

ENVIRONMENTAL ECONOMICS REALITY CHECK: A CASE STUDY OF THE ABANICO MEDICINAL PLANT AND ORGANIC AGRICULTURE MICROENTERPRISE PROJECT

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Abstract. This paper presents a case study of the Abanico Medicinal Plant and Organic Agriculture Microenterprise Project in the Arenal Conservation Area, Costa Rica. Microenterprise is the Sustainable Development and the Women in Development model for gender equity and environment of the World Bank, International Monetary Fund and large non-government organizations, like the World Wildlife Fund-Canada. The authors of this paper argue that debt-for-nature investment in microenterprise and ecological economic models are not distinct from neoclassical economic and development models that created the environmental, social and cultural crises in the first place. This case study shows that the world market accommodates only one model of development: unsustainable export-oriented production based on flexible labour markets, low wages, indebtedness and low cost production. Working standards in those micro-enterprises are eroded due to many factors, including indebtedness. What happened at a national level in non-industrial countries with the international debt crisis is now mirrored in individual indebtedness through microenterprise. Is current development policy creating a new form of indentured servitude? Medicinal plants, prior to commodification, were a source of women's power and upon commodification in international development projects, are the source of their exploitation.

Keywords: Abanico Project, debt-for-nature swaps, gender in development, microenterprise, non-government organization (NGO): Andar de Costa Rica, sustainable development, World Wildlife Fund-Canada

1. Introduction

After the Earth Summit every international project was required to have two components: sustainable development and gender in development. Sustainable development emphasized the need for continued economic growth to save the planet (WCED, 1987). Women in development criticizes the failure of economic development to recognize the productive role of women (Boserup, 1970). Women in development recast rural women into organized food producers for a growing number of international consumers. Micro-enterprises became the gender equity solution. During the 1980s, micro-enterprise discourse had the goals of improving the quality of life of their participants: credit was provided at rates lower than commercial bank rates, and education, training, support and commercialization



were supported through donations. Since the early 1990s, as a result of monetarist policies, loans to microenterprises have been provided at high interest rates, often above that of commercial banks, to cover the operational costs of these loans and guarantee capital return.

Since the microenterprise model is defined as an income generating activity for gender equity at the national level, it must be geared to the international market. Despite the discourse, microenterprise* enlarges export volumes and foreign capital to pay national debts. In abstract economic theory, it augments natural and human capital. In practice, it intensifies nature and worker exploitation.

Although modernization and the green revolution removed women from their work as medicinal plant keepers, the debt crisis, expressed in the permanent devaluation of currency and inflation, forced rural women back to medicinal plants and organic agriculture. The debt crisis was felt around the Third World Countries (TWCs) due to the United States monetary policy that increased interest rates and exchange rates from 4 to 16.6% between 1978 and 1982. Up until 1982, TWCs received approximately US\$460 billion from commercial banks, industrialised nations, the International Monetary Fund (IMF) and the World Bank (WB), in the form of low interest rate loans. As of 1988 almost three times that sum was paid back to the creditors, despite US\$2 trillion still owing (WB, 1996). In 1995, Latin America and the Caribbean alone sent US\$87 billion to the industrialised world, not the other way around (IMF, 1996). In recognition of the public outcry, resulting poverty and the devastating social effects of the mandatory stabilization of IMF and structural adjustment programs imposed by the WB, some loans were restructured and reduced. Since the late 1980s, the commercial banks and the multilateral institutions (IMF-WB), that previously made loans, have been replaced by an inflow of private portfolio funds and debt swaps. Debt swaps are financial mechanisms to repay debt by handing over ownership of national industries, public enterprises, bank assets, and nature. Debt-for-nature swaps** promote nature conservation through controlled new regimes of investment, enclosure, and the extension of the price system across space and time. Since the Earth Summit (1992), this instrument has allowed creditor countries to take control over debtor countries decision-making process around social and environmental issues. This paper discusses the microenterprise model of the Canada/Costa Rica debt-for-nature swap

* Microenterprise is also referred to as microcredit, particularly in industrialized countries.

