A Strategy for Structural Change:
Social Relations and accumulation in Post-Capitalist Societies

David Barkin

RESUMEN:
Uno de los retos más fundamentales para las comunidades tratando de sobrevivir en un ambiente de creciente crisis mundial es implementar estrategias productivas para ofrecer oportunidades alternativas a sus poblaciones y generar excedentes que las permiten mejorar y consolidar sus diversas infraestructuras (socio-políticas, culturales, productivas y ecosistémicos).

Examinando el proceso de transformación entre las comunidades comprometidas con construir sus propias oportunidades alternas, se examinará las estrategias para fortalecer sus procesos locales con proyectos que amplían su base productiva y su capacidad para generar excedentes. Los proyectos examinados están ofreciendo una nueva ruta hacia la construcción de nuevas formas regionales para la gestión sustentable.

ABSTRACT:
In Mexico, as elsewhere in Latin America, rural communities are continually searching for new ways to improve their ability to mange ecosystems as part of their efforts to develop effective livelihood strategies to raise living standards. With a growing discussion of environmental matters and the proliferation of official programs promoting sustainable development in recent years, many communities are realizing the importance of their inherited knowledge and traditions that promote sound ecosystem management approaches. Historically, significant energies were channeled into a struggle to gain control of some land; the rallying cry of the Mexican Revolution, for example, was "Land and Liberty." The potential for raising productivity in traditional communities on the basis of inherited knowledge and local experimentation soon became apparent: during the two decades following the initial land distribution, peasants found ways of doubling the productivity of Mexico's staple crop: maize; even today, while official policy discourages dry land maize cultivation, peasants continue to increase productivity to assure quality food for themselves and for urban consumers willing to pay premiums prices.

This presentation examines a series of local initiatives that support community efforts to improve and deepen their capacity for self-government and to assert their autonomy; these initiatives are explicitly designed within the context of inherited epistemologies of indigenous peoples. In this context, we are working with a model of "sustainable regional resource management" that complements efforts to increase self-sufficiency and diversify productive structures, mobilizing the local resource base and strengthening traditions. By identifying objectives consistent with traditional priorities, and formalizing local systems of knowledge acquisition and generation, we are better able to collaborate with producers to integrate innovations in the realm of production and marketing with collective capacities for organization and ecosystem management.

This presentation suggests the superiority of an alternative to the "capabilities approach". Without denying the importance of human development, the approach adopted here focuses on the centrality of power for communities committed to strengthening their own organizations and mobilizing for sustainable regional resource management for their own benefit. The ensuing results have proved effective in advancing the productive potential of the participating communities which also include a commitment to sustainable ecosystem management practices and the restoration programs to correct the practices inherited from years of neglect. The chapter ends with a strategic proposal for an approach that injects local governance capabilities and rights as central to the debate about promoting the welfare of local communities.

Keywords: New Rurality; post-normal science; Indigenous knowledge; alternatives to globalization; local development.

A Strategy for Structural Change:
Social Relations and accumulation in Post-Capitalist Societies

David Barkin
Universidad Autónoma Metropolitana – Xochimilco
Mexico City, MEXICO

INTRODUCTION

Development on a human scale, solidarity economies, collectivism, are some of terms used by present-day scholars to approach the problems broached by the participants in the International Development Ethics Association (IDEA). This contribution to a philosophical discussion on the "capabilities approach" offers a deliberately contrasting vision to mainstream discussions: while it is true that most participants are concerned and committed to the concept that their "theory that can make a difference in practice," as the editors of this volume have insisted, and that "development should be about giving people more real choices to realize those things that they believe make them human," present day institutions are being reshaped to thwart this process. Addressing the 'development conundrum', we suggest that the fundamental obstacles to human development are related to the inability of individuals and, more significantly, their organizations, to empower themselves; if it is accepted that effective empowerment, both individual and collective, is difficult in today's world, then the absence of serious considerations of power relations in the capabilities approach explains both the reasons why even successful processes of distributing the 'goodies' identified as essential for enhancing individual endowments have not been effective in raising social groups and their nations from the morass of globalized impoverishment. In this light, alternative strategies can only be successful if they directly confront the challenges of assuming control over the management of their human, natural and material resources while also improving their ability to define the limits of their efforts at self-government, specifying the spheres of local autonomy and contacts with national and international markets, so as to avoid an inevitably self-destructive move towards autarchy.

The "focus on the moral complexities of development in a global political economy" raises questions about the forces that are shaping our institutions and the possibilities to carve out spaces in which people can exercise the freedoms that are the "means to other good things that people value and ought to value." As Paul Thompson commented, in the original presentation of this paper, "the capabilities approach broadens the scope of development economics by showing that satisfaction of preferences calls for much more than maximization of personal welfare." This philosophical approach does not, however, confront the structural impediments to the exercise of individual freedoms and the institutional mechanisms that systematically confiscate the labor and resources that people devote to production for the market and transfer these values –in their financial form – to the global centers of economic and political power. Although it does not countenance such behavior, the liberal analysis does not accept the reality perceived by many thinkers in the "Global South" that the multiple processes of monopolization of production, unequal exchange, and proletarian subjugation are inherent features of the free market economy. Their assumption, and those of many of the advocates of the capabilities approach, is that individual "empowerment" and competition among atomistic actors, reinforced by official admonitions against the abuse of monopoly power, are adequate foils to the operation of powerful corporations and cartels. Nowhere in this discourse is there a presumption of the

imperial exercise of power deliberately limiting the progress of nations, although there is a grudging realization that numerous social groups may find their particular conditions affected by the abuse of power or the exercise of market power by unethical corporations or political actors.

