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Supporting locally determined food systems: the role of local organizations in farming, environment and people's access to food

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I. INTRODUCTION

Food systems include not only the production of food but also processing, distribution, access, use, recycling and waste. Today there are still many diverse food systems throughout the world, particularly in developing countries. Indeed, most of the world's food is grown, collected and harvested by over a billion small-scale producers, pastoralists and artisanal fisherfolk. This food is primarily sold, processed, resold and consumed locally, with many people deriving their incomes and livelihoods through work and activities at different points of the food chain – from seed to plate.

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Such localized food systems provide the foundations of people's nutrition, incomes, economies and culture throughout the world. They start at the household level and expand to neighbourhood, municipal and regional levels. And localized food systems depend on many different local organizations to coordinate food production, storage and distribution, as well as people's access to food. Moreover, the ecological and institutional contexts in which diverse food systems are embedded also depend on the coordinated activities of local organizations for their renewal and sustainability.

But despite their current role and future potential in meeting many of the Millennium Development Goals (MDGs), locally determined food systems – and the local organizations that govern them – are largely ignored, neglected or actively undermined by the international development community. Using specific examples, this chapter highlights some of the many ways in which local organizations manage and oversee different links in the food chain from seed to plate. The roles and significance of local organizations in sustaining diverse food systems, livelihoods and environments, in producing knowledge and innovations, and in designing regulatory institutions are briefly analysed. Finally, reversals needed to support locally determined food systems and organizations are identified. These reversals in policy and practice fundamentally challenge the current development paradigm promoted by the MDG process.

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II. LOCAL FOOD SYSTEMS, LIVELIHOODS AND ENVIRONMENTS

A significant number of livelihoods and environments are still sustained by a diversity of local food systems throughout the world. For example, half of all working people worldwide are farmers. And most of the world's farming population lives in the South (Table 6.1). The majority of these farmers are small-scale producers who do their agricultural work by hand (about 1 billion farmers), or by using animals such as bullocks for ploughing (300 million). In contrast, a relatively

Table 6.1: Number of farmers worldwide (billion)

	Total population	Active population	Active farming population
World population	6.1	2.6	1.35
North	1.2	0.4	0.045 (11% of total active population in North)
South	4.9	2.2	1.29 (59% of total active population in South)
• India	1.1		0.27 (20% of world total active farming population)

SOURCE: Charvet, J P (2005), *Transrural Initiatives*, 25 January, Paris.

small number of farmers in the South rely on modern farm machines such as tractors (20 million).

However, the figures in Table 6.1 do not account for all the additional livelihoods and jobs associated with localized foods systems. Each link in the food chain offers economic niches for many more people – as millers, butchers, carpenters, iron workers and mechanics, local milk processors, bakers, small shopkeepers and owners of food outlets, for example. The livelihoods and incomes of a huge number of rural and urban dwellers are thus dependent on the local manufacture of farm inputs and on the local storage, processing, distribution, sale and preparation of food. Even in affluent Western countries such as the USA and the UK, there is strong evidence that localized food systems generate many jobs and help sustain small and medium-sized enterprises. This economic fact usually becomes more apparent when local economies and food systems are displaced by large supermarkets, international competition and the global industrial food system. For example by 1992 in the UK, the building of 25,000 out-of-town large-chain retailers had corresponded with the closing of roughly 238,000 independent shops (grocers, bakers, butchers and fishmongers) in villages and high streets.[2] When 235,000 US small- and medium-scale farms were squeezed out by market competition in the mid-1980s, about 60,000 other local rural businesses also closed.[3]

2. DOE/MAFF (1995), *Rural England: a Nation Committed to a Living Countryside* (the Rural White Paper), HMSO, London.
3. Norberg-Hodge, H, T Merrifield and S Gorelick (2002), *Bringing The Food Economy Home: Local Alternatives to Global Agribusiness*, Zed Books, London.

Most local food systems are embedded in complex, risk-prone and diverse environments, where most of the world's rural poor people live. These environments include mountains, hills and wetlands, as well as the vast tracts of the semi-arid and humid tropics. They include the full range of ecosystems, from those relatively undisturbed, such as semi-natural forests, to food-producing landscapes with mixed patterns of human use, to ecosystems intensively modified and managed by humans, such as agricultural land and urban areas. People associated with localized food systems thus live in ecosystems of vital importance for human well-being.[4] As participants in localized food systems, local communities actively influence key ecosystem functions such as:

- the provision of food, water, timber and fibre;
- the regulation of climate, floods, disease, wastes and water quality;
- ecological support functions like soil formation, biodiversity for resilience, photosynthesis and nutrient cycling;
- the basis for culture through the provision of recreational, aesthetic and spiritual benefits.

III. THE ROLE OF LOCAL ORGANIZATIONS IN SUSTAINING LOCAL FOOD SYSTEMS AND LIVELIHOODS

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For as long as people have engaged in livelihood pursuits, they have worked together on resource management, labour-sharing, marketing and many other activities that would be too costly, or impossible, if done alone. Local groups and indigenous organizations have always been important in facilitating collective action and coordinated management of food systems and their environments at different spatial scales. In Mutual Aid, first published in 1902, Petr Kropotkin draws on the history of guilds and

4. Millennium Ecosystem Assessment (2005), *Ecosystems and Human Well Being: Synthesis*, Island Press, Washington DC.

unions in Europe, travel and colonial accounts outside Europe, and the experience of village communities everywhere, to show how collaboration and mutual support are at the heart of whatever makes human beings successful.[5] Negotiated agreements on the roles, rights and responsibilities of different actors in a common enterprise are at the heart of the forms of collaboration described by Kropotkin. To this very day, local organizations continue to play a central role in this process of negotiation and coordinated action in a variety of settings and at different scales.[6]

The different types of local organizations concerned with food, farming, environment and development include:

- traditional and indigenous organizations;
- governmental and quasi-governmental organizations;
- non-governmental and voluntary organizations;
- emergent, popular or "community-based" organizations, including new social movements.

Local organizations exist across a range of scales – from individual through national to international federations, consortiums, networks and umbrella bodies. One reason for linking up and federating in this way is to increase the effectiveness of organizations in managing localized food systems and their leverage in policy and political debates on farming, environment and people's access to food. However, local organizations and federations are not always welcoming spaces for women, nor inclusive of the weak and marginalized, nor free from manipulation and co-option by more powerful insiders and/or outsiders. While this is by no means universal, some local organizations and federations concerned with food and farming do have shortcomings in relation to equity, gender and entitlements of the very poor and marginalized.

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5. Kropotkin, P (1955), *Mutual Aid: a Factor of Evolution*, Extending Horizons Books, Boston, Massachusetts, USA (first published 1902).
6. Borrini-Feyerabend, G, M P Pimbert, M T Farvar, A Kothari, and Y Renard (2004), *Sharing Power: Learning by Doing in Co-management of Natural Resources throughout the World*, IIED and IUCN/CEESP/CCMWG, Cenesta, Tehran.