** For further discussion please read Isla, Ana (2002) 'Enclosure and Microenterprise as Sustainable Development: The Case of the Canada/Costa Rica Debt-for-Nature Investment'. *Canadian Journal of Development Studies*, Vol. XXII. University of Ottawa, Ottawa. Isla, Ana and Terisa Turner (2001) 'Gendered Resistance to Corporate Environmentalism and Debt-for-nature Swaps in Costa Rica', in *Just Ecological Integrity: The Ethics of Maintaining Planetary Life*, Laura Westra and Peter Miller (eds), Rowman and Littlefield, New Jersey. Co-authored with Terisa Turner. Isla, Ana (forthcoming) 'Land Management and Ecotourism: A Flawed Approach to Conservation in Costa Rica', in *Natural Capital, Poverty and Development*, Adam Fenech, Roger Hansell and Kirk Hamilton (eds), Kluwer Publishing, Amsterdam. Isla, Ana (forthcoming) *Sustainable Development/Globalization in Costa Rica. An Eco-feminist view*.

(MOU, 1995). Using the debt-for-nature mechanism, Costa Rica retired 50% of its outstanding debt to the Canada's Official Development Assistance. Funds from this agreement were channeled to the World Wildlife Fund-Canada (WWF-C) to develop microenterprises in Costa Rica.

By 1996, using women's traditional knowledge about medicinal plants, governments and Non-government Organizations (NGOs) developed microenterprise projects in organic agriculture to raise foreign capital. Rural women became the preferred work force in organic agriculture for a number of reasons: their mothers and grandmothers have the knowledge of traditional ecological agriculture methods; they are located in strategic ecological zones; and, the devaluation of women's work provides cheap labour. Rural women since time immemorial have grown medicinal plants in rain forest areas. In the past, most rural women used medicinal plants to create sustainable food and health systems.

This paper presents a case study of the Abanico Medicinal Plant and Organic Agriculture Project microenterprise, called the Abanico Project in this paper. Data used in this analysis was collected in the process of Isla's doctoral dissertation on the impact of the Canada/Costa Rica Debt-for-Nature Investment – *An Environmental Feminist Analysis of Canada/Costa Rica Debt-for-Nature Investment: A Case Study of Intensifying Commodification* (2000). The *Abanico Medicinal Plant and Organic Agriculture (Abanico Project)* and Ana Isla participated in a Feminist Participatory Action Research (FPAR) project. By that time, women in the Abanico Project were already in economic crisis; hence they proposed to research the following question: Why are we working hard and why can we not improve our quality of life? After three months of intensive data collection, the research confirmed the women's experience that despite the fact that they have experienced some increased status and agency in the community, the members of the Abanico Project have suffered serious negative consequences from their involvement with the project (Isla, 2000). This article aims to show the limitations of microenterprise to promote sustainable agriculture, women and development, and to provide livable incomes.

2. Findings of the Abanico Medicinal Plant and Organic Agriculture Project Case Study

Participants in the Abanico Project include nine inhabitants of Abanico, a town located within the Arenal Conservation Area (ACA), between La Fortuna city and Chachagua in northern Costa Rica. The average size of households is 4.4 people (Centro de Salud-Chachagua, 1999). The average annual family income in this rural area, where people depend on agriculture for their livelihood, is between US\$2,000 and US\$2,500. What is not counted is the fact that, by living in that area, residents have access to the ecosystem. The benefits they realize from the ecosystem produce a net increase in the standard of living for local residents.

The nine women in the project are between 28 and 50 yr old; seven of them are married and two single. The married women live and work within the fincas (peasant farms) of their husbands and the single women live and work within their parents' fincas. Members grow organic crops in the middle of the chemical-based production occurring on their fathers', husbands' and in-laws' land. The land holdings of the women's families vary from 2 to 10 ha. The amount of land used by women in their own projects varies from 500 to 1500 m².