In today's world, the challenge is to move beyond the conflicts that oppress most of the world's population. Many peoples and social groups tied together in cross-cultural alliances have abandoned their efforts to eek out a slightly fairer share of the global pie, to search for institutional mechanisms for redistributive justice; this important element in the international liberal agenda cannot respond to their essentialist struggle for "true" justice: the recognition of their right to maintain their autonomy, to self-government and self-determination. This approach to collective, and therefore to individual, self-realization, is not defined for single actors, but rather as participants in collective adventures to maintain and advance their opportunities for advance in the multiple planes of human existence.

In this light, the "development conundrum" is not one that can be resolved by simply raising savings rates or promoting local productive ventures; more accumulation has proven to be a treacherous motor for exacerbating inequalities and even disenfranchisement. Addressing the deficiencies in institutional arrangements to enhance human capabilities might seem like laudable goals, generating new capabilities – renewed forces – for overcoming the obstacles to individual achievement and therefore to social development, as a strategy for economic progress. However, this approach relegates the underlying dynamic of accumulation to a secondary role, as if the basic processes of the monopolistic exercise of power in the political area and the operation of markets can be tamed through the well-intentioned creation of institutions peopled by able public servants committed to promoting individual opportunities and enabling the "free and equal" interplay of social forces.

In place of the struggle to correct historic injustices and carve out "reserves" for non-mainstream activities, many marginal societies are moving to strengthen their traditional activities or forge new alternatives. Rather than always insisting on something new, they are improving on inherited knowledge and productive systems, consulting with sympathetic outsiders to incorporate the latest technological and scientific advances and train their own people to become able innovators and managers. They are cognizant of the need to develop the required knowledge and skills, creating new governance capacities consistent with the demands for negotiating with regional, national and international institutions.

This is no longer simply a struggle to critique the travesties new forms of struggle and resist the worst forms of exploitation characteristic of the existing order. To understand this new dynamic, it is no longer sufficient to evaluate these developments as the rescue of "cultural capital" or adaptive management, as some anthropologists might have us analyze the process. Rather, they involve the deliberate construction of new strategies for the integrated management of political, social, natural, and productive systems. Although they frequently involve "traditional" peoples, they propose constructing bold new societies, freed from the tethers of global political control and proletarian subjugation.

Their proposals for creating viable alternatives require local control of geographic and political space. In the process, they find themselves confronting the powerful forces of military and political control mobilized to defend the emerging globalized order of political and economic

control and centralized accumulation. Their local and regional organizations, mobilized to propose and defend these alternatives, along with movements of national liberation, are being engaged by powerful international armies of repression. New strategies that involve alliances among peoples searching for permissible new responses to the global forces of marginality and exclusion involve the exercise of power on regional and local levels. Individual communities must build coalitions and ethnic groups align themselves with comrades from near and from afar. In today's Latin America (2007), these developments are the order of the day; generally misunderstood in the USA, the turmoil and upheavals in national politics in Argentina, Bolivia, Brazil, Cuba, Ecuador, Uruguay, and Venezuela are not very distant from the somewhat more localized movements in these same countries and others like Mexico. These processes of conflict and accommodation are not all violent and certainly are inspiring new waves of political experimentation and innovation. To be effective, however, they must be accompanied by new processes to assure well-being and preserve diverse cultures and their environments, processes that are capable of confronting the serious attacks from institutions and political systems that will not suffer such impudence from subaltern cultures.

The following text is an attempt to present an analytical framework to introduce one facet of this response. The difficult process of integrating present-day epistemologies into traditional organizations and knowledge systems is generating innovative forms of collaboration and production, of political consolidation and social collaboration. The experiences briefly mentioned in this chapter offer an attempt to explain why it is necessary to expand beyond the improvement of individual capabilities and the exercise of individual freedoms, if societies are to liberate themselves from the globalized straight jackets imposed by international economic integration with its imperatives of "free" trade and markets. The approaches mentioned in the following pages do not deny the importance of individual improvement and self-betterment; nor do they suggest that individuals eschew public programs that offer to assure entitlements to community members. Rather, they suggest the primacy of collective determinations of the worth of their activities and the focus on collective entitlements, assuring the viability of collective processes for individual participation.

Towards a New Rurality

People attempt to develop in direct consonance with their environments and the natural pressures emanating from the ecosystems of which they are a part. This 'animistic' formulation of society finds a complex intertwining of human society and culture that contrasts sharply with the Judeo-Christian traditions that tell of a world in which man was given dominion over the beasts, or, to relate to the images evoked by the ancient epic Tale of Gilgamesh, man was embroiled in the primordial struggle between the kingly civilization and the forests, the source of all evil and brutishness.[1]

This struggle continues even more ferociously in our day, as "civilized" society imposes its desires on subjected peoples around the globe. Although these demands are no longer limited to the taming of the primeval forests and its primitive peoples, many still cherish the idea that technology can harness nature for the benefit of those who are knowledgeable enough to master the planetary forces that have historically limited the advance of humankind. This catechism of

---

[1] See Sinclair; Andrew. 1991. *The Naked Savage*, London: Sinclair-Stevenson.

social control over nature dominates present-day discussions of the role of science and technology in the solution of social and economic problems and underpins the wellspring of optimism that guides long-term planning to this day.

