SUSTAINABLE DEVELOPMENT IN EL SALVADOR: PRINCIPLES AND PRACTICE

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The concept of sustainability is often invoked but means very different things to different people and for different academic disciplines. For corporate economists, for example, it means sustained economic growth that will yield ongoing profits. For ecologists it involves the maintenance of natural systems—wetlands, forests, wilderness, air and water quality. For environmentalists it means using only renewable resources and generating low or non-accumulating levels of pollution (Pearce, Markandya and Barbier 1990). Many concerned with environmental economics have noted the intrinsic contradictions between the linear expansionism of neoliberal economics and long-term sustainability (e.g. Daly and Cobb 1989; Henderson 1991; O'Connor 1994). Maria Mies (1993, 252) argues that for countries of the global South to follow the development model of the industrial North there would need to be two more worlds: one for the necessary natural resources and the other for the waste.

A more sustainable future for both the global North and South means rethinking current cultural and economic systems and priorities, and emphasizing ecologically sound production. Vandana Shiva (2005) calls this process "earth democracy". It implies:

- funding available for development that is culturally appropriate, economically viable and ecologically sound;
- reduction of poor countries' foreign debt;
- local control over transnational corporations;
- valuing unpaid domestic and caring work, often the responsibility of women and a key aspect of sustaining home and community life; and
- changing mainstream definitions of wealth that emphasize materialism and consumerism.

Central America: Current Economic Context and Sustainable Development

Despite some significant differences of history and culture, Central American countries share enduring legacies of colonization and face severe economic pressures compounded by the structural adjustment policies of the last twenty-five years.

- Impersonal, aggregate data such as inflation rates and GDP growth rates may make structural adjustment policies look rather positive. However, for many people the effects have been extremely negative. Only small élite groups have benefited by the incorporation of these countries into the global economy, and inequality in the region has increased.
- Economic growth rates are generally sluggish, and what growth has occurred has not benefited people living in poverty.

- Due to the deregulation of labor markets, jobs have become more insecure and unprotected. As a corollary, the informal sector has grown.
- As cheap food imports flood the market, Central American farmers are going bankrupt and are forced off the land. They also lack access to credit.
- These nations' borrowing needs are met by short-term capital flows ("hot money"), which lead to new levels of instability when investors pull out abruptly.
- These changes have placed increased burdens on women who now have to deal with competing pressures of the home and workplace (Green 2003).

Moreover, the Central America Free Trade Agreement (CAFTA) has led to new economic and social pressures. CAFTA provides for a free-trade zone between the United States, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and the Dominican Republic. It is expected to benefit large businesses but to negatively affect local producers and the region's ecosystem. General living conditions continue to decline, with growing hunger crises in rural areas.

Throughout Central America, Latin American, and the Caribbean workers' organizations, environmentalists, feminists, and religious groups are campaigning for better pay and working conditions and for economic development that is environmentally sound. They are protesting the poverty caused by external debt and structural adjustment policies imposed by the IMF and World Bank. They successfully opposed the Free Trade Agreement of the Americas (FTAA). Subsequently the United States has sought bilateral "free-trade" agreements with individual countries as well as CAFTA.

1. ***Sustainable Development: Problems and Challenges***

Central American and Latin American countries share a range of challenges for sustainable development. According to Todaro and Smith (2006) such problems include poverty, population growth, rural-urban migration, and current economic policies. These authors emphasize the importance of links between environmental issues and economic development programs.

- Economic necessities force poor people in the agricultural sector to adopt unsustainable patterns of living. Communities may end up destroying their means of subsistence, even knowingly, though certainly without wishing to do so. Environmental degradation may lead to increasing use of marginal land which in turn causes falling productivity in farming and lower per capita food production. Landless people may move into ecologically sensitive areas, farming steep slopes, for example, which leads to increased soil degradation and soil erosion in times of heavy rains, leading to mud slides and so on.
- Increasing population density leads to land, water, and fuel wood shortages. In many less developed countries, population is growing more rapidly than increases in food production.
- In urban areas population is growing rapidly as a result of rural-urban migration. Public facilities such as piped water and sewerage systems are currently totally inadequate. Exposure to high concentration of toxic pollutants in air and water is a major problem in Latin American cities.

- Development programs reach a selective group of people. Fertilizer and pesticide subsidies benefit big farmers, and promote monocultures that deplete soils and discourage use of sustainable methods. Moreover, the emphasis on producing cash crops for export means that the cultivation of subsistence crops for local consumption suffers in terms of land, labor and available water supplies.

2. *Suggested Policies for Sustainable Development*

These authors suggest a variety of policies to achieve sustainable development, including economic policy, community involvement, policies directed toward women, and environmental policies:

Economic policies. These should include appropriate resource pricing and the creation of economic alternatives for poor people. Most public policy proposals suggest that sustainable development projects need to generate income generation and formation of market linkages for the direct producers. Market attributes that can serve the purpose of sustainability should be engaged.

Community involvement. Projects should be designed to assist community development and access to information regarding land-use issues and economic, environmental and health impacts of development. Projects must ensure effective citizen participation and the protection of cultural values.

