save money; easy to just give up on it.

The man comes off poorly in such an analysis. Perhaps he should not be labeled too quickly and generally as reprobate. There are aspects still to be considered. An example of more nuanced views of the "Macho" and an analysis of gradually changing male roles has recently come out of a neighborhood in Mexico City.[42].

Resistance

The foregoing analysis, especially the reconceptualization, has already been a form of resistance. Other forms need to be made explicit. This does not seem the place to attempt a review of El Barzon, the Mexican organization into which medium and small-scaled commercial agricultural producers came together to protest their indebtedness (Gotlieb n.d.), nor indeed the even larger subject of organized political or armed resistance. The events in Chiapas, and Oaxaca, and Guerrero, as well as their echoes in the demonstrations on the Paseo de la Reforma and the zocalo of Mexico City, are still fresh in our mind and have been widely discussed. Our essay attempts to provide some background for the consideration of these events and perhaps reinforcement of the resistance to continuing policy.

[41] p. 227.
[42] Gutman 1996.

Masses of more or less ephemeral and upbeat information are easily accessible on out and out resistance to globalization, on alternatives, on expedients. The worldwide web, of course, has many relevant sites. Newsletters flow in - on recycled paper, with imaginative graphics and unpretentious but urgent prose. Examples: *Farm Folk City Folk*; *The Cultivar*; *The Land Stewardship Letter. The American Journal of Alternative Agriculture*, somewhat more formal, is interesting symbolically for its origin - the University of California, but Berkeley, not Davis, one of the important nurseries for agroindustry in the United States. Various other outstanding representations might be cited: a most engaging one comes out of India, The *Honey Bee,* a periodical that details "grassroots" innovations and often features women's thought and input[43]. There are striking reports on new forms of forest, land and labor management in Mexico[44]; examples of sustainable agriculture in the United States[45], and so on.

A mantra of optimism? Perhaps; nevertheless, it *is* encouraging to read that, "For all the bad-news stories, there are signs of an alternative stream of experience".[46] The author's elaboration on this, given his vast network and long field experience, is rather persuasive. Along the same lines: Sanderson (1995) has some very thoughtful reflections on creative ecosystem management; some home truths about change. Macrae and colleagues (1993) see a greening in agribusiness, it can move toward sustainability, as has been noted.

Indigenous Alternatives

It has long been recognized in various parts of the Americas that "indigenous" does not equate to "conservational" or "sustainable". However, chances are First Nation "traditional" practices have much to teach us. We know that from field experience in the Gulf Lowlands, from the accounts brought to us by Mexican graduate students as they studied indigenous systems and from the rich literature, such as various fine pieces in *Cultural Survival Quarterly*, one of the prime organs documenting indigenous life worldwide, and much more, including what has already been said of new agroforestry initiatives.[47]

Among indigenous people one finds "'pockets of memories' (...) the persistent cognitive schemes regarding the evaluation, cultivation and consum-

[43] Gupta 1996.
[44] Bray et al. 1993.
[45] Klinkenberg 1995.
[46] Holling 1995, p. 5.
[47] Bray et al. 1993.

ption of traditional crops".[48] To nurture and record these memories is an important form of resistance.

Subtle resistance

In *Weapons of the Weak*, which is surely a fine title, Scott discusses what "peasants" do to defend their interests between revolts:

> *(...) foot dragging, dissimulation, false compliance, pilfering, feigned ignorance, slander, arson, sabotage (...) They require little or no coordination or planning; they often represent a form of individual self-help; and they typically avoid any direct symbolic confrontation with authority or elite norms.*[49]

Following on from this, Stephen (1993) has interesting material about subtle and pragmatic acts of resistance by *ejidatarios* against the Mexican governmental property certification program pursuant to the tenure amendments of 1991: countless ways of delaying proceedings, of withholding documents, of appearing to comply but actually preventing some of what is considered necessary by the authorities to facilitate agricultural globalization.