In this framework of social and technological superiority it is no wonder that 'primitive' peoples still living in pre-modern societies are dismissed as irrelevant in the search for new solutions. Their collective traditions that often accord great respect to ancestral memories and to elderly keepers of wisdom are poor substitutes for the gargantuan budgets that can be mustered to collect information and specimens, to systematize information and generate new knowledge. Although there is now grudging recognition of the importance of these primitives' ability to discover the myriad varieties of flora and fauna that still inhabit their lands, to identify their characteristics, and to unlock their secrets. Modern corporations are even realizing that this information and these secrets are valuable commodities for solving current-day problems or curing newly identified maladies; they have found that this information may have to purchased, if it cannot be stolen as was the custom in past generations.

Many scientists now recognize that society has carefully cultivated the accumulation of knowledge of the workings of the natural world through the centuries. Scientists in ancient times developed interesting and innovative solutions to complex problems, sometimes guarding them as cherished treasures by encapsulating them in ceremonial cycles controlled by a local nobility, by burying them in magnificent public works, or by entrusting them to a priest-like caste. Later, we learned, such knowledge of natural forces and planetary beings was also appreciated by local communities worldwide, codified into religious and lay traditions that were passed on through the ages in sacred texts and by story tellers or keepers of 'the word.'

In recent times, this accumulation of vernacular knowledge has been collected by some – anthropologists or ethno-scientists of varying specialties. Some native practitioners have crossed the social lines, training themselves in Western traditions of scientific discovery and technological development, to place their knowledge at the service of other societies. Others have crossed this cultural and political (socio-economic?) line, only to return again to the comfortable folds of their communities, to inject elements of the 'other' into the practice of the traditional. This complex intertwining of cultures and knowledge systems has created concerns about humanity's ability to safeguard all the secrets of the past, as well as the varieties of species that have developed or been cultivated to attend to social and biological needs; these losses, these disappearances, may now threaten our continued existence, as we find ourselves exposed to the fury of new plagues, viruses and bacteria which exact a terrible price on afflicted peoples or natural phenomena that wreak terrible damage in the natural environments on which we have come to depend.

Many scientists have reacted to these changes by insisting on the need to expand our horizons, to incorporate into our knowledge systems and social practices some of the insights inherited from these "pre-modern" sources. A new academic practice is emerging, in which "post-normal science" humbly acknowledges our inherited debt to these numerous traditions.[2] This work has

---

[2] For more information on this work see, for example: Funtowicz, Silvio, et *al*. 1998. Challenges in the Utilisation of Science for Sustainable Development. Commission for Sustainable Development (CSD6). United Nations, NY; Funtowicz, Silvio and Jerry Ravetz. 1993. "Science for the post-normal age." *Futures*, 25:739-755; Ravetz, Jerry.

produced a rich cumulus of understanding about the functioning of the world and the ways in which we might better attend to our own needs and those of the planet without compromising the integrity of either.[3]

In our work in Mexico, we find ourselves collaborating with rural communities who are struggling to escape from the dynamics of social and economic marginality.[4] Like their counterparts elsewhere in the world, many of these peoples are descendents of indigenous communities and peasantries that have been systematically impoverished during the process of modernization and international economic integration. During the more than one-half century since the United States inaugurated its first "development" program 1947 (Point IV), the world has become more polarized and more people thrust into the columns of the poor, even as some of the worst manifestations of poverty, such as low life expectancies and high infant mortality, have been reduced.

The Development Process
Existing models of development are creating poverty among the masses. This process undermines the viability of rural communities, with their rich social and cultural traditions that developed productive systems to assure their basic needs. In rural areas, poverty forces people to abandon centuries-old traditions of ecosystem maintenance, because their search for employment often forces them to migrate from their communities. Now there is evidence that if successful rural management strategies are able to assure better living conditions and higher incomes, the rural poor not only will care for the environment, but also will undertake those tasks needed to protect their scarce natural resources (see note 6).

1996. *Scientific Knowledge and its Social Problems*. New Brunswick, NJ: Transaction Books; Ravetz, Jerry and Silvio Funtowicz. 1999. "Post-Normal Science - an insight now maturing." *Futures*. 31:641-646.

[3] A collection of analytical articles and case studies can be found in: Frey, Scott. 2000. *Environment and Society Reader*. Boston: Allyn and Bacon/Longman. Of course, the World Bank has also produced a considerable body of materials supporting this approach. One of the most prolific writers in this regard is Fikert Berkes; see his collections of essays on the subject or his analytical articles: see, for example, Berkes, Fikret; J. Colding, and Carl Folke. 2000. Rediscovery of traditional ecological knowledge as adaptive management. *Ecological Applications*. 10(5):1251-1262. Berkes, Fikret and Carl Folke. 1998. *Linking social and ecological systems: Management practices and social mechanisms for building resilience*. Cambridge, UK: Cambridge University Press.

[4] Much of the analytical work on this approach on this approach is emerging under the rubric of "New Rurality". In contrast to its connotation in the orthodox circles of mainstream development organizations in the OECD countries and in the ILO, where descriptions of "pluriactivity" are used disparagingly to describe rural socio-ecosystems without a future, in Latin America we use the concept to analyze the creative tendencies of rural peoples to recuperate and reinvigorate waning traditions and debilitated institutions while innovating in the productive spheres to forge alternatives to the rhetorical claim that "there is no alternative" to globalization. For an introduction to this approach, see Barkin, David, 2000. "Overcoming the Neoliberal Paradigm: Sustainable popular development." *Journal of Developing Societies*, Netherlands, Vol. XVI:1, pp. 163-180. (Republished in: Henry Veltmeyer and Anthony O'Malley, (eds.), 2001. *Transcending Neoliberalism: Community-based development in Latin America*, West Hartford, CT: Kumarian Press, pp. 184-204. The Spanish language literature is much more abundant; for a readily available article on the Web, see, for example: Barkin, David, "Ruralidades, Nuevos Campesinos, y Globalizaciones." En: David Preston (ed.), 2002. "La globalización y la movilidad de capital y mano de obra en América Latina rural." Memoria, 3° Congreso Europeo de Latinoamericanistas, Ámsterdam, http://:www.geog.leeds.ac.uk/groups/andes/capital.pdf (Pp. 43-57)