The role of women. Sustainable development projects can be an effective way of raising the economic status of women. Since it is mostly women who take care of household resources and public goods like water and fuel wood, women's integration into sustainability programs is crucial.

Environmental policies. Research indicates that the distribution and use of resources must change to halt environmental degradation. Sustainable development projects should be designed so as to safeguard the region's natural environment and the health and diversity of the workforce. They should include effective citizen participation in sustainable water-use policies. Drawing on, and nurturing the knowledge and experience of local people who have managed to survive despite adverse conditions is essential. In general, there is a need for many more groups to take environmental policy seriously.

El Salvador Case

Vital Statistics

- Population 6.7 million (2005). 36per cent are under age 15.
- GDP per capita $5,100 (2005).
- Main exports: *maquila* products and coffee.
- Main agricultural products: coffee, sugar, corn, rice, beans, oilseed, cotton, sorghum, shrimp, beef and dairy products. Main industries: food processing, beverages, petroleum, chemicals, fertilizer, textiles, furniture, light metals.

- Received IMF and WB aid during the 1990s, following 12 years of civil war.
- The pattern of booms and slumps has been similar to other countries in Central and Latin America: A slump in 1979-1982 followed by a recovery in the first half of the 1990s.
- US military and economic aid in the 1980s and 90s, and subsequent remittances from overseas workers have kept the country going without needing to acquire high levels of debt.
- The average growth rate was 3.6 per cent in 1995-1999. The Salvadoran economy is strongly dependent on external factors such as international coffee prices and the *maquila* industries. Such business owners are always looking for the most profitable labor and market conditions, and may decide to move elsewhere.
- Labor force by occupation: 17.1per cent in agriculture, 17.1per cent in industrial jobs, and 65.8per cent in services.
- Unemployment rate is 6.5per cent overall, with significant underemployment throughout the economy (2005 estimate)
  (CIA *World Fact Book*)

Colonization, Inequality, Civil War

A former colony of Spain for almost 300 years, El Salvador's economy was based on cash crops for export for many decades, especially coffee and sugar. Historically, peasants and workers organized to change the gross inequalities that characterized the country since colonization. These efforts met severe government repression. From 1980 to 1992 insurgents joined forces under Frente Farabundo Martí para la Liberación Nacional (FMLN) and launched an armed struggle against government troops seeking land redistribution and greater democracy through armed struggle. The United States backed the government troops and provided huge military and economic aid.[1] An estimated 80,000 people were killed and 7,000 more "disappeared" (Ready, Stephen and Cosgrove 2001, 184). Over a million were displaced. In many areas it was too dangerous to plant or tend crops, and people fled for their lives, some to Honduras, Mexico, or the United States.

A military stalemate brought the two sides to negotiate a peace settlement in 1992, which included political changes, downsizing the military, demobilizing left-wing forces, and the legalization of the FMLN as a political party. A United Nations truth commission that investigated human rights abuses during the war in El Salvador found that the government and government-sponsored death squads had committed 90 percent of the atrocities, while also condemning FMLN violence. It admonished The Nationalist Republican Alliance (ARENA) government to set up a legal process to deal with war crimes. Instead, the government pushed an amnesty law through parliament in 1993 (Rubin 2004).

Economic Reconstruction with Neoliberal Policies

Economic reconstruction has been slow and uneven with little improvement in the nation's persistent inequality. The ARENA government, which came to power in 1989,

has implemented neoliberal structural adjustment policies and is committed to "free market" principles. Economic policy has favored the financial sector, the import intensive urban-based economic activities, and the *maquiladora* factories established mostly around San Salvador. The agricultural sector has been neglected. The government hopes to stimulate the sluggish economy through *maquila* exports and by encouraging foreign investment. Trade and investment have been liberalized and state enterprises and banks have been privatized (Green 2003, 242).

Domestic demand has been kept up with the remittances from Salvadorans working abroad and not through increases in production. As Rubio and Hansen-Kuhn note "[economic] growth has been based much more on consumption than on production, on demand fueled by resource flows from abroad rather than on domestic supply, and on speculative rather than productive activities"(Rubio and Hansen-Kuhn 1995, 2**)**. Following the liberalization of finance and trade, only a small group of people in the financial and export sectors have been enriched, while the majority of the population, the rural populations, industrial and service-sector workers, public employees and small-scale businesspeople were marginalized. The landless peasants and small-scale farmers have been affected most. El Salvador's income distribution has been very poor historically. For decades the economy was controlled by about fourteen families. This situation has not changed much currently. The recent policies have not overcome the chronic poverty. In 2003, 48.3 per cent of the population lived below the national poverty line (UNDP). El Salvador still plagued with a highly unequal income distribution: In 2002 per capita income of the wealthiest households was 24 times higher than that of the 20 per cent poorest households, and in 2004 the poorest 20 per cent of the population received only 3.1 per cent of the nation's income (USAID).