One is reminded of the long historical background of more or less subtle indigenous reaction to hegemony in the Americas, over against the puzzled, depreciative and what sounds now like disingenuous descriptions of indigenous people of the Americas by Europeans.

> *Frequently people who are relatively powerless, because their knowledge-systems are devalued, or because they do not wield economic power, resist in ways which look like passivity: they keep their own counsel, they appear 'respectful' toward powerful outsiders, they simply fail to cooperate.*[50]

Principled Resistance

As already implied, agriculture has its ethics. One author has argued that we have an obligation to make agriculture "sustainable".[51] He wrestles with the problem of definition of that term and then points out that persisting in unsustainable agriculture causes harm to people not yet born whereas changes will benefit them. Even if this obligation is set aside, there remains the obligation to increase benefits and decrease harm to the people who already exist.

Such imperatives, as well as the urgency of "stewardship", arises out of the theology of various religious groups. John Paterson, a Ph.D. student in

[48] Nazarea 1996 p. 63.
[49] Scott 1985, p. 29.
[50] Redclift 1992 p. 402.
[51] Lehman 1995.

Geography at the University of British Columbia, has recently completed a massive, careful draft of a study of resistance to globalization - in North America - on the basis of religious belief (n.d.). He reviews the practices of Mennonites, Old Order Amish and Hutterites, but concentrates on neo-calvinist dutch farmers in Alberta, Canada. He follows the farthest roots of their theology and minutely examines resultant practice. He finds that these farmers consequentially pursue alternatives to agro-industrial techniques when they have determined that this or that is not in accord with the tenets of their faith. (An ironic question that Paterson raises along the way is used in our subtitle: Does all this make an appreciable difference? Are we walking south on a northbound train?) The favorable results are in fact amazing.

At first sight this seems about as exotic an example of resistance to globalization as one could imagine. Such principles, and means, seem out of the reach of most rural people in this world. And yet, if one considers ancient spiritual bases of land use among indigenous peoples in Latin and North America, the neo-calvinist dutch farmers of Alberta are no longer quite so exotic.

Conclusions

In the literature reviewed there is often a sense of urgency:

> *Across the world, an alternative information campaign is urgently needed. Such a campaign would fight the advertising onslaught of the agricultural chemical companies, draw attention to the long-term consequences of inappropriate development projects, and warn of the dangers of moving away from the subsistence economy.*[52]

There are various more specific, Mexican imperatives.[53] Peasant agriculture needs to be intensified, not any longer as in the "Green Revolution" and not according to North American models, but perhaps European (or one might add, Asian) models, which would be more congruent with autochthonous conditions and practices. Small holdings remain important, perhaps in the context of community based tenurial shells, which have deep indigenous roots in Mexico and various other regions of Latin America, and which have proved advantageous contexts for alternative agricultural production.

Rural Mexico's abundance of labor, ecological complexity and depth of "traditional" knowledge must be accommodated. When put straightforwardly like this, it seems idealistic. But the authors detail their prescription and come down to highly plausible final observations in this regard. What is needed is

[52] Goering, Norberg-Hodge and Page 1993, p. 88.
[53] Toledo et al. 1989; Alcorn and Toledo 1995.

a combination of old wisdom and expedients, plus whatever is rational out of modern practice and experimentation.

Further, as Barkin points out (n.d., p. 5) and our own fieldwork corroborates, it is not enough to foster *autoconsumo* but opportunities for paid employment. The rural population is becoming more and more proletarianized. There is a great need for more local, community-based, small projects that build on cultural and environmental diversity and the still rich resources. Agroindustry as now practiced and promoted, Barkin maintains, will shortly become untenable.