Today's problems have their roots in settlement patterns created during the colonial period (16th to 19th centuries). As the invaders expropriated the best lands, indigenous populations found themselves relegated to increasingly marginal ecosystems. These areas were frequently very different from their original places of settlement, and the natives were obliged to pay tribute to their conquerors, when they were not enslaved. These changes were not new, however, as commerce and war were a common element in even the most ancient of societies.[5] After independence, the indigenous groups continued to be pushed to increasing inhospitable and fragile areas, just as colonization schemes transferred peasants to the tropical rainforests.

Rural communities in general and indigenous groups in particular continue under increasing pressure. Their living conditions deteriorated as their production systems demanded more from the land; they produced crops for human consumption on their rainfed lands, developed handicrafts and other artisan products, and raised animals and horticultural products, including hogs, chickens, fruits and herbs, in their backyards. The most fortunate among them were able to protect their access to other natural resources, such as a lake or river for fishing and to meet their water needs and a forest for wood or hunting. Over the decades, they accumulated a rich experience in managing these resources, developing sophisticated management systems that were integrated gradually into their customary practices. They continued trading activities, among themselves and with others, maintaining and modifying their traditions, adapting them to changing conditions, strengthening their communities and their identity, choosing to protect their most cherished values and practices in each historical moment.

This process is crucial because it incorporates innovation as a permanent part of social practice, a means to maintain and even to reinforce tradition by enhancing customary practices with new materials and techniques that assure the continuity of social and productive processes. One recent example of a change in productive activities to protect a valued tradition among people in one of the ethnic groups with which the authors are working, is the case of women who decorate cloth (unraveling the threads in attractive ways) to make *huanengos*, a traditional blouse open on the sides. They recently modified their techniques to produce blouses and dresses for visitors, because they noted the demand for their skills for decorating Western styles of clothing, without necessarily modifying the way they dress in their own communities.[6]

Nowadays, many indigenous groups are attempting to exert greater control over their natural resources as well as their economic and political life. The communities are acutely aware of the environmental damage that accompanies most development programs and the toll that these efforts impose on peoples and their ecosystems; for lack of alternatives, they find themselves acting as unwilling accomplices in a vicious circle of environmental degradation and immiserating production. As they acquire a greater capacity for self-governance, their social and

---

[5] Bagchi, Amiya Kumar, 2005. *Perilous Passage: Mankind and teh global ascendancy of capital*. Lanham, MD: Rowman and Littlefield; Wolf, Eric, 1982. *Europe and the People without History*, University of California, Berkeley.

[6] Similarly, in another Purhépecha community, a women's artisan group has introduced a technological innovation to produce lead-free pottery in response to market demands, while continuing to make the traditional styles that use the leaded glazes. More dramatic shifts accompanied the move towards certified organic coffee, a process that involved important changes in production techniques and management practices allowing Mexican indigenous producers to command substantially higher prices for increasing volumes of coffee exports.

political organizations have begun to develop strategies to support demands for more local autonomy and productive diversification. Constructing such alternative strategies involves the complex interplay of the traditional and the modern. On the one hand, the accumulated knowledge required to manage local ecosystems is fundamental to identify the possibilities that available resources offer for addressing basic needs while also searching for paths to productive diversification that will permit an advantageous interchange with people in other regions of the country or parts of the world. This latter process often requires alliances with other groups who have privileged access to markets and thereby can assure that the products will receive "fair trade" treatment when sold.

Our research program is designed to confront directly the challenges posed by an international economic system that limits opportunities for poorer social groups seeking to assert their capacity for self-governance. Our work is driven by a deliberate search for strategies that will enable the participants to resist the pressures of globalization by creating opportunities for local self-management and production. Increasingly, communities are becoming aware of the limitations of the prevailing economic model, which, at best, offers the possibility of proletarian employment or, in the majority of cases, informal marginality. The construction of alternative structures for governance, resource management, and production is an urgent task to which they are increasingly turning.

In this chapter, we offer a number of examples in which university based teams were able to identify ways in which it could interact with indigenous groups and other social organizations associated with these communities to help strengthen their collective projects. This experience is based upon the idea that people codify their knowledge systems in such a way as to attempt to manage their environments as well as possible and to produce the goods they need for their own well-being as well as to assure themselves the possibility of improving their conditions.[7] In what follows, we offer examples of how we went about implementing these programs of collaboration, individual cases that illustrate a larger process.

Innovation to maintain tradition
For centuries backyard animal raising has been a central element in a diversified strategy for community consolidation in peasant societies around the world. Transnational corporations have systematically undermined this strategy by imposing new technologies that make small-scale family units uncompetitive and unviable. Genetic selection produced new breeds of poultry and hogs better suited to intensive feeding and factory-like conditions for reproduction and fattening. As a result, they have displaced the traditional races that are more efficient in processing household and small-farm waste streams, but required more time before they could be marketed. In our search for strategies to promote sustainable regional resource management, we found that communities in the mountains of west-central Mexico suffered when their hogs were fattened

---

[7] This approach is elaborated at greater length in David Barkin, 1998. *Wealth, Poverty and Sustainable Development*, Editorial Jus, Mexico City, Mexico, (available at: http://econwpa.wustl.edu/eprints/dev/papers/0506/05060003.pdf) as well as in Toledo, Victor Manuel. 2000. *La Paz en Chiapas: Ecología, luchas indígenas y modernidad alternativa*. Mexico: UNAM y Quinto Sol. A summary of Barkin's book can be found in Harris, 2000, mentioned in Note 10.

with avocados because the butchers in the region penalized the price because the animals did not have a layer of fat!