More generally, important differences have surfaced between two radically different types of spaces for participation: invited spaces from above, and popular or citizen spaces. Governments and donor-led efforts to set up co-management committees and groups of resource-users are examples of invited spaces from above. In contrast, citizen or popular spaces are created by people who come together to create arenas over which they have more control, for example indigenous peoples' platforms for negotiation and collective action, or do-it-yourself citizens' juries that frame alternative policies. While there are notable exceptions, popular spaces are usually arenas within which, and from which, ordinary citizens can gain the confidence to use their voice, analyze, deliberate, frame alternatives and action, mobilize, build alliances and act.[7]

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Many rural communities are no longer in charge of managing their local food systems, and, importantly, they are not "trusted" by state bureaucracies to be able to do so.[8] But, throughout the world, local organizations – individually and collectively – still play a key role in:

- sustaining the ecological basis of food systems;
- coordinating human skills, knowledge and labour to generate both use values and exchange values in the economy of the food system;
- the local governance of food systems, including decisions on people's access to food.

a. Local adaptive management of food-producing environments

Local organizations are crucial for the adaptive and sustainable management of food-producing environments. As Michael Cernea has put it: "resource degradation in the

7. Note that such popular spaces may also reproduce subtle forms of exclusion in the absence of a conscious social commitment to a politics of freedom, equity and gender inclusion – see for instance Adams 1996, cited in Borrini-Feyerabend et al. 2004, op. cit.

8. This is one of the important insights masterfully illustrated in Scott 1998 (Scott, J C (1998), *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, Yale University Press, New Haven, Connecticut, USA and London). As a result of this active disempowering, which in some places has been going on for a long time, human communities and their local organizations may have become all but incapable of managing their environments and/or sharing management rights and responsibilities with others.

developing countries, while incorrectly attributed to 'common property systems' intrinsically, actually originates in the dissolution of local level institutional arrangements whose very purpose was to give rise to resource use patterns that were sustainable".[9] Local groups enforce rules, incentives and penalties needed for the sustainable management of landscapes, environmental processes and resources on which local food systems depend. For example, in the Marovo Lagoon in the Solomon Islands, fisherfolk rely on many complex, unwritten rules on ownership, management and use of marine and agricultural resources. The rules specify fishing and cultivation methods and limit the period and quantity of fishing in areas threatened by excessive off-take. Although the system is currently under pressure from increased commercialization of fishing and population expansion, local communities are successfully accommodating these developments within their customary framework.[10]

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Moreover, local organizations are particularly well placed to monitor and respond adaptively to environmental change. This is important because variation within and among the environments in which local food systems are embedded is enormous. Daily, seasonal and longer-term changes in the spatial structure of these environments are apparent at the broad landscape level right down to small plots of cultivated land.[11] These spatio-temporal dynamics have major implications for the way food-producing environments are managed – how, by whom and for what purpose.

Uncertainty, spatial variability and complex non-equilibrium and non-linear ecological dynamics emphasize the need for flexible responses, mobility and local-level adaptive resource management in which farmers, pastoralists, fisherfolk and forest dwellers are central actors in analysis,

9. Cernea, M (1993), "Culture and organisation: the social sustainability of induced development", *Sustainable Development* Vol 1, No 2, pages 18–29.
10. Hviding, E and G B K Baines (1992), *Fisheries Management in the Pacific: Tradition and Challenges of Development in Marovo, Solomon Islands*, DP No.32, UNRISD, Geneva.
11. Gunderson, L H, C S Holling and S Light (1995), *Barriers and Bridges to the Renewal of Ecosystems and Institutions*, Columbia University Press, New York.

planning, negotiations and action.[12] Such adaptive management is mediated by local groups that coordinate planning and action at different spatio-temporal scales. More generally, collective action, based on social learning and negotiated agreements among relevant actors in an ecosystem, is often a condition for sustainable use and regeneration of that ecosystem.[13] Platforms that bring relevant actors together are key in mobilizing capacity for social learning, negotiation and collective action for natural resource management and sustaining critical ecological

Box 6.1: Adaptive management of landscapes in the Peruvian Andes

With the support of a local NGO (ANDES), indigenous Queshua communities in the region of Cusco have become organized into "local platforms" for the adaptive management of mountain landscapes and livelihood assets. In early 2000, the indigenous communities celebrated the opening of the Potato Park as a Community Conserved Area (CCA). Unusually among conservation areas, the Potato Park protects not only the natural environment but also the sociocultural systems that created the landscape. It is also unusual in that many of the most important forms of biodiversity in this CCA are domesticated – in fact they are the product of hundreds of years of deliberate ecosystem management, genetic selection and breeding by the Andean farmers. The farmers are well known for their remarkable ingenuity in the use of ecological habitats and species. For example, the majority of indigenous peoples in the area continue to farm traditional crop varieties and animal breeds, maintaining a high level of genetic diversity, which is well suited to their complex and risk-prone environments. Many of their small plots contain more than 100 different varieties of potato.

Most importantly, the Association of Communities of the Potato Park is responsible for running the park. The Association's members include the traditional head authority of each of the communities, along with representatives of local residents, non-government organizations, traditional authorities, local cooperatives and others. For the Queshua, the ecological, social, economic and cultural realms of human life are integrated through local organizations, institutions, laws and policies that transform assets (natural, physical, financial, human, social, cultural) into livelihood outcomes. Examples of such indigenous transforming structures and processes include:

- **The development of community-to-community and farmer-to-farmer learning networks based on the principle of *ayni* (reciprocity)**. Exchange is promoted through the sharing of information, practices and learning processes. Local platforms (organizations) of "barefoot technicians", elected by their own communities, network with other communities and create opportunities to share and transfer traditional knowledge and innovations.
- **The consolidation of local grassroots enterprises**. These groups are anchored in Andean principles of reciprocity and a local definition of well-being. The organizations work using the principles of Andean economy to reinforce local food systems within a holistic approach to the adaptive management of biocultural landscapes.

SOURCE: ANDES and IIED (2005), *Traditional Resources, Rights and Indigenous Peoples in the Andes*, IIED Reclaiming Diversity Series, IIED, London.

12. Gunderson et al., *ibid.*; Swift, J (1994), "Dynamic ecological systems and the administration of pastoral development" in I. Scoones (ed.), *Living with Uncertainty: New Directions for Pastoral Development in Africa*, Intermediate Technology Publications, London.
13. Borrini-Feyerabend et al. 2004, op. cit.