Early in this review it became apparent that globalization would need to be "problematized".[54] Moreover, certain key terms needed to be reconsidered, to be put into quotation marks even if they could not be dispensed with, particularly: "peasant", "traditional" and "sustainability". This is largely a matter of qualifying dichotomies. It has been pointed out, for example, that industrial agriculture can and does "green". "Sustainability" is widely aspired to, "regenerative technologies" are being applied within a spectrum of agricultural holdings, from the large to the small, from the industrial to the "traditional".[55]

In our own academic realm there must be altered ways of conceptualizing agriculture and investigating it. We need to free ourselves of long habits of deduction and become more prepared to induce, to allow the local to surround us, to take full account of the feminine perspective and to take a more seasoned perspective on the male as well. In designing our investigations systematic considerations must be made, of course, but, having left the city, we can begin almost anywhere, in fact we do not need to leave the city at all, as the literature on urban agriculture now makes very clear.

Recurving to the curious datum plane of this review, the investigation of prehistoric wetland agricultural systems. We have often expressed the hope in grant applications and elsewhere that our investigations would have some practical significance, that some of the ancient favor could be realized again, that we would be able to make some actual recommendations for the enhancement of production in the regions in which we worked. However, the relevance of the one to the other is not direct. In the Mexican Gulf Lowlands there are great differences between the socio-economic context of today and what we can reconstruct for the time of the use of the planting platforms and canals. Furthermore, most of the terrain patterned with their remains - still potentially the most productive land in the lowlands of today - is not accessible to those who would like to till it; it has been in ranches since the colonial pe-

[54] McMichael 1996 p. 25.
[55] Pretty 1995, pp. 1,12.

riod and is likely to remain so. We thus have few immediate, practical suggestions to make on the basis of the prehistoric evidence.

William Denevan, a highly respected student of prehistoric agricultural systems and mentor of all of those who have worked on *raised fields*, has recently argued that there are, indeed, general lessons to be learned from the ancient systems and moreover, that the continuation of the prehistoric in the historic, is in many instances a good indicator of "sustainability" (1995). He leaves room for a qualification similar to our own: "Viable ancient agricultural methods are not necessarily successfully transferable to different times, environments, and cultures"[56] digest.

The agriculture that can be imputed to the prehistoric wetland planting platforms we have investigated, and indeed the antecedent flood recessional agriculture too, together with what could be grown on neighboring hill land during the wet season, and what could be fished, hunted and gathered, will have provided calorically rich staples, plant and animal protein, a wide range of additional nutrients and amenities, as well as what was needed to pay the tribute.

This reconstruction should challenge contemporary policy-makers. In the first instance, it is clear that the protection and non-destructive use of wetlands is advisable; they could well be worked with very productively more or less as they are rather than massively rearranging them as in Mexican or other river development projects and drainage projects. Most importantly, the various ancient productive activities that may be deduced for the wetlands and their immediate surroundings reinforce the importance of agroecological diversity.

In our own field and historical studies in the Gulf Lowlands of Mexico there is evidence of a continuous "traditional" or "basic" agricultural undertone from prehistoric times to the present. Parallel to the main historical economic pursuits of Central Veracruz, for example - through-trade, ranching and commercial agriculture, especially the cultivation of sugar cane - there is another sort of productive activity, involving a multiplicity of plants, animals and techniques and the integrated use of neighboring microenvironments. It is directed toward subsistence and the gaining of a limited surplus.[57]

This is a heritage not to be dismissed. The basic bias of this essay is that room and opportunity must be left for the "traditional".

"Sustainable"? No production system lasts indefinitely, but one that appears to have lasted for centuries must have some lessons to teach in a context in which initiatives frequently wax and wane in a matter of decades.

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[56] Chapin cited in Denevan 1995, p.35.
[57] Siemens 1998, pp. 259-263.

It would be most unreasonable now for anyone to propose potted transfers of historic or prehistoric systems into a contemporary rural context. Actual useful expedients alongside or instead of agroindustry are likely to be complicated hybrids: the old ways, plus some well-considered chemicals and certainly an idea or two from scientists at neighboring experimental stations.

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