In fact, a local doctor, one of the contributors to the work on which this chapter is based (Alvizouri), discovered that the fruit actually lowered blood-serum cholesterol levels in people and used this finding to develop a treatment for arteriosclerosis. Our team took advantage of his experience to produce pork with a low fat content. By introducing small modifications in traditional diets for backyard animals, backyard hog raising is being encouraged as a complementary and profitable activity that would strengthen the regional economy and the role of women as a new social force. This project is the result of a systematic search for ways to improve the economy of an indigenous region by focusing on those aspects of the regional economy that are controlled by women and where productivity could be improved with relative ease.

To implement the project, the authors began working with an umbrella group that encompasses about 350 communities and more than one-half million people in west-central Mexico who share a common ethnic heritage (Purhe'pecha, or Tarascan as they were called by the colonial invaders). The research and community work proposed to use local agricultural wastes that lower costs to create a quality product (pork 'lite') for which a premium price could be obtained. Traditional hog raising is still an important part in local Purhe'pecha communities and is being reintroduced in more acculturated villages. The initial effort to develop optimal diets for raising hogs with low cholesterol levels proved successful and the enthusiasm for the new technology exceed expectations. Now, some eight years later, it is clear that the approach has been accepted and the main obstacle to its full implementation will be the need for people from the region to advise and supervise the quality of the diets and the conditions in which the pigs are raised in the backyard stalls.

In retrospect, the proposed innovation is proving relatively easy to implement because of a design that fits it into the existing structure of village life and political organization. Although based on a declining activity (hog raising), the proposed changes are clear to all participants who clearly understood the relationship between diet and animal nutrition; its commercial logic was also compelling, especially within today's precarious rural economy. Because of the focus on an activity that women have historically managed and the declining presence of men who must seek work elsewhere, the project has struck a particularly responsive chord. Furthermore, with a growing awareness of the need to improve sanitary conditions as a result of improving channels of information and concern about health, the project also has created an opportunity to open a discussion of environmental issues, like water quality and sewage disposal and treatment.

As the production of "low-fat pork" moved to the implementation stages, we observed a growing demand in other villages to participate in the new industry. From the perspective of sustainable resource management and popular participation, another attractive feature of the program is its limited scale: the volume of production is inherently limited by the supply of waste avocados. It would not be advisable or profitable to use commercial grade fruit as fodder for the hogs. In this way the authors hope that the communities will avoid the health and environmental problems that are usually associated with large-scale hog raising elsewhere. There is now talk of building a small, certified butchering facility operated by the organization of Purhe'pecha communities,

providing an opportunity to raise the quality of meat available in the region, while producing the low-fat pork products for the specialized markets that they are developing.[8]

An interesting development emerging from the work on 'lite' pork was the discovery of the nutritional qualities of a plant that could be valuable for feeding to hens to produce "enriched omega-3" eggs. The plant, *verdolaga* (purslane in English) was introduced by the Spanish *conquistadores* and spread widely as a weed in humid conditions. It was later incorporated into the colonial diet as an herb seasoned with a green chile sauce to accompany pork; it turns out, however, that it is very rich in Omega-3 and can be readily incorporated into the diet of laying hens, displacing the fatty omega-6 from their eggs, to produce a product that will have less of an impact on the cholesterol of consumers. This nutritional innovation in egg production systems in is part of a larger program to install wastewater treatment plants whose effluent would irrigate the plants and service the poultry. For indigenous and peasant groups searching for ways to diversify their economies and consolidate their social and political institutions, while contributing to improved environmental management, this program is a logical follow-on to the hog project in the central highlands. In this instance, the project does not propose to harness prior knowledge to produce enriched eggs, but rather to exploit a tradition of concern for the integrity of ecosystems in order to introduce a new activity that promises to generate new sources of income for the participants.

These experiences offer a singular window on the development process. Rather than concentrating on individuals and their capacities to participate effectively in regional governance activities, the approach implemented here joins the search for more productive activities with strategies for increased collective capacities to implement programs for the sustainable regional resource management. In the process, the communities are discovering that the participants become active promoters of community programs that increase participation and strengthen the authority of local leaders to implement additional programs. The significant feature of this process is the relationship between individual initiatives and collective decision-making that sanctions and integrates the activities into the collective strategy for regional progress.

Recuperating territory, rehabilitating forests, strengthening traditional societies
Indigenous societies, pushed into the mountains by successive waves of productive expansion by conquerors, now find themselves heirs to valuable resources in the headwaters of river basins, resources that are required for urban-industrial development throughout the world. One of the most notable aspects of the modernization crisis is the growing shortage of water, caused by demographic growth and its improper management and use in urban areas and for the production of goods and services. Heightened by industrial and domestic wastes callously dumped into local rivers and aquifers leaving them unsuitable for social use, the shortages are exacerbated by deforestation and the expansion of ranching and agriculture. Along with problems of global climate change and other ecological phenomena, the lack of water is becoming particularly serious, leading to a desperate search for solutions to mitigate the crisis. Many recent proposals for "sustainable production," based on individual economic rationality and a liberal development

---

[8] For more information on this project, consult Barón, Lourdes and David Barkin. 2001. "Innovations in Indigenous Production Systems to Maintain Tradition." In: Flora, Cornelia, Ed. *Interactions between Agroecosystems and Rural Human Community*. Miami, Fl.: CRC Press; pp. 211-219.