Migration has been one important strategy of poor households to deal with these economic adversities. Approximately 20 percent of the Salvadoran population is estimated to have emigrated abroad (Lauria-Santiago and Binford 2004, 10). They send monthly remittances to relatives back home, estimated at $ 2.8 billion a year (Aizenman 2006, A17). Remittances made up 16 per cent of GDP in 2004, and 67 per cent of El Salvador's foreign exchange, compared to the *maquila* sector (16 per cent) and agro-exports (6 per cent) (Rosa 2004, 2). These transfers are an important source of income for the families that receive them. A third of the rural population survives due to remittances from abroad. Many families are totally reliant on these remittances.[2] Approximately 2.5 million Salvadorans—about one third of the total population—now live abroad, primarily in the US, where they work in construction, landscape gardening, child-care, domestic work, restaurants, and other services. The trade deficit, which reached $3 billion in 2005 as a result of import-intensive urban-based economic activities, is balanced by these remittances and foreign aid (CIA, *World Fact Book*). In 2001, the US dollar became the basic currency, which means that El Salvador has lost control over its monetary policy. Economically and politically, El Salvador is closely linked to the United States.

The ARENA government was the first to ratify the Central America Free Trade Agreement (CAFTA), which is expected to benefit large businesses and to open up Central American economies to increased exploitation by US-based companies and to

further damage the region's ecosystem. Strong ties with the United States enabled the Salvadoran government to negotiate Temporary Protected Status for some of the overseas workers in the US after a devastating earthquake wiped out homes, farms, and jobs in El Salvador in 2001. In August 2003, El Salvador committed 360 soldiers to the war in Iraq (Garamone 2004).

The Crisis of the Agricultural Sector

Land distribution that started in the 1980s and accelerated after the war has slightly improved the economic situation of the rural poor. The Land Transfer Program (Programa de Transferencia de Tierras--PTT for its Spanish initials) distributed land to about 22 per cent of rural households (Reed 2005, 6). However, the crisis of the agricultural sector has been deepening as a result of neoliberal policies. One indicator of this is the erosion of agricultural wages. Before the civil war coffee exports were the backbone of the economy, but when world coffee prices slumped dramatically[3] one policy response was to freeze harvest wages. In the face of inflation this policy led to a decline in real wages and lower purchasing power (Gómez et al. 2002, 8)

Another problem is the instability of agricultural employment that compels rural people to get jobs in non-agricultural activities. Between 1980-2000, non-agricultural employment in rural areas increased from 39 per cent to 53 per cent (Gómez et al. 2002, 1). Also, the number of the landless or land-poor people is still significant in El Salvador. In mid-1990s there were still about 350 thousand rural people who had no land or who were land-poor. Their situation is even more precarious because they do not have the sense of empowerment[4] experienced by the people who received land, albeit very small plots.

Signs of chronic poverty are seen everywhere in rural areas. The rural poor of El Salvador live in totally inadequate houses that are little more than shacks, often without running water, sewage systems or electricity. The roads off the main highways leading to villages in remote areas are very poor. Data indicate that rural poverty is much higher than urban poverty. In 2001, after the earthquakes, 40.2 per cent of people in urban areas lived in poverty while a much higher proportion of the population (66.4 per cent) was considered to be poor in the rural areas (UNDP 2001, cited in Gómez et al. 2002, 6).

Family and Social Disruption

During the war, adults and children witnessed—and committed—terrible atrocities. An "estimated 80 per cent of government troops and 20 per cent of FMLN recruits were under 18 years of age" (Hertvik 2006). Unknown numbers suffer from injuries and war-related trauma. Women were profoundly affected by the civil war as those responsible for generating household income, caring for children, and finding medical help, food, and shelter for their families. During the war up to 51 percent of households were headed by women (Ready, Stephen and Cosgrove 2001, 184-85). Some had to leave their children in the care of others or send them abroad for safety as government forces made a practice of abducting infants and young children. Thousands of women were killed. Hundreds of thousands lost family members, and suffered rape, abuse, and torture by the military,

government security forces and death squads. Many elderly people, especially women whose husbands and children were killed, have no family support. In many communities people currently report increasing gang-related violence, a manifestation of ongoing poverty and a culture of violence.

Environmental destruction

El Salvador is faced with a variety of environmental problems ranging from water shortage and pollution to deforestation and soil erosion. Deforestation has been a serious problem.[5] Over many decades, the rural population has moved into forested land and cut down forests due to the shortage of land available to them. The rural poor (and many urban poor) also use wood for cooking. Deforestation leads to water shortages in rural areas because the soil will not hold water. Soil erosion in turn silts the rivers, which impacts the generation of hydroelectric power and the supply of water to the San Salvador metropolitan area (Dye et al. 1997, 42). The war and the lack of subsistence means in rural areas has led to extensive migration to San Salvador where the water system is faltering under increased demand. On the one hand, water shortage cause drought-like conditions in some areas, on the other hand severe rains may lead to mudslides due to soil erosion. In rural areas lack of clean water is a major cause for child deaths. All rivers are contaminated because human waste dumped into water is not treated. Another problem is the contamination of soils from the usage of toxic pesticides and disposal of toxic wastes. Gómez et al. (2002) explain that despite the foundation of MARN (Spanish acronym of National Parks and Protected Areas, and the Institutes of Meteorology and Hydrology) environmental management is not a priority within the governmental agenda.[6]

Lessons from Rural Sustainable Development Projects

An examination of several "information-rich" cases of sustainable development provides data for analysis of their strengths and weaknesses. We consider 3 cases: Chalatenango (El Salvador), Ganados del Valle (New Mexico), and a range of projects we observed as part of our field work in Chalatenango, La Libertad, Nahuizalco, and Santa Ana. Longer reports of these case studies are presented in appendices.