Box 6.2: Spatial and temporal variation in agricultural biodiversity: some management implications

The abundance of insect pests and their predators varies enormously within and between fields –even in the more intensively managed systems. In high-input irrigated rice farms, 100-fold differences in the abundance of plant hopper populations are commonly observed on rice plants grown a few metres apart. Huge variations in insect abundance also exist at larger spatial scales, and all are marked by dynamic change over time. This implies that highly differentiated pest management approaches are needed to monitor and control pests effectively and economically. The FAO-Government programme on integrated pest management (IPM) is a clear demonstration of the advantages of such local adaptive management of pests and their predators in irrigated rice in Asia.

As local organizations that bring people together for joint learning and action, Farmer Field Schools (FFSs) have been a major innovation for the local adaptive management of agricultural biodiversity. FFSs have developed farmers' own capacity to think for themselves and generate their own site-specific solutions for crop protection. The FFSs aimed to make farmers experts in their own fields, enabling them to replace their reliance on external inputs, such as pesticides, with endogenous skills, knowledge and resources. Over one million rice-paddy farmers and local resource users in Indonesia participated, and are still involved today, in this large-scale programme.

Crops experience rapid changes in environmental conditions, both above and below ground. For example, the physico-chemical and biological characteristics of soils are rarely homogenous within a single plot, let alone between plots. The intense selective pressures associated with this kind of micro-geographical variation calls for a fine-grained approach to agricultural biodiversity management that hinges on local organizations that support farmer-led plant breeding and decentralized seed multiplication. This adaptive strategy is generally advocated for resource-poor farming systems in marginal, risk-prone environments. However, the Réseau Semences Paysannes in France (a platform of farmer organizations) sees this approach as increasingly relevant for high-input situations in which agricultural diversification can be used to solve production problems induced by genetic uniformity (e.g. pest outbreaks) or to exploit new market opportunities (such as economic niches for local or regional products).

SOURCES: Fakih, M, T Rahardjo and M P Pimbert (2003), *Community Integrated Pest Management in Indonesia. Institutionalizing participation and people centred approaches*, IIED–IDS Institutionalizing Participation Series, International Institute for Environment and Development, London; Réseau Semences Paysannes (2004), *Sélection participative: à la jonction entre sélection paysanne et amélioration des plantes*, Réseau Semences Paysannes, Cazalens.

services on which local food systems depend. Examples of platforms include joint forest management (JFM) committees, farmer field schools (FFS), local fishing associations and user groups of various kinds. And local adaptive management may focus on whole landscapes, as in the Peruvian Andes (Box 6.1), or on small plots of land and micro-geographical scales (Box 6.2).

Local organizations usually develop successful adaptive management regimes when they build on local practices and the knowledge used by rural people to manage food-producing forests, wetlands, fields, rangelands, coastal

zones and freshwater systems. Moreover, the "learning by doing" approach of adaptive management, and the experiential knowledge shared in local organizations, often generate the skills and confidence needed to address wider livelihood and environment issues.[14] All this suggests new practical avenues for outside technical support in which land and water users' own priorities, knowledge, perspectives, institutions, practices and indicators gain validity in the search for a liveable world and human well-being.[15]

b. Local organizations and people's access to food

Once food has been harvested from fields, forests, pastures and water, local organizations oversee its processing in a variety of local contexts. Many local organizations and groups also determine people's access to food. The criteria and indicators used by these local organizations to guide action often reflect culturally specific forms of economic rationality and highly diverse definitions of well-being. Indeed, the latter usually sharply contrast with the indicators and criteria used in mainstream definitions of poverty, well-being and economic exchange. For example, the international development community's current emphasis on market-based approaches is largely blind to the fact that many local organizations mediate forms of economic exchange that exclude the use of money.

The "learning by doing" approach of adaptive management, and the experiential knowledge shared in local organizations, often generate the skills and confidence needed to address wider livelihood and environment issues

A largely invisible informal economy based on principles of solidarity, gifts and reciprocity ensures that people in much of Africa have at least some access to food in rural areas and, to a lesser extent, also in urban centres.[16] While the monetarized economy is depressed in much of the African continent, people often live on the production of use values outside the money market and depend on informal economic exchanges. These mechanisms, such as subsistence-based markets and bartering, are mediated by

14. Borrini-Feyerabend et al. 2004, op. cit.
15. Pimbert, M P and J Pretty (1998), "Diversity and sustainability in community based conservation" in Kothari, A, R V Anuradha, N Pathak and B Taneja (editors), *Communities and Conservation: Natural Resource Management in South and Central Asia*, UNESCO and Sage Publications, New Delhi and London; Posey, D (editor), (1999) *Cultural and Spiritual Values of Biodiversity*, Intermediate Technology Publications, London; Richards, P (1985), *Indigenous Agricultural Revolutions*, Unwin Hyman, London.
16. Latouche, S (1998), *L'autre Afrique. Entre don et marché*, Albin Michel, Paris; Latouche, S (2003), *Décoloniser l'imaginaire. La pensée créative contre l'économie de l'absurde*, Parangon, Paris.

Box 6.3: Barter markets in the Peruvian Andes

The valley of Lares-Yanatile in Cusco (Peru) is rich in biodiversity, containing three different agro-ecological zones at altitudes of 1,000 to 4,850 metres: *yunga, quechua,* and *puna.* Andean tubers and potatoes are grown in the highest zone; corn, legumes and vegetables are in the middle area, with fruit trees, coffee, coca and yucca in the lower part. Every week a barter market is held in the middle area of the valley, where nearly 50 tonnes of goods are traded each market day – ten times the volume of food distributed by the National Programme of Food Assistance. Anyone can participate, and can trade any amount of any crop.

Women are key players in this non-monetary market, which is vital in ensuring that their families have enough food to eat, and that they have a balanced diet. The rainforest supplies vitamin C, potassium and sodium through fruit, such as citrus and bananas, that do not exist in the quechua and puna zones. The middle and high zones supply starches, mainly potatoes and corn, which provide desperately needed carbohydrates to the rainforest zone. Principles of reciprocity and solidarity guide the economic exchange of a diversity of foods, ensuring that important needs of people and the land are met in culturally unique ways. Indeed, recent action research has generated new evidence on the importance of Andean barter markets for:

- access to food security and nutrition by some of the poorest social groups in the Andes;
- conservation of agricultural biodiversity (genetic, species and ecosystem) through continued use and exchange of food crops in barter markets;
- maintenance of ecosystem services and landscape features in different agro-ecological belts along altitudinal gradients and at multiple scales;
- local, autonomous control in production and consumption – and, more specifically, control by women over key decisions that affect both local livelihoods and ecological processes.

A polycentric web of local organizations operating at different scales (from household to whole landscape) governs these forms of economic exchange and contributes to the adaptive management of environmental processes and natural resources. In addition to contributing to the food security of the poorest of the poor, this decentralized web of local organizations also enhances cultural, social and ecological resilience in the face of risk and uncertainty.