discourse, advancing a "modern" development strategy in which corporations and governments alike do not go beyond a process of "green washing" productive proposals.[9] The sustainability discourse is frequently a camouflage for the capitalist rationale and is tinged with a large measure of bio-colonialism, a strategy in which indigenous and peasant communities in regions of mega-diversity do not participate, except as ecological informants and as objects to be rescued. More recently, however, this strategy has also been an inspiration for alternative approaches, based on the local appropriation of these concepts by peoples conscious of the wealth of inherited knowledge that they can bring to bear to ameliorate environmental problems. These alternative discourses and perspectives have been cultivated mostly in the southern countries, in part by theorists, intellectuals or practitioners working directly with peoples who express their demands in terms of territorial defence, alternative development, autonomy, sustainability and self-sufficiency.[10] The more successful of these proposals are designed from the local point of view, where the inhabitants become the protagonists of the recovery and preservation of their resources.

The model implemented in our Mexican projects draws on a long history of struggle by different social groups and reflection by Southern thinkers who have promoted alternative approaches to sustainability. The basic tenets of this work are: a) the active participation of the local population in the design and implementation of the plans a programs, so that they generate a capacity for self-management and a recuperation of social institutions and cultural identity; and b) the rational incorporation of the ecological diversity into a sound program that contributes to diversifying the local economic base.[11] Thus, sustainability itself is a complex set of ideas that is understood differently as people assimilate the lessons into their own individual ethos. These ideas emerge from a group of theoretical dicta, which are then translated into practice as each community or group of peoples invents and specifies its own rules for participating in regional strategy, processes that are themselves transformed in the daily practice of daily co-existence.

From this perspective, then, people within their own cultures and in interaction with the larger society of which they are a part, constantly experiment with new proposals to strengthen their society and diversify their economy. As they integrate new activities, they design alternatives to prevent them from becoming economic refugees in the national and international urban centres; they also learn how to contribute to the development of their region without sacrificing their dignity, evaluating new activities as they develop new relationships between their own culture

---

[9] Cf. Escobar, Arturo. 1995. *Encountering Development: The making and unmaking of the Third World.* Princeton, NJ: Princeton University Press; Leff, Enrique. 1998. *Saber Ambiental: Sustentablidad, Racionalidad, Complejidad, Poder.* Mexico: Siglo XXI; Utting, Peter. 2002. *The Greening of Business in the South: Rhetoric, Practice and Prospects.* London: Zed Press.

[10] The experience in the communities on the Oaxaca coast revealed that indigenous people define their lives within a specific territory, but not one limited to the immediate surroundings of their homes. Their territory usually extends from the heights of the mountains to the seashore. That is, they require a space that includes a number of ecosystems for their sustenance and cultural integrity. For further reflection on this problem, see Toledo, op. cit., and Harris, Jonathan. 2000. *Rethinking Sustainability: Power, knowledge and institutions.* Ann Arbor, MI: University of Michigan Press

[11] Cf. Barabas, Alicia and Miguel Bartolomé. 1999, "Los protagonistas de las alternativas autonómicas." En: A. Barabas and M. Bartolomé (eds.), Configuraciones étnicas en Oaxaca. Perspectivas etnográficas para las autonomies, Vol. I. Mexico: Instituto Nacional Indigenista, Instituto Nacional de Antropología e Historia; Regino, Adelfo. 1999. "Los pueblos indígenas: diversidad negada." Chiapas 7. Mexico: Ediciones Era. See also: Barkin, 1998, op. cit.; Toledo, 2000, op.cit.; Leff, 1998, op.cit.

and the other, dominant one. It enables them to refrain from joining the low-waged labor force[12] –a transitory opportunity, concentrated in the development poles– so that they can become protagonists of their own sustainable regional development. This vision, and the guarantees it offers, contributes to strengthening community institutions, and permits members to avoid the extremes of poverty and ecological degradation that oppress so many. The conflicts between the practitioners and the dispossessed are also reduced, as the outsiders are required to recognize that the locals have a prior claim to the territory.

The active participation of the indigenous and rural communities in the reconstruction and preservation of the ecosystems is vital, because history has placed them in the richest centres of biodiversity. They understand the cycles for reproduction and conservation, product of cultural development based on a lengthy process of social and ecological interaction. For this reason, they often assume their responsibility as "guardians of the forests" without extra compensation; it is just another job they must do in order to use their own ecosystems, frequently defined as "national lands" or protected areas.

This example involves a proposal by a local NGO (non-governmental organization) to collaborate with indigenous communities dispersed in the Sierra Madre del Sur (a mountain range on the south Pacific coast of Oaxaca), to attack the accelerated process of deforestation that decades of "top-grading" occasioned. A serious imbalance in the regional hydraulic system was discovered, the product not simply of a lower rate of recharge of the water table for but also of excessive withdrawals resulting from new infrastructure installed for a mega-tourist resort being installed in the Bahias de Huatulco. The Centro de Soporte Ecológico (CSE) proposed an environmental rehabilitation program in which the participants would be invited to recover their life styles, reinforcing local institutions and diversifying the productive structure. It explicitly rejects the paternalistic and clientelist approach of government programs implemented in Mexico since the 1917 Revolution. The program of "productive conservation"[13] involved a new management model that incorporates all of the stakeholders in the decision-making structure, including the communities themselves, the water users in Huatulco and the financing agencies; it was designed with three objectives in mind: a) to reconstruct and conserve the region's basins and forests; b) to use the ecosystems in a sustainable manner; and c) to join the inhabitants of the coast of Oaxaca in their efforts to recover their dignity. This involves training to implement clean technologies as well as updating traditional techniques as the communities attempt to deal with practical problems on a day-to-day basis. The proposal for the sustainable use of natural resources involves using the by-products from forest maintenance efforts - branches cut off for pruning and small trees cut for thinning the forests- rather than cutting the main growth. This

---

[12] A note on the role of wage labor in this strategy is in order. Although many members of the communities described in this chapter search for work in the capitalist firms and receive wages, including some who migrate abroad in search of higher incomes, the ability of the community to offer them a refuge, a place to return to where their livelihood and that of the family is guaranteed, gives them a measure of freedom that most workers do not have; the proletarian relationship, with its accompanying process of alienation, depends to a large extent on the lack of alternatives for people who must accept the wage-labor accord or face starvation.