Goals

Organized communities have developed goals for appropriate and sustainable development. In the case of Ganados del Valle (NM), these included

- employing the cultural skills and resources of the region
- expanding business and professional opportunities for local people
- providing year-round jobs
- respecting the physical constraints of the environment

Similar goals are mentioned in the literature on post-war repopulation of towns in Chalatenango, and clear from our observation of several projects concerned with sustainable development/communities.

Analysis of Major Challenges to Sustainable Development

Poverty. In each case, poverty and lack of control over prevailing economic policies and conditions is a major factor. Agriculture cannot provide an adequate livelihood due to lack of land and small land holdings. In El Salvador, this is due to centuries of colonial appropriation of land and resources, concentration of land holdings, as well as the disruptive effects of the civil war. In New Mexico, land speculation, competing land uses such as tourism, and Hispanos' non-market attitudes towards resources are also salient (Pulido 1993, 128).

Threats to the physical environment. This is a major factor in all cases. In Ganados del Valle it includes control of land and water for agriculture as incomers have appropriated traditional lands, despite provisions of earlier land grants. In El Salvador, deforested soils are thin and infertile through overuse of chemical pesticides and fertilizers. Intensive farming on steep hillsides has led to soil erosion. Water supplies are often contaminated by bacteria, as well as chemical pesticides and fertilizers.

Family and social disruption. In New Mexico this involved the erosion of traditional cultural practices. In El Salvador the civil war devastated families and communities. In Chalatenango, Morazán, San Vicente, and Suchitoto, people had to flee for their lives as government forces waged war on these regions, following the adage: "dry up the lake to catch the fish." Most people now living in the Department of La Libertad, for example, have moved there since the war.

Loss of young people who move to urban areas, or overseas in the case of El Salvador, to find work.

Geographical isolation. This is true of northern New Mexico and Chalatenango.

Available Resources

Local people's skills and knowledge e.g. subsistence cultivation, raising livestock (sheep in New Mexico, cattle and poultry in El Salvador), handicrafts (e.g. weaving), living on the land in these harsh regions, knowledge of medicinal plants.

Cultural values e.g. family and community cooperation, respect for the natural world.

People's willingness to learn new skills (e.g. business and marketing in New Mexico; new farming methods and permaculture in El Salvador as well as business skills).

Local leadership with vision as well as being rooted in community values and ways of life. María Varela (community organizer/planner) Antonío Manzanares (sheep herder and former teacher) and Guercindo Salazar (school teacher and part-time rancher) were key initiators of Ganados del Valle. In El Salvador, board members of CCR (Chalatenango Coordinating Committee for Development-- formerly Coordination of Communities and Repopulation) and people who have attended CCR leadership trainings have been crucial

to community development efforts in Chalatenango. Juan Rojas, permaculture expert, and Marta Benavides, community worker and minister, are other examples.

Organizing and educational experience In El Salvador, strong social movements developed in the 1960s with rural cooperatives, grassroots Christian communities, and labor unions. Peasant training centers (*centros de formacion campesina)* or peasant universities (*universidades campesinas*) were established for rural people. In New Mexico local people had experience in organizing around a land-grant struggle and establishing a local clinic.

Outsiders committed to working with local people and serving their agenda In New Mexico this included Rachael Brown, a professional weaver, Prof. Lyle McNeal, expert on Churro sheep, the Ms. Foundation economic development program, and consultants who gave advice on wool washing and dyeing. In El Salvador this includes Karen Inwood, community organizer and Director of the Permaculture Institute; NGOs like CRIPDES **(**Christian Committee for Refugees and the Displaced), Sister City partners in the US and Canada, World Wide Fund for Nature (WWF); Just Coffee, a fair trade coffee merchant (Madison, WI).

Physical resources. In El Salvador people have access to land, despite its being seriously depleted in many cases. In Los Ojos, New Mexico, there were underused old buildings.

Activities and Programs

In New Mexico, Ganados del Valle gradually developed a range of agricultural support programs to help small growers overcome disadvantages of small economies of scale. Members own expensive breeding rams in common, for example, and growers pool their flocks during the breeding season. Cooperative grazing pools flocks under one shepherd, with members sharing payment for this service. Technical assistance includes marketing, product design, management, business finance, and livestock management through workshops, classes and consultations. Various loan funds, a college program, and scholarship fund support individual and family enterprises and educational development.

Long-term sustainability requires greater access to land. Ganados' vision is to restore the commons and sustainable grazing practices through a land trust that will acquire grazing lands and development rights.