SOURCES: Marti, N (2005), "La multidimensionalidad de los sistemas de alimentacion en los Andes peruanos: los chalayplasa del valle de Lares (Cusco)", doctoral thesis, Universitat Autonoma de Barcelona, Barcelona; and www.diversefoodsystems.org.

a complex web of local organizations and groups.[17] In the Peruvian Andes, the barter markets run by women's organizations ensure that the poorest of the poor have some food and nutritional security (Box 6.3). Both the volume and economic value of food exchanged through these webs of polycentric local organizations can be significantly higher than that sold in money-based markets (see Box 6.3). However, most development economics, policy think tanks and international donors largely ignore the huge potential of these forms of economic organization and exchange in meeting human needs and achieving the MDGs.

17. Latouche 1998, op. cit.

These biases of "normal professionalism" and "normal development"[18] also exist towards locally managed and controlled food-distribution schemes in marginalized environments. For example in the drylands of India, the official Public Distribution System (PDS) that was set up as a safety net for the poor has become socially and ecologically counterproductive. In the farming belts stretching across the Deccan plateau, north Karnataka, Marathwada, the deserts of Rajasthan and many adivasi (indigenous people) areas in central India, coarse cereals like sorghum and various nutritionally rich millets (pearl, finger and foxtail millets) have been the mainstay of agriculture, diet and culture. Farming of these crops extends to 65 per cent of the geographical area of the country where agriculture is rainfed and where the concentration of the rural poor is among the highest in the world. These rainfed crops require very few external inputs and no irrigation. They offer nutritional and food security for rural communities – especially for the marginalized and most vulnerable. And yet, "progress" in food production and peoples' access to food in India over the last decades has been fuelled just by two crops: rice and wheat (the "fine" cereals). Of every 100 tonnes increase in food production, 91 tonnes were contributed by rice and wheat. The remaining 9 tonnes were provided by coarse cereals (5.5 tonnes) and pulses (3.5 tonnes). In the last three decades, sorghum has lost 35 per cent of cropping area, and little millet has lost nearly 60 per cent of cropping area.

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Despite all the rhetoric of increasing food production in the country, policy-makers and foreign development aid advisors have allowed nearly 9 million hectares of the millet–sorghum growing area to go out of production. One of the major contributors to this problem is the Public Distribution System (PDS), as practised in India, which concentrates on only rice and wheat. This centrally run national PDS provides for a regular and continued uptake of rice and wheat from the market for distribution to the poor at subsidized prices. The PDS offers a steady and remunerative price for rice and wheat

18. See Chambers, R (1993), *Challenging the Professions. Frontiers for Rural Development*, Intermediate Technology Publications, London.

Box 6.4: An alternative Public Distribution System run by women in Andhra Pradesh, India

A Public Distribution System (PDS) operates in the villages around Zaheerabad in Medak District of Andhra Pradesh, as elsewhere in India. Every month, each family having access to this system (about half of the rural population) can buy 25 kilos of rice at a subsidized rate. Although this ration is the lifeline of poor rural families, the rice sold in the PDS is unfamiliar to the women of Zaheerabad. They have never grown rice on their dry lands, instead cultivating and cooking sorghum and millets, and a wide range of pulses. With more and more PDS rice coming from the resource-rich areas of South India, dryland farmers and their food crops were being gradually displaced. Their lands were being put to fallow and local biodiversity important for food and agriculture was eroded. The PDS rice was cheap but nutritionally inferior to traditional coarse grains. Being reduced to consumers dependent on purchased food for their own survival undermined the women's self-esteem and self-respect as food providers and keepers of seed.

The women organized into *sanghams*, voluntary associations of Dalit women (the lowest social rank in the village), and discussed possible alternatives to the government's PDS. They decided to reclaim their fallow lands and grow their traditional dryland crops again. They planned to establish a completely community-managed PDS system based on coarse grains, locally produced, locally stored and locally distributed. Meetings were held in villages and the modalities of running an alternative PDS were worked out together with the Deccan Development Society (DDS), an NGO supporting the work of the *sanghams*. Formal agreements were signed between the DDS and the village *sanghams* to specify the roles, rights and obligations of each party in the joint management of the alternative PDS. Working through the DDS, the *sanghams* also approached the Ministry of Rural Development, which saw the merit of their case and approved funding for a Community Grain Fund.

In its first year, this jointly managed scheme involved over 30 villages, brought about 1,000 hectares of cultivable fallows and extremely marginal lands under the plough, produced over three million kilos of extra sorghum (at the rate of about 100,000 kilos per village) in a semi-arid area, grew extra fodder to support about 2,000 cattle, created an extra 7,500 wages and provided subsidized sorghum for about 4,000 families. Grain storage was decentralized, using indigenous storage techniques that minimized pest damage and health hazards. Biological diversity significantly increased in the area, as traditional crops and varieties were reintroduced as part of complex and diverse farming systems.

At the end of the storage period, during the food-scarcity seasons, the *sanghams* sell their grains at a subsidized price to around 100 poor households in each village. Using participatory methods, the Dalit women decide who among the villagers are the poorest and qualify for community grain support. In each village, the villagers draw social maps on the ground of all households. The villagers evolve criteria for rural poverty, and judge each household on a five-point scale of poverty, after careful deliberation in an open and transparent way. Households thus selected are issued a sorghum card by the *sangham*. Instead of the subsidized rice of the government PDS, which costs 3.5 rupees per kilo, this card entitles a family to an amount of sorghum at the subsidized price of 2 rupees per kilo, for each of the six months of the rainy season. The poorer the family, the larger its entitlement. In recognizing each person's fundamental right to food, the *sanghams* thus practice their own concepts of equity and solidarity as they distribute the benefits of the co-managed PDS.

SOURCES: Satheesh, P V and M P Pimbert (1999), "Reclaiming diversity, restoring livelihoods", Seedling Vol 16, No 2, pages 11–23; Srinivas, Ch and S Abdul Thaha (2004), *A study on Alternative Public Distribution System, Deccan Develoment Society*, Hyderabad.

farmers who are already supported by subsidized irrigation, subsidized fertilizers and adequate crop insurance. On the other hand, farmers from the rainfed areas suffer from multiple disadvantages – no assured irrigation, no subsidies, no crop insurance, and unreliable market forces. Moreover, the flooding of the Public Distribution System with cheap rice and wheat weans away the traditional users of coarse grains and leaves the small-scale production of sorghum and millets without a market. As a result, many rainfed farms have been abandoned, and large areas of dryland agriculture are turning into fallows, enhancing desertification.

In response to these multiple crises, local organizations have developed alternative forms of PDS based on the cultivation of local grains, local storage, local processing and decentralized local control in different regions of India. Like the alternative PDS run by women's organizations in Andhra Pradesh (Box 6.4), such community-controlled systems of food distribution contribute significantly to the alleviation of hunger and the regeneration of degraded drylands. They also significantly reduce the overhead costs incurred by the mainstream Public Distribution System (PDS), which involves energy- intensive long-distance transport of food grains, the maintenance of a huge storage infrastructure and centralized management.