[13] Productive conservation refers to the concept of rehabilitating forests in which some trees would be cut and a great deal of wood from regular pruning activities would be extracted for use in making wood products to be sold on fair trade markets.

helps reduce the problem of people selling trees to the closest buyer as well as emigration from the region.[14]

The reforestation program was designed to diversify the rural economy by introducing alternative productive systems to raise incomes and strengthen local institutions, blending traditional knowledge systems for conservation with modern production techniques. By deliberately planting surplus trees that must be thinned out to allow for a healthy forest wood was available to be worked into parts for "director" chairs, while branches gleaned from pruning are shaped into parts for tables, desks and even baseball bats and decorative figures, generating new jobs and income, avoiding the sacrifice of the healthiest trees. The project is aimed at regenerating the forest, and with it, protecting endangered fauna allowing some portion to be used in traditional settings for local consumption. It also stimulates local ecotourism businesses and allows; the regeneration of the agricultural areas in the river basins using deep rooted grasses and legumes to improve the land's fertility.[15] If the Centre for Ecological Support had not considered the enormous potential of traditional knowledge in ecosystem management, the project would have encountered greater resistance from the local communities, as is common in most projects designed by official development agencies in central offices.

Water Forever[16]
The Mixtecan peoples are an impoverished group living in a desolate region in north-central Oaxaca and Puebla, which has suffered from a lengthy process of environmental degradation as a result of centuries of over exploitation. A group of young people from the National University (UNAM) proposed to collaborate with more than 100,000 people living in the region to implement an ecosystem rehabilitation program, based primarily on water and land management techniques. During the ensuing quarter-century since the program began, an ambitious series of projects have improved conditions in the 1.5 million hectare region, on the basis of a program firmly anchored in community mobilization and training, based on attacking the problem of water scarcity. They identified the origins of the problem of water scarcity as the result of three factors: population increase, inadequate management of natural resources in the region, and unequal access to water, and most especially the over drawing of water supplies by a small number of people imposing their will over the community through corrupt power structures.

It was clear that deforestation and surface erosion were the main problems to be attacked. The uncontrolled logging was the result of lumber needs for subsistence uses, including firewood and

---

[14] Barkin, David and Carlos Paillés. 2002. "NGO-collaboration for ecotourism: A strategy for Sustainable Regional Development in Oaxaca." *Current Issues in Tourism*, Vol. 5:3 (245-253). (http://www.planeta.com/planeta/99/0499huatulco.html) Barkin, David and Carlos Paillés. 2000. "Water and Forests as Instruments for Sustainable Regional Development." *International Journal of Water*, Vol. 1:1(71-79). (http://www.cabi-publishing.org/focus/socio_economics/)

[15] The preferred grass is called "vetiver," selected for its ability to stabilize the soils while a very productive native legume (*Mucuna deeringianum*) fixes nitrogen in the soil (Buckles, David. 1993. "La revolución de los abonos verdes." *Pasos*, Vol. V:5 (30-33). http://www.laneta.apc.org/pasos/fbuck1.htm).

[16] For a more detailed description of this and other local initiatives for water management in Mexico see: Barkin, David. (Ed.). 2001. *Innovaciones Mexicanas en el Manejo del Agua.* Mexico: Universidad Autónoma Metropolitana. The group responsible for this program, Alternativas y Procesos de Participación Social, is directed by Raúl Hernández Garcíadiego y Gisela Herrerías Guerra.

home construction, and more dramatically, illegal cutting for commercial sale. In this setting, various land management projects, including dikes, terraces and dames seemed to be indicated, but their cost made such an approach unrealistic. In the context of the local planning meetings it became clear that the community had not lost its rich inherited culture of water management. The discussions led to a proposal to undertake an ambitious program to rebuild the areas where ravines and gullies had been carved out by centuries of erosion and regenerate the watershed that had been severely damaged. This regeneration process began in the higher reaches, with reforestation, using native species, and small earthen works to slow down the surface water run-off, rebuild soil, to retain some of the topsoil that would otherwise be washed away, and increase water infiltration so that it would be channelled to other parts of the region where it would used for production. A wide variety of techniques were implemented so that people from all of the communities could participate in spite of the fact that heavy equipment was not available. Stone dams were raised to accumulate soil in areas where new areas for cultivation were appropriate, water holes were emplaced to permit a more systematic development of small herds of animals, while cactuses were replanted for their fruits and water retention qualities as well as to stabilize the terraces. The cumulative effect of the hundreds of these small efforts was to substantially increase the area of arable land under cultivation and to increase the volumes of water available for agricultural production, for the animals, and for the communities.