Sargent et al. (1991, 207-212) identify four principles of sustainable development practiced by Ganados del Valle:

1. Emphasizing Human Development. Ganados recognizes that human development is a long-term, labor-intensive process. They sought consultants who were successful entrepreneurs, understood the market, had respect for and wanted to build on cultural skills in collaborative teaching, and with expertise or willingness to find technical solutions fitting the scale of operations and resources available (Sargent et al. 1991, 207). Later, local people became their own experts, teaching others from the village and

surrounding region. Advanced weavers took apprentices. They organized college credit through UNM for Tierra Wools' own course. They emphasized professional development for members.

2. Local Control of Resources. Ganados created a local market for weavings and organic lamb. In 1986, members helped the county government to strengthen subdivision regulations aimed at conserving agricultural land and water resources. Adequate summer grazing is essential for the expansion of flocks. Ganados has been involved in negotiating for use of state-owned forestlands currently used for hunting, administered by the NM Department of Game and Fish, and part of the long-disputed common lands of the land grant (Jackson 41). Ganados proposed a research project to explore the positive effects of grazing as a management tool for wildlife habitat. They resorted to direct action and moved flocks onto a Wildlife area when NM Department of Game and Fish refused. This is a key issue for reliable planning, future expansion, and sustainability.

3. Increasing Internal Investment. Various community loan funds provide seed capital and a livestock shares program increases agricultural activity. The Feed and General Store in Los Ojos keeps dollars in the local economy.

4. Changing economic and social structures. The goal is to change economic and social structures in order to increase opportunity and reduce dependency. The group found a broader market for lamb, reorganized production, and learned new skills. Members and residents began to see "what they can do for themselves, what women can do in business, the economic value of small family farms and traditional cultural activities" (Sargent et al. 1991, 211).

In Chalatenango, many communities have formed ecological committees. Residents have supported PRISMA (The Salvadoran Research Programme on Development and Environment) to prevent the building of a dam on the Lempa River in Nueva Concepción, which would have led to the destruction of many communities. In San Antonio Los Ranchos and Guarjila, they have worked with a local environmental group, Unidad Ambiental del Cerro Alto, to plant forests, protect water sources, and reduce soil erosion and landslides. The Guarjila committee has been remarkably successful. In order to protect existing forests, they have planted trees for firewood, complementing this effort by distributing efficient wood-burning stoves. Almost all households now use these stoves. They have also provided all families with fruit and shade trees (Peterson, 66).

Farmers have also started to learn more about sustainable agriculture methods. CORDES (Foundation for the Communal Development of El Salvador) and other organizations are encouraging families to move away from mono-cropping which leads to soil exhaustion, and to use their land for vegetable gardens, perennial herbs, fruit trees, or trees for shade and firewood. Many communities now use terracing to prevent soil erosion. To the extent that they can afford, they are experimenting with crop rotation methods to overcome soil exhaustion. Many farmers have stopped burning the fields and started to use organic materials as mulch. CORDES has a women's project, "Circle of Integral Education," training women in kitchen gardening and sustainable agriculture. Communities are

experimenting with alternative methods of weed and pest control, and waste recycling; they are using compost and organic fertilizers. In Guarjila, residents have launched a campaign to stop the use of insecticide containers for carrying water. However, residents have not completely reduced their reliance on chemicals. They know the harmful effects on human and environmental health but still use them in an attempt to get the most out of poor soils.

Extensive experimentation in sustainable agriculture (or agroecology) has been carried out in the La Montanoña repopulated communities, created through the postwar Land Transfer Program.[7] Because most of the land is not suitable for traditional agriculture, La Montanoña residents had to come up with innovative ways of producing food without harming forests and water sources. To this end they shifted from growing grain to vegetables and wood products. They worked closely with NGOs and agricultural experts to limit soil erosion, reduce the use of chemical pesticides, and create economic diversification. One remarkable effort has been their engagement in national politics to require El Salvador's water company to pay farmers for conserving water through improved soil protection. In Latin America, there is a movement toward linking environmental protection and rural livelihoods, which calls for payment to farmers for environmental services. These efforts in La Montanoña are a good example of this movement.

Cooperatives teach residents various skills and produce goods needed in the area and in other communities. Some goods are sold as far away as San Salvador. In Guarjila, for example, carpentry, embroidery, sewing, bicycle repair workshops and bakeries have been set up. Guarjila also has a community radio and a community-supported project for drying locally grown fruit using a solar dryer.

Field Work Observations

1. The Permaculture Institute, La Florida (La Libertad) started in 2000 and now works with 21 communities to create sustainability based on permaculture principles and methods. They consider themselves a grassroots farmers' organization. The Institute does not go into communities with a project like most NGOs do. They warn farmers they will not bring them anything for free to discourage a culture of dependency. They also make it clear that quitting chemicals will mean more work. As a teaching/educational institute their focus is on demonstration projects not on building things for people, but helping them to identify sources of support. The overall team consists of 9 promoters, a fieldwork coordinator (full time), a women's coordinator, a Salvadoran co-director (part time), an accountant, and an assistant administrator. A volunteer biology teacher is translating materials on deforestation into Spanish. The initial focus is on soil conservation and techniques to improve the land (composting, green manures, stop burning and using chemicals).