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c. Federations, networks and organized policy influence

Federated organizations have an important role in projecting the voice and concerns of small-scale food producers and other citizens in a variety of spheres. Many such federations that aim to influence policy-making are not entirely focused on natural resources and agriculture. They may be landless people's movements (the clearest examples being the million-strong O Movimento dos Trabalhadores Rurais sem Terra (MST) in Brazil and the Kilusang Magbubukid ng Pilipinas (KMP) in the Philippines),[19]

19. MST in Brazil has its own website, with pages in Portuguese, English, French, Spanish and Italian, such is its international prominence (http://www.mstbrazil.org/). KMP is a nationwide federation of Philippine organizations, which claims to have "effective leadership" of over 800,000 landless peasants, small farmers, farm workers, subsistence fisherfolk, peasant women and rural youth (http://www.geocities.com/kmp_ph/index.html).

Box 6.5: Producer organizations, collective action and institutional transformation in West Africa

Producer organizations (POs) cover a wide range of activities, from management of common woodland or pasture resources, water use, and collection and sale of a particular crop, as well as providing access to fertilizer, seed and credit. Grouping together through collective action enables producers to take advantage of economies of scale, as well as making their voices heard in government policy and decision-making. Additionally, producers hope to increase their negotiating power with companies buying their crop – increasingly necessary as globalization is bringing more concentration and integration of agribusiness throughout the world. In some cases, producer organizations have also provided a valuable bridging function between farmers and sources of technical expertise, such as research and extension structures. Foreign aid funds have often been instrumental in strengthening the role that POs can play, despite the associated risk that the leadership may become distant from the interests and needs of the membership.

Over the past decade, a range of POs have become established and strengthened their positions at local, national and sub-regional levels in West Africa. These organizations are in part the result of government withdrawal from important sectors of the rural economy, including the supply and marketing of agricultural inputs. They have also emerged in a context of greater political liberalization, and now represent a political force of which governments must take notice. This became clear from the strike by Mali's cotton farmers in the 2001 season, due to low prices and continued waste and corruption within the *Compagnie Malienne pour le Développement des Textiles*. The strike cut output by half, with many cotton farmers switching to maize and other cash crops for that season.

Examples of POs operating at national level include the *Comité National de Concertation des Ruraux* (CNCR) in Senegal and the *Fédération des Unions des Producteurs* (FUPRO) in Benin.a The CNCR provides an interesting case, which brings together a series of PO federations in Senegal, and has become a central actor in the dialogue between government, donors, and producers on agricultural strategy and related issues, such as land tenure. Such POs have the advantage of providing a channel to make the case for greater support to agriculture in general, as well as to take account of the particular constraints faced by smallholders. Policy and decision-making in government tend to follow both formal and informal procedures. Smallholders have less easy access to informal mechanisms that operate through networks of friends and associates, and lobbying through high-level political contacts, which are usually the preserve of powerful economic actors, such as large commercial farmers and agribusiness. Thus, POs need to make best use of official channels and opportunities to give voice to the needs of less powerful actors.

At the regional level, there has been increased interest in generating pressure on governments and regional institutions to ensure that producer interests are better taken into account in negotiation processes, such as those concerning the World Trade Organization (WTO), European Common Agricultural Policy (CAP) reform and the Cotonou negotiations. Organizations representing West African producers include the Réseau des Organisations Paysannes de l'Afrique de l'Ouest (ROPPA), the Association Cotonnière Africaine and the Union of Chambers of Agriculture for West Africa. ROPPA and its members have been particularly vocal in support of household farming, and opposed to the agribusiness model being promoted by some as the means to "modernize" agriculture: "This vision [in support of household farming] has been inspired by a global perception of the role of agriculture in society, not only for producing food and fibre but also performing many other economic, social and environmental functions".b Thus, the argument being made by ROPPA and others supports broader debates regarding the "multifunctionality" of agriculture and of the land, and the consequent need to avoid a purely economic or market-based approach.

SOURCES: adapted from Belières, J-F, P M Bosc, G Faure, S Fournier and B Losch (2002), *What Future for West Africa's Family Farms in a World Market Economy?* Drylands Issues Paper No. 113, International Institute for Environment and Development, London; and Toulmin, C and B Guèye (2003), *Transformations of West African Agriculture and the Role of Family Farms*, Drylands Issues Paper No. 123, International Institute for Environment and Development, London.

a. GRAF/GRET/IIED (2003), *Making Land Rights More Secure*, proceedings of an international workshop, Ouagadougou, 19–21 March 2002, International Institute for Environment and Development, London.
b. Belières et al. 2002, op. cit.

federations of the urban poor,[20] indigenous people's movements (such as the Coordinating Body for the Indigenous Peoples' Organizations of the Amazon Basin (COICA),[21] peasant movements (such as Via Campesina or the Réseau des Organisations Paysannes de l'Afrique de l'Ouest (ROPPA) in West Africa), or various national federations of producer organizations, such as those of Benin, Niger, Mali and Senegal.[22] Producers' organizations have also been active at the international level. One example is Via Campesina, a broad, worldwide coalition of peasants and farmers lobbying on land-tenure reform, agro-ecology, and food sovereignty.

Federations of the rural and urban poor are well placed to promote non-state-led forms of deliberative democracy aimed at making national and global institutions accountable to citizens – particularly those most excluded from decision-making

Most of these organizations come to food and agricultural policy debates with wider agendas, for example on land redistribution or participatory governance. As a result, their activities may be very wide- ranging and complex. Yet, they can lead to important shifts in the balance of power in favour of poor rural people, as the rise of producer organizations in West Africa illustrates (Box 6.5). Many such federations of the rural and urban poor are well placed to promote non-state-led forms of deliberative democracy aimed at making national and global institutions accountable to citizens – particularly those most excluded from decision-making. Bold innovations such as the Prajateerpu ("peoples' verdict") on the future of food and farming in South India (Box 6.6) suggest new ways of bringing together coalitions and federations of the poor with international organizations to:

- create safe spaces and participatory processes in which expert knowledge is put under public scrutiny through appropriate methods for deliberation and inclusion (e.g. citizen juries, consensus conferences and multi-criteria mapping);
- strengthen the voices of the weak in setting agendas and framing policies and regulatory frameworks for

20. www.iied.org/urban/pubs/eu_briefs.html.
21. www.coica.org.
22. GRAF/GRET/IIED (2003), *Making Land Rights More Secure*, proceedings of an international workshop, Ouagadougou, 19–21 March 2002, International Institute for Environment and Development, London.