The strategic approach adopted by participants and designers of this project is worthy of analysis in the light of the debate around the capabilities approach framed in this book. During its long gestation period, the approach has demonstrated its viability as a mechanism for promoting local capabilities far beyond those of constructing public works and increasing the region's productive potential. The long-term vision and the emphasis on local capacity building for project implementation has transformed the organization into a sort of substitute local government agency, with its own management structure, fleet of vehicles and heavy construction equipment, planning and engineering departments and even a geographic information systems laboratory. By building a tight internal structure and developing constructive and participatory relationships with local political authorities who are elected for three year terms, the group has become a sort of regional development agency with considerable influence in influencing the local public works agenda and assuring the participation of communities in its implementation.

Its influence derives, in large measure, from the continual reaffirmation of a participatory local decision making and governance structure that is overseen by cooperatives in more than 100 communities that are involved in implementing the model. In the process, dozens of young people have been sent regional technical training schools and received university degrees and returned to work in local activities. In their search for productive ventures that might generate an on-going source of employment and income, the group developed its own industrial processes for manufacturing nutritious snacks and other derivatives from an ancient (pre-Colombian) grain whose cultivation had been prohibited by the colonial overlords: amaranth; this experience further consolidated the reputation and capacity of the group to undertake other projects to strengthen local subsistence activities and promote productive diversification.

This experience is particularly illustrative of the approach offered in this analysis because it was designed to be implemented and maintained by the communities rather than by outside contractors. Therefore, the limited resources that were available from outside were channelled directly into employment creation and human resource improvement programs; scheduling took

into account the program of agricultural activities, thus reducing the pressures for off-season migration from the area. Using local materials and resources also increased its regional impact. Finally, the integration of the local understanding of water works and land management has produced an exceptionally effective hydraulic system that is turning out to be reminiscent of the pre-Colombian irrigation works described by archaeologists and admired by the Spanish colonizers. Rather than an imposition of an outside development agency, the approach implemented in the Mixteca offers a way to reaffirm local cultures and consolidate community institutions and processes that are now extending themselves into the production of traditional and modern agroindustrial products for sale outside the region.

Similar community management projects are springing up throughout Mexico. Community forest management projects now encompass more than one-half of the nation's wood resources, where local groups are developing their own production programs and complementing the protection programs with ecotourism, artisan production, water bottling and the sale of environmental services. Most importantly, these programs are examples of the way in which people are learning to appreciate the value of their inherited cultural traditions and enriching them with techniques and lessons from the current era.

Conclusion
There are numerous other areas in which traditional knowledges are being harnessed to protect communities and their ecosystems. Even in the metropolitan area of Mexico, several projects are taking advantage of local resources to reinforce local economies and political structures. A degraded forest is being rehabilitated as an ecotourist site and nature preserve where tens of thousands of visitors are treated to a unique set of hiking and biking trails and nature talks which inform and entertain; a trout nursery provides an opportunity for diners to select their own specimen for lunch while educating the visitors about this biological cycle. A pre-Colombian amphibian, the Axolotl, has become a charismatic attraction for visitors to the "floating gardens" of Xochimilco, when one local community decided to abandon the crass commercialism of the bawdy trips along the canals in favor of a more sedate tour for people attracted by the opportunity to understand how the complex ecosystem is maintained and can be managed to provide a variegated cornucopia of fruits, vegetables and small animals that protect the environment and provide for the economic well-being of the people; this example has now been emulated in at least five other communities and university research programs are reinforcing these local initiatives.

This anecdotal and quite selective recounting of a small selection of local development initiatives cannot do justice to the breadth of activities being undertaken by millions of Mexicans who have deliberately opted for local development strategies that place them on the margin of international economic integration. Rather than adopting the approach suggested by the "capabilities" framework, involving skill and institution intensive programs of human resource development, their focus is on strengthening traditional governance organs, such as the communal assembly, the councils of elders, and selected local officials to promote production and conservation programs consistent with sustainable resource management strategies and responsive to local needs; in the process, they are also involved participating in and transforming market relations with the outside world, replacing the passive relationship with commercial intermediaries for active political and economic ties with the burgeoning markets of fair trade organizations and

other 'niche' marketers to assure privileged access to protect them against the international mechanisms of unequal exchange. The communities are assuming the responsibilities generally assumed to local governments, tasks that the 'official' organs have proved incapable of achieving, and in the process assuring rising standards of social services and increases in human capabilities that become mutually reinforcing as their value proves itself in the palpable improvements in production and ecosystem health that contribute to community and individual well-being. In this way they are virtually turning the capabilities approach on its head: assuming the centrality of political and economic power as instruments to create the possibility of developing their capabilities to serve the needs of their peoples and the ecosystems on which they depend.

In our on-going interactions with the communities, we have systematized this set of experiences into a formulation of a strategy for sustainable regional resource management that is being repeated throughout the country. This involves four basic management principles that encompass the need for moving beyond the confines of individual communities to acknowledge the crucial role of alliances within regions and ecosystems to garner the political and social power required to defend these initiatives against the continual onslaught from political interests and economic groups bent on preventing these separatist movements from eroding centralized power and accumulating productive resources at the expense of international capital. The four basic principles of this strategy are:

<div align="center">

Autonomy
Self-sufficiency
Productive diversification
Sustainable resource management

</div>

If there is one lesson that can be extracted from the Mexican experience in rescuing traditional knowledges, it is for tradition to survive it must become a living process, a resource that is constantly renewed to assure its currency and its value to those that depend on it for their survival as a people, as a culture. In Mexico, these numerous groups, than now comprise more than one-quarter of the population, indigenous epistemologies are truly a building block for constructing alternatives to globalization: and thus to turning into reality (a slightly modified version of) the slogan of today's marchers:

MANY OTHER WORLDS ARE POSSIBLE