The Institute's distinguishing feature is its "farmer to farmer" methodology, first started in Guatemala, then applied in Mexico and Nicaragua, and reborn in El Salvador. Oxfam and other NGOs were instrumental in developing this method. The Institute trains

promoters in permaculture, who then train the farmers. Farmers feel comfortable with the promoters rather than working with technicians who have been educated in universities. Training happens at two levels: permaculture principles for promoters and permaculture design for community leaders. The Institute's educational approach includes explaining reasons for current conditions (e.g. the fact that a few seed and fertilizer companies dominate the market is linked to globalization and activities of agribusiness; conventional farming practices have led to deforestation and impoverishment of the soil etc.). The Institute is preparing its own Spanish-language materials with the help of agronomists, based on their experiences of how the farmers learn and link information.

The Institute is currently working on water projects with 9 communities in different parts of the country. This includes soil analysis, an assessment of water sources (usually rivers or springs), and testing for chloroform bacteria. They will teach ways of improving water systems through rainwater harvesting, improving the quality of the current system, and building dry composting latrines. The Institute also undertakes women's projects. These include creating home gardens to improve family nutrition; showing women how to build wood-saving stoves; making natural shampoos and home remedies from medicinal plants; and exchanges where women's groups meet together. Recently they have started a women's project with the Women's Association of Tecoluca as a way of expanding their work.

The Institute's success can be attributed to the following factors:

- an organizational culture which includes working as a team and "farmer-to-farmer" methodology, and an emphasis on community organization.
- Karen Inwood, a dedicated community development worker, committed to working closely with local people and training local leaders.
- securing outside funding for construction (through the Interamerican Foundation) and current programs (UK Methodist Relief and Development Fund and National Lottery Fund).
- political neutrality-- not linked with any faction of the FMLN.
- pulling out of the community if people do not do what is necessary to succeed.

Karen Inwood also emphasized two other factors: political awareness of communities and involvement in the continuing struggle for land and rights; and indigenous communities' ways of doing things and valuing of a collective spirit. The Institute plans to expand by building demonstration plots, constructing a bigger building (as a series of workshops), and educating NGOs, local governments, and the FMLN in the importance of permaculture methods for sustainability.

2. Comunidad de Permacultura, La Florida

This community is next to the Permaculture Institute and connected to it historically and legally. There are 26 families, 140 people (70 per cent of them under 18). Everyone living here was traumatized by the war and displaced by it. Their goal is to recover the land, make it productive, and settle their families. People grow coffee, maize, tomatoes, beans, and many fruit trees. Juan Rojas, a permaculture expert, came in 1998 to introduce

organic agriculture, working under the umbrella of the Christian-based communities network.

A severe earthquake in January 2001 damaged several houses. They undertook reconstruction using permaculture principles. This involved installing an electric mill to grind corn; filling in holes in the road; constructing composting latrines; making water tank catchments; and making wood-saving stoves. This took 2 years and cost $75,000. The transition from conventional coffee production to organic production took 3 years. The communal property was 90 hectares. Initially the land was used collectively but after the transition to organic coffee people wanted individual plots, though these are small. They don't have time to work the communal land any more. Some people take work outside (e.g. domestic work in San Salvador). They have a clinic and a small store.

3. Juan Rojas' Permaculture Demonstration Project

As well as working with Comunidad de Permacultura, Juan Rojas has his own demonstration plot nearby. He has dug swales along contour lines to store and filter water. The soil is fertilized from the composting toilet, worm box, animal droppings (sheep-goats), kitchen waste, and mulch. Mulch also keeps down weeds and stops the soil drying out. Juan uses orange peels, coconut fronds, coconut shells, eggshells etc. for mulch. He uses companion planting principles e.g. tomatoes do well near carrots but not next to onions. He knows every plant, every tree; nothing here is random.

He has dug out a lot of yellow bamboo (an invasive, non-native species), but left some downstream of a laundry area just outside his boundary. The bamboos filter the laundry soap and bleach. He has set up a rainwater catchment system. He has built up terraces and steps using old tires, held in place by wooden pegs. He cultivates a rainy season vegetable garden, grows perennial herbs, medicinal plants, many fruit trees, coffee, avocados, neem, cinnamon, and firewood trees (from India).

4. Chalatenango Coordinating Committee for Development (CCR)

CCR is a grassroots organization founded in 1988 and partnered with CRIPDES. It was at the forefront of "repopulations" when those displaced by the war decided to return to their homes. CCR's main focus is on organizing and training grassroots leaders as well as people who are elected to political office locally and at national level. It currently works with 100 communities and with more than 40 different women's groups in these communities.

The government neglects this region as it supported the FMLN during the civil war. The Chalatenango hospital, for example, has no basic supplies like syringes and antiseptics. Patients have to bring their own. Since the signing of Peace Accords in 1992 CCR has worked on development and formed women's groups, groups for healthcare, youth affairs, education, and so on. They use popular education techniques as they did during the war. A woman board member emphasized the importance of health care using natural medicines, first aid and physical therapy. They have a community radio program on natural medicine: "How to Cure Ourselves in Our Own Homes." They have many

experienced health workers because of the war, and want to start a clinic with doctors who are not affiliated with government hospitals.