Box 6.6: Prajateerpu – a citizens' workshop on food and farming futures in Andhra Pradesh, India

Prajateerpu (or "people's verdict") was an exercise in deliberative democracy involving marginal farmers and other citizens from all three regions of the state of Andhra Pradesh. The citizens' jury was made up of representatives of small and marginal farmers, small traders, food processors and consumers. Prajateerpu was jointly organized by the Andhra Pradesh Coalition in Defence of Diversity (made up of 145 NGOs and POs), the International Institute for Environment and Development (IIED), the Institute of Development Studies (IDS) at the University of Sussex, the University of Hyderabad, Andhra Pradesh, and the all-India National Biodiversity Strategy and Action Plan (NBSAP). The jury hearings took place in Medak District, Andhra Pradesh, in June 2001. Jury members also included indigenous people (known in India as *adivasi*), and over two-thirds of jury members were women. The jury members were presented with three different scenarios, each advocated by key proponents and opinion-formers who attempted to show the logic behind the scenario. It was up to the jury to decide which of the three policy scenarios provided them with the best opportunities to enhance their livelihoods, food security and environment 20 years into the future.

Scenario 1: 'Vision 2020'. This scenario had been put forward by Andhra Pradesh's Chief Minister, backed by a World Bank loan. It proposes the consolidation of small farms and rapidly increased mechanization and modernization of the agricultural sector. Production-enhancing technologies such as genetic modification would be introduced in farming and food processing, reducing the number of people on the land from 70 to 40 per cent by 2020.

Scenario 2: an export-based cash-crop model of organic production. This was based on proposals from the International Forum for Organic Agriculture (IFOAM) and the International Trade Centre (UNCTAD/WTO) for environmentally friendly farming linked to national and international markets. This scenario was dependent on the demand of supermarkets in the North for a cheap supply of organic produce, complying with new eco-labelling standards.

Scenario 3: localized food systems. This scenario was based on increased self-reliance for rural communities, agriculture with low external inputs, and the re-localization of food production, markets and local economies, including long-distance trade only in goods that are surplus to local production or not produced locally.

The workshop process was overseen by an independent panel of external observers drawn from a variety of interest groups. It was their role to ensure that each 'food future' was presented in a fair and unprejudiced way, and that the process was trustworthy and not captured by any one interest group.

The key conclusions reached by the jury members, their own "vision of the desired future", included features such as:
- food and farming for self-reliance and community control over resources;
- maintaining healthy soils, diverse crops, trees and livestock, and building on indigenous knowledge, practical skills and local institutions.

It also included opposition to:
- the proposed reduction of those making their living from the land from 70 to 40 per cent in Andhra Pradesh;
- land consolidation into fewer hands, and displacement of rural people;
- contract farming;
- labour-displacing mechanization;
- GM crops, including Vitamin A rice & Bt cotton;
- loss of control over medicinal plants, including their export.

The Prajateerpu and subsequent events show how the poor and marginalized can be included in the policy process. By being linked with state-level and international policy processes, the jury outcomes and citizen voice have encouraged more public deliberation and pluralism in the framing of policies on food and agriculture in Andhra Pradesh. The state government that had championed Vision 2020 reforms was voted out of office in 2004. The largely rural electorate of Andhra Pradesh voted massively against a government that it felt was neglecting farmers' needs, rural communities and their well-being.[a] Similarly, the issues highlighted by the Prajateerpu have been partly responsible for the setting up of a UK parliamentary inquiry into the impacts of British bilateral aid to India, and Andhra Pradesh in particular.[b]

SOURCES: adapted from Pimbert, M P and T Wakeford (2002), *Prajateerpu. A Citizens Jury/Scenario Workshop for Food and Farming in Andhra Pradesh,* India, International Institute for Environment and Development, Institute of Development Studies, Andhra Pradesh Coalition in Defence for Diversity, University of Hyderabad and All India National Biodiversity Strategy and Action Plan, IIED, London (www.iied.org/docs/sarl/Prajateerpu.pdf); and Pimbert, M P and T Wakeford (2003), "Prajateerpu, power and knowledge: the politics of participatory action research in development. Part 1: Context, process and safeguards", *Action Research* Vol 1, No 2, pages 184–207; www.prajateerpu.org.

a. http://www.expressindia.com/election/fullestory.php?type=ei&content_id=31318; www.guardian.co.uk/international/story/0,,1212942,00.html.
b. www.parliament.uk/parliamentary_committees/international_development/ind040324__21.cfm.

development and environment – at local, national and global levels;

- support the emergence of transnational communities of inquiry, and coalitions for change committed to equity, decentralization, democratization and diversity in food systems, environment and development.

Local organizations and federations thus increasingly seek to have a greater say in the governance of food systems. In so doing, they challenge liberal understandings in which citizenship is viewed as a set of rights and responsibilities granted by the state. Instead, citizenship in the context of locally determined food systems is claimed, and rights are realized, through the agency and actions of people themselves. Local organizations and federations are thus increasingly becoming expressions of an emergent citizenship in the governance of food systems. People have special rights when it comes to food, and claiming and exercising these rights to "food sovereignty" has become a movement that is very much in tune with this concept of "citizenship". The People's Food Sovereignty Network defines the concept thus:

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"Food Sovereignty is the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self reliant; to restrict the dumping of products in their markets; and to provide local fisheries-based communities the priority in managing the use of and the rights to aquatic resources. Food Sovereignty does not negate trade, but rather it promotes the formulation of trade policies and practices that serve the rights of peoples to food and to safe, healthy and ecologically sustainable production."[23]

A key goal of the more emancipatory federations and umbrella organizations is to develop a public sphere that allows for maximum democracy in the literal sense of the

23. http://www.cine.mcgill.ca/atitlan.htm; accessed August 19th, 2005

term. In its present form, this new politics in the making affirms the values of "confederalism" and "dual power".

- *Confederalism* involves a network of bodies or councils with members or delegates elected from popular face-to-face democratic assemblies, in villages, tribes, towns and even neighbourhoods of large cities. These confederal bodies or councils become the means of interlinking villages, towns, neighbourhoods and ecological units into a confederation based on shared responsibilities, full accountability, firmly mandated representatives and the right to recall them, if necessary.
- *Dual power*. The larger and more numerous the linked federations and confederations become, the greater is

Box 6.7: The Peasant Rights Movement and policy change in Indonesia

The demise of the repressive Suharto Government in 1997 made it possible for civil society to organize for change on a large scale, and new peasant movements have emerged in every region of Indonesia. The Agrarian Reform Consortium and the Peasant Rights Movements launched by North Sumatra Small Farmers' Union and the Friend of Small Farmers movement in central Java, as well as the Integrated Pest Management farmers' movement, have recently created an even bigger alliance by establishing a Peasant Rights Movement. Organized as a broad federation, the movement is a strong reaction against the neoliberal approach of trade liberalization and especially the corporate takeover of food and farming. These emerging social movements are campaigning to protect the livelihoods and culture of Indonesian rural communities, and are claiming rights to food and farmer sovereignty. They argue that genuine food security and participation of farmers can be realized only in a system where the sovereignty of farmers' organizations and activities are guaranteed. Farmers and people must be able to exercise their human rights to define their food and farming policies, as well as having the right to produce their food in accordance with the diversity of their sociocultural and ecological contexts.

Many civil society organizations are linked into broad federations to exert countervailing power against what they perceive as a largely corrupt centralized government. Networks and federations get actively engaged in policy reforms at the sub-district, district, provincial and national government levels. Civil society organizations facilitate participatory policy processes and co-management settings. Networks and coalitions use a diversity of deliberative and inclusive processes to gain leverage, exert pressure from below and effect policy changes. While the primary focus is on institutionalizing participatory governance at the community level, well-organized farmer federations have secured important policy changes by engaging with civil servants at the local and sub-district government level.

SOURCES: adapted from Fakih, M, T Rahardjo and M P Pimbert (2003), *Community Integrated Pest Management in Indonesia. Institutionalizing Participation and People Centred Approaches*, IIED–IDS Institutionalizing Participation Series, International Institute for Environment and Development, London; and Pimbert, M P (2003), *Social Learning for Ecological Literacy and Democracy: Emerging Issues and Challenges*, Proceedings of the CIP-UPWARD-FAO-Rockefeller International Workshop on Farmer Field Schools, 21–25 October 2002, Yogyakarta, Indonesia.

their potential to constitute a significant counter-power to the state and transnational corporations that largely control the global food system. Confederations can eventually exert "dual power", using this to further citizen empowerment and democratic change. For example, they can seek power within local government through strategies of collaboration and political negotiation, while also maintaining strong community and municipal organizing strategies at the grassroots. Multiple lanes for engagement can also be used to link community-based food systems, social movements and political parties with direct local governance strategies. This dual-power approach is widely used by the Indonesian Peasant Rights movement (Box 6.7).

IV. RECLAIMING DIVERSE LOCAL FOOD SYSTEMS

Sustaining diverse local food systems, and the hundreds of millions of livelihoods associated with them, calls for reversals in contemporary patterns of economic growth, modernization and nation-building. Achieving the MDGs for hunger alleviation and environmental sustainability will largely depend on emphasizing locally determined food systems and policy frameworks that empower local organizations to manage food systems and their environments. These are not the easy options. Dominant rules that govern food and agriculture are designed a priori to strengthen not autonomous local organizations but professional control by the state and corporations – and to facilitate not local but international trade.

Achieving the MDGs for hunger alleviation and environmental sustainability will largely depend on emphasizing locally determined food systems and policy frameworks that empower local organizations to manage food systems and their environments

a. Transforming external support agencies and their ways of working

For donors and other external agencies (such as government departments and NGOs), the following shifts in operational practice will often be needed to support locally determined food systems.

Build on local institutions and social organization. Existing organizations are resources to be strengthened, changed

and developed, not ignored and suppressed. Increased attention will need to be given to community-based action through local organizations and user groups that oversee different parts of the food system. Available evidence from multilateral projects evaluated five to ten years after completion shows that where institutional development has been important, the flow of benefits has risen or remained constant.[24] Past experience therefore suggests that if this type of institutional development is ignored in food and agricultural policies, economic rates of return will decline markedly, and the MDGs may not be met.

Build on local systems of knowledge and management. Local management systems are generally tuned to the needs of local people, and often enhance their capacity to adapt to dynamic social and ecological circumstances. Although many of these systems have been abandoned after long periods of success, there remains a great diversity of local systems of knowledge and management. Despite the pressures that increasingly undermine these local systems, plans to strengthen locally determined food systems should start with what people know and do well already, to secure their livelihoods and sustain the diversity of environments on which they depend.

Build on locally available resources and technologies to meet fundamental human needs. Preference should be given to local technologies by emphasizing the opportunities for intensification in the use of available resources. Sustainable and cheaper solutions can often be found for farming, food processing, storage and distribution when groups or communities are involved in identification of technology needs, and then the design and testing of technologies, their adaptation to local conditions and, finally, their extension to others. The potential for intensification of internal resource use without reliance on external inputs is enormous at every point along the food chain. However, combinations of traditional and modern technologies are

Sustainable and cheaper solutions can often be found for farming, food processing, storage and distribution when groups or communities are involved in identification of technology needs, and then the design and testing of technologies, their adaptation to local conditions and, finally, their extension to others

24. Cernea, M (1987), "Farmer organisations and institution building for sustainable development", *Regional Development Dialogue* Vol 8, pages 1–24.

possible too. This is particularly true with the development of miniaturization, multipurpose machines, multimedia and computer-assisted technology, knowledge in agro-ecology, and efficient renewable energy systems that can all enhance local autonomy and ecologies, minimize pollution, and expand the realms of freedom and culture by eliminating needless toil. But local organizations should decide which new innovations are needed, when, where and under what conditions along the food chain.

Use process-oriented, flexible projects. In supporting the development of locally determined food systems, the initial

Box 6.8: Transforming organizations for participation and citizen empowerment

Reformers working for more accountable organizations can include donors, local and national government, NGOs and civil society organizations. Key actions to facilitate reform include:

- diversifying the governance and membership of budget allocation committees of public sector planning, services and research institutes to include representatives of diverse citizen groups, also establishing procedures to ensure transparency, equity and accountability in the allocation of funds and dissemination of new knowledge;
- encouraging shifts from hierarchical and rigidly bureaucratic structures to "flat", flexible and responsive organizations;
- providing capacity building for technical and scientific personnel to foster those participatory skills, attitudes and behaviour needed to learn from citizens (mutual listening, respect, gender sensitivity, as well as methods for participatory learning and action);
- ensuring that senior and middle management positions are occupied by competent facilitators of organizational change, with the vision, commitment and ability to reverse gender and other discriminatory biases in the ideologies, disciplines and practices animating an organization;
- promoting and rewarding management that is consultative and participatory rather than verticalist and efficiency-led, also establishing incentive and accountability systems that are equitable for women and men;
- providing incentives and high rewards for staff to experiment, take initiatives and acknowledge errors as a way of learning by doing, and engaging with the diverse local realities of citizens' livelihoods in urban and rural contexts;
- redesigning practical arrangements, the use of space and time within the workplace to meet the diverse needs of women, men and older staff, as well as their new professional obligations to work more closely with citizens and other actors (through flexible timetables, career paths, working hours, provision of paternity and maternity leave, childcare provision, mini-sabbaticals and promotion criteria);
- encouraging and rewarding the use of gender-disaggregated and socially differentiated local indicators and criteria in monitoring and evaluation, as well as in guiding subsequent technical support, policy changes and allocation of scarce resources.