By being well organized the communities have been able to resist the incursions of mining companies. In the past 2 years, 2 Canadian companies have been trying to explore mining possibilities in the region; 14per cent of Chalatenango is concessioned to them by the government. Local people are engaged in a coordinated campaign to keep their land, which they struggled so hard to obtain. Communities have taken control of the roads and established civilian checkpoints to obstruct the mining companies. Mining companies have not been able to get access to these lands since October 2005. CCR emphasizes the importance of strong organization, which allowed communities to survive and rebuild after the war. Current challenges are linked to this history of struggle.

In addition, CCR has developed its own NGO, CORDES ((Foundation for the Communal Development of El Salvador, mentioned above), which focuses on technical assistance, sustainable agriculture and food security. They offer technical support for coffee production-- systems for roasting, grinding, and solar-drying—as well as solar drying of fruits, home gardens, raising rabbits and chickens, how to construct a biodigestor and drip irrigation system. CORDES is working to organize direct exports, supporting farmers to get export licenses and negotiating with shipping companies. Currently, farmers get about $1.00-1.40 a pound for raw beans. They have formed processing cooperatives for roasting and sell it locally for $2.25 per pound. Women work at the roasting coop; coffee farmers are men. This way more profit stays in the family. Transport is not easy, however; they have to carry coffee for 2 hours in the bus.

CORDES has outside funding for its office building and programs. By contrast, CCR has little funding. Sometimes CCR can't pay the small Board stipends and Board members split what there is. But because people are elected by their communities, they make sure they keep going to carry out their responsibilities.

5. Las Vueltas

This town was resettled by people from refugee camps in Honduras. The community collectively owns a piece of land (150 he) above the dam that feeds San Salvador. They are trying to get compensation from the government for taking care of the watershed but have not been successful yet.

The mayor, Rosa Cándida explained that their goals are to strengthen development using a small fund from central government plus some help from international NGOs. This year they are improving their clinic and school. They need funds for roads and infrastructure. They are part of La Montañona, protecting the lungs of Chalatenango. They have a water improvement project and are planting trees. Future goals include a high school, a better solid waste treatment facility, expansion of the center for children with disabilities, eco-historic tourism, policies for women, and stronger community organizing and participation. Town council members also stressed the importance of agricultural production. Local experience with alternative agriculture hasn't been profitable so they

are emphasizing food security for families–beans and corn. They need local markets and are working with CORDES to learn how to improve their methods and technologies.

6. San José Las Flores

San José Las Flores was one of the first repopulated communities during the civil war. In 1986, 24 families returned from a refugee camp on the outskirts of San Salvador. It took 4 days for them to pass through the military checkpoints. The military said: "We can't guarantee people's safety". People slept in the church that had been bombed out under a half-torn roof. It was the rainy season.

After they returned, people couldn't work alone for security reasons. They were under constant threat from the army. Therefore they moved around together all the time as they planted crops and worked in the fields. Much has been built or restored—the church, town hall, stores, a pizza stand. A key part of their development strategy has been the creation of coops, may of them run by women, including the community diner, a grocery store, bakery, sewing and weaving workshop, pharmacy, dairy, and chicken farm. They feed 200 head of cattle on community land.

The current struggle is for sustainable communities in the face of oppressive government policies. Such communities would provide opportunities for young people, safety, and autonomy. People in FMLN areas have to do everything themselves (e.g. schools, governance structures) with very little government support. San José Las Flores is a leader in organizing against the mining companies.

San José Las Flores has received support from organizations like CRIPDES, formed to help bring back refugees and repopulate towns. CRIPDES facilitated Sister City relationships in Canada and the US. Cambridge is a Sister City with San José Las Flores and continues this support. CRIPDES is making efforts to link the anti-mining struggle to foreign stockholders in the companies. Coalitions have formed to expose the reality to stockholders in the US and Canada. Another strategy has been a "Dear Colleague" letter from some US Congress members citing $462 million in aid to the ES government for development of the northern region of El Salvador. The letter advises ES Congress that they should stop the mining research and explains that the US gave this money to improve the environment, water supplies and tourism, and that mining is not compatible with such efforts.

The success of efforts of San José Las Flores' and other communities in Chalatenango can be attributed to:

- being well organized from the start, effective leadership, and resisting the army's efforts to weed out the leaders.
- continuing to work effectively together often with a cooperative model.
- working together as a region. In 1989, when the army fired on these communities with mortars, saying they were shooting at guerillas, people took Chalatenango City.
- Interest and support from Salvadoran NGOs as well as from outside the country.

7. Ecological House, Nahuizalco and Peace Museum, Santa Ana

These small educational projects are both based in old buildings that have been repaired and cleaned up for community use. They both demonstrate creative uses of recycled materials. Their goals are to help build sustainable communities, to foster new ideas for living simply and in ecologically sound ways. The make connections among local issues and needs, national policy, and efforts of international NGOs or UN programs.