SOURCES: adapted from Bainbridge, V, S Foerster, K Pasteur, M P Pimbert, G Pratt and I Y Arroyo (2000), *Transforming Bureaucracies. Institutionalising Participation in Natural Resource Management. An Annotated Bibiography,* International Institute for Environment and Development, London, and the Institute for Development Studies, Brighton; and Pimbert, M P (2003), *Social Learning for Ecological Literacy and Democracy: Emerging Issues and Challenges,* Proceedings of the CIP-UPWARD-FAO-Rockefeller International Workshop on Farmer Field Schools, 21–25 October 2002, Yogyakarta, Indonesia.

focus is on what people articulate as most important to them. Error is treated as a source of information, and flexibility permits continuous adaptation of procedures. Indicators developed from those most important to local communities are seen as milestones rather than absolute and illusory fixed targets. Local food systems based on this participatory, open-ended approach must be of realistic lengths of time for real social development and environmental conservation. Projects of short duration probably have a much greater chance of failure than do long-term projects (of five to ten years, or more). Donors and others involved must be prepared for low initial levels of disbursement, and for changes in priorities.

Support local participation in planning, management and evaluation. If activities associated with different parts of local food systems are to become adaptive and participatory, this will imply significant changes in how outside support is conceived and organized. Support is needed for participatory learning approaches in which the main goals are qualitative shifts in how people and institutions interact and work together. This – with the process-oriented approach outlined above – implies significant shifts in the internal procedures, culture and professional practice of external support agencies (Box 6.8)

Supporting locally determined food systems and organizations in the context of the MDGs also calls for reversals in international and national policies. Indeed, there is a fundamental conflict between a global food system of centralized, corporate-driven, export-oriented, industrial agriculture, and one that is more decentralized and smaller-scale, with sustainable production patterns primarily oriented towards domestic markets and localized food systems. Reinforcing such localized food systems entails shifts from uniformity, concentration, coercion and centralization, to support more diversity, decentralization, dynamic adaptation and democratization in food systems.

Reinforcing localized food systems entails shifts from uniformity, concentration, coercion and centralization, to support more diversity, decentralization, dynamic adaptation and democratization in food systems

Some of the policies and practices that can empower organizations of the weak and marginalized to regain control over resources and regulative institutions are listed below, as recommendations for the Millennium Development process.

b. Support enabling national policies and legislation

- Equitable land reform and redistribution of surplus land to tenants within a rights-based approach to development.
- Reform in property rights to secure gender-equitable rights of access and use of common property resources, forests and water.
- Protect the knowledge and rights of farmers and pastoralists to save seed and improve crop varieties and livestock breeds, for example banning patents and inappropriate intellectual property right (IPR) legislation.
- Re-introduction of protective safeguards for domestic economies to guarantee stable prices covering the cost of production, including quotas and other controls against imports of food and fibre that can be produced locally.
- Policies that guarantee fair prices to producers and consumers, safety nets for the poor.
- Re-direct both hidden and direct subsidies towards supporting smaller-scale producers and food workers to encourage the shift towards diverse, ecological, equitable and more localized food systems.
- Increase funding for and re-orientation of public sector R&D and agricultural/food-sciences extension towards participatory approaches and democratic control over priority-setting, technology validation and spread of innovations.
- Broaden citizen and non-specialist involvement in framing policies, setting research agendas and validating knowledge, as part of a process to democratize science, technology and policy making for food, farming, environment and development.

c. Support enabling global multilateralism and international policies

- Re-orient the end goals of trade rules and aid, so that they contribute to the building of local economies and local control, rather than international competitiveness.
- Supply management to ensure that public support does not lead to over-production and dumping that lowers prices below the cost of production – harming farmers in North and South.
- International commodity agreements to regulate the total output to world markets.
- Create regional common agricultural markets that include countries with similar levels of agricultural productivity. For example: North Africa and the Middle East; West Africa; Central Africa; South Asia.
- Protect the above regional common markets against the dumping of cheap food and fibre, using quotas and tariffs to guarantee fair and stable prices to marginalized small-scale producers, food processors, and small food enterprises. Prices should allow small-scale producers, artisans and food workers to earn a decent income, invest and build their livelihood assets.
- Mechanisms to ensure that the real costs of environmental damage, unsustainable production methods and long-distance trade are included in the cost of food and fibre.
- Clear and accurate labelling of food and feedstuffs, with binding legislation for all companies to ensure transparency, accountability and respect for human rights, public health and environmental standards.
- Restrict the concentration and market power of major agri-food corporations through new international treaties, competition laws and adoption of more flexible process and product standards.
- International collaboration for more effective antitrust law enforcement and measures to reduce market

The end goals of trade rules and aid should be re-oriented so that they contribute to the building of local economies and local control, rather than international competitiveness

concentration in different parts of the global food system (concerning seeds, pesticides, food processing and retailing, for example).

- Cooperation to ensure that corporations and their directors are held legally responsible for breaches in environmental and social laws, and international agreements.
- Multilateral cooperation to tax speculative international financial flows (US $ 1600 billion/day!), and redirect funds to build local livelihood assets, meet human needs and regenerate local ecologies.

V. CONCLUSION

Much of the Millennium Development community sees development as a process in which there will be a reduction in the number of people engaged in farming, fishing and land/water-based livelihoods. It is assumed that small-scale food producers, rural artisans, food workers and many of the rural poor will inevitably migrate to urban areas and find new and better jobs.

It is becoming increasingly clear that there is a direct relationship between the vast increases in productivity achieved through the use of automated technology, re-engineering, downsizing and total quality management, and the permanent exclusion of high numbers of workers from employment, in both industry and the service sector

Indeed, most international and national social, economic and environmental policies envision fewer and fewer people directly dependent on localized food systems for their livelihoods and culture. Encouraging people to move out of the primary sector and get jobs in the largely urban-based manufacturing and service sectors is seen as both desirable and necessary – regardless of the social and ecological costs involved. This view of progress assumes that history can repeat itself throughout the world. However, it is becoming increasingly clear that there is a direct relationship between the vast increases in productivity achieved through the use of automated technology, re-engineering, downsizing and total quality management, and the permanent exclusion of high numbers of workers from employment, in both industry and the service sector. This erosion of the link between job creation and wealth creation calls for a more equitable distribution of productivity gains through a

reduction of working hours, and for alternative development models that provide opportunities and local spaces for the generation of use values rather than exchange values.[25]

The social and ecological potential of local food systems and organizations must be seen in this context. While neither perfect nor always equitable, locally determined approaches and organizations play critical roles in sustaining farming, environment and people's access to food. In order to achieve the MDGs for hunger alleviation and environment, local organizations should be centrally involved in managing and governing local food systems. Linear views of development and narrow assumptions about "progress" and "economic growth" must be replaced with a commitment to more plural definitions of human well-being, and diverse ways of relating with the environment.

25. Gollain, F (2004) *A Critique of Work: Between Ecology and Socialism*, IIED Institutionalizing Participation Series, International Institute for Environment and Development, London; Gorz, A (2003), *L'immatériel. Connaissance, valeur et capital*, Galilée, Paris.