The Ecological House serves as a community space, museum/gallery, and meeting room. It provides (part-time) employment for a couple of people. Others volunteer. It was started some 15 years ago by Marta Benavides, a minister and community worker, who chose this town because it has a high proportion of indigenous people and is said to be the most violent town in the country. Every Sunday about 30 older indigenous women (widows) come for lunch after attending Mass in town. At Christmas and other special days (e.g. Mother's day) about 50 are served. Two volunteers prepare and serve food, talk to the women and check if they need additional help. Some Sunday afternoons there are sewing classes; people also come here to do artwork. There are books for teachers about other cultures. Every room is decorated with artwork, plates, and posters. In addition, a garden was created out of a former garbage dump. Water bottles are placed on a shelf to heat in the sun for purification. Marta has taught workshops here about land, water and recycling.

The Museum in Santa Ana opened in September 2006. It is an old house, with walls painted a happy yellow. It has a large inner courtyard, a dining room, kitchen, meeting room and guest room. One of the display rooms is dedicated to ecology. Another is the "global citizenship" room. Artwork from many different cultures is on display. The museum is free of charge and open Wednesdays-Fridays (10am-12 and 3-7pm); Saturdays and Sundays (3-7pm). The goal is to provide a calm space, open people up to new ideas, provide a place for community meetings and events. Three people work here part-time.

Factors Responsible for Success of These Projects

1. The vision, **c**ommitment, and hard work of those involved.
2. Sound community organizing based on local needs, experiences, and culture.
3. Development of appropriate teaching and training methods and materials.
4. Ability to raise grant money and to use available materials creatively.
5. Supporting sustainable development/communities by linking economic, environmental and cultural issues.
6. Finding markets for their products (high-end goods in the case of Ganados del Valle).
7. Creating opportunities for individuals to grow and develop.
8. Developing alliances with other communities wanting to create self-sustaining economies.

Difficulties and Obstacles

1. Hesitation of some individuals or families to join these efforts due to the failure of previous cooperative efforts or because they have no strong commitment to community culture.
2. Need for additional land.
3. Need to balance women's traditional responsibilities for housekeeping and childcare with income-generating work.
4. Learning unfamiliar skills and ways of thinking (e.g. book-keeping, marketing, permaculture etc).
5. Finding markets and transport for products (e.g., coffee and organic lamb).
6. Need for the government to recognize the importance of safeguarding resources such as water supplies and forests, and the value of non-invasive, sustainable methods.
7. Poverty and lack of local opportunities means that many people in El Salvador are drawn to work abroad. In New Mexico young people move to cities.
8. Food scarcity and lack of income may mean that people cannot conserve environmental resources (e.g. letting land lie fallow for a season or investing in alternative energy production which would be much more environmentally sound in the long-run). Getting organic certification for coffee would raise the selling price, but certification is expensive especially if coffee is grown in many small plots.

Conclusion

From our reading of the literature and these "information rich" cases we underscore the significance of sustainable development projects that incorporate cultural, economic, and environmental elements. These cases suggest important questions for sustainable development projects in comparable situations:

- How to analyze local needs? Who defines the issues and problems?
- What are effective strategies to address the issues?
- What are effective decision-making strategies and structures for sustainable development projects?
- What pitfalls and problems need to be avoided, if possible?

We plan to use the framework and insights noted here in our future work on sustainable development – in teaching, research, and writing, and also as allies in solidarity with people who are working toward sustainable development projects and communities in El Salvador and elsewhere.

Endnotes

[1] The aid had reached $4.3 billion by 1992 when the war ended.
[2] For those who receive remittances, the funds represent 40-60 per cent of total household income (Rosa, 2004, cited in Kandel et al. 2006, 98).
[3] A key factor was oversupply, mainly due to a massive increase in production in Vietnam, as part of economic rebuilding in the aftermath of the Vietnam War (Greenfield 2002).
[4] Studies show that people who own land are more resilient during crises, send their children to school for longer periods of time, and provide better nourishment for their children. 35 per cent of PTT beneficiaries are women, up from 11 per cent during the previous agrarian reform. This shows that gender equity somewhat improved with these land transfers (Deere and León, 2000, cited in Gómez et al. 2002, 22).
[5] According to the Permaculture Institute (2006, 3), the country has lost over 90 per cent of its forests.
[6] In 2001, MARN received a mere 0.18 per cent of the national budget.
[7] The micro-region of La Montañona in Chalatenango is made up of seven municipalities. Since 1998 these municipalities have come together in an association, the Mancomunidad of La Montañona. The area of this micro-region is 335 square kilometers, and it has a population of 51,124 (1992 census), of which 55 percent are rural. It is a hilly area with elevations from 300 to 1648 meters above sea level, very close to the nation's largest reservoir, the Cerron Grande (Kandel et al. 2006, 94).

Acknowledgements
The authors gratefully acknowledge support from a Blue Moon Fund grant through the Arthur Levitt Public Affairs Center, Hamilton College for this project. Thanks also to Prof. Erol Balkan for his insights and support, and to all who gave us their time and shared experiences in El Salvador.

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