The micro-enterprise creditors in the Abanico Project include: Andar (Asociación Andar de Costa Rica) using the funds of the Holland-Costa Rica debt-for-nature investment, and World Wildlife Fund of Canada using the funds of the Canada-Costa Rica debt-for-nature investment. Loans were obtained by the project from the WWF-C for an initial capital investment of CAN \$3,640 at an exchange rate of 20% interest. The amount was distributed among 10 members, amounting to \$70,000 colones (CAN\$364) for each. This resulted in indebtedness for the women so that collectively in July 1998. In addition, Andar loaned \$1,000,000 colones (CAN\$6,400) to the group to allow them to buy a store, at an interest rate of 33%. Tilo tells how members of the Abanico Project wanted to build a diverse economy for themselves and their children:

The group bought the salon with the intention of having a place to meet, and fundamentally, a place where they dream of having a processing plant to make soap and shampoo, to provide jobs for our children, and to use the medicinal plants that Andar does not market. Andar expected that the group would get funding from Holland but the proposal was not well done and needed to be reworked. In addition, the group learned that the founders do not fund infrastructure. (Tilo, Interview, 1999).

Andar defines the Abanico Project as a *campesina* small family business development alternative within the globalization frame that will foster community economic welfare and gender equality in a sustainable environment (Asociación Andar, 1996). Andar buys menta, tilo, juanilama, zacate limon, albahaca, oregano, hierba buena.

Andar is pressuring women to plant only what the market demands; if women agree, genetic erosion will continue. Women aware of genetic erosion cultivate other medicinal plants: *saucó, reina de la noche, salvia virgen, gabilana, incienso, sabila, ginger, citronella, diente de león, llanten, tilo, hoja de sen, sara-gundi gotukola-kola, planta lechera, romero, calahuana, eucalypt medicinal, hoja del aire and verbena.*

Women who work with medicinal plants can identify more than sixty wild medicinal plants and herbs. They also have the knowledge to make *cocimientos**. They

* Cocimientos are combination of plants, for healing purposes.

use *tilo* for a nervous breakdown; mint as a digestive and relaxant; *juanilama* for rheumatism and arthritis; *zacate limon* for cleaning the respiratory system; *sauco* for asthma and bronchitis; *reina de la noche* flower as a bug repellent; *salvia virgen* for allergies; *gavilana* leaves are used as an insecticide and fungicide; *incienso* for relaxation and a repellent; *albahaca verde* and *morada* for ear pains, digestion and as a dressing; etc.

With the help of Centro Nacional de Accion Pastoral (a local NGO organized by USAID) rural women relearned the techniques of organic production through workshops and plant exchange in the hope of building earning a living. In the words of Rosita: “When we could not afford basic food, because the income of our husbands and parents were not enough to feed our families, we discovered the value of medicinal plants and we went back to what our grandmothers knew”. (Rosita, Interview, 1999).

According to ANDAR, microenterprise “has taught us that the whole family contribution (sons/daughters, husbands, partners, friends and other family members) is fundamental in the development of this [micro-enterprise] project” (Asociacion ANDAR, 1996). The work is time and labor intensive, reports Juanilama: “The work is hard, because we work with machetes, not with herbicide for weeding (*deshiervar*), and most of the work day is spent weeding (*deshiervando*)”. The typical day in the plot starts around 5:30 a.m. when the women cut, select and clean the leaves. Between 8:30 and 9:00, they spread them in the secador (solar drier), since the temperature in the secador becomes too hot for work after than time. When they do not cut plants they pull weeds, prepare natural fertilizers (using *gavilana*, garlic and onions), apply fruit fertilizers (using *guayaba*, papaya, *camote* etc) and seed beds.

Table I shows, even with some differences between participants, that the financial return for work is very low for everyone in the project. Some months several members received no income. Even considering that the average hourly wage in agriculture in Costa Rica is low at 230.00 colones (US\$0.92) in July 1998, the members of Abanico Project’s income per hour is lower still at one-half to less than one-tenth of the hourly agricultural wage of \$0.08 to 0.37 per hour US. Therefore, the rate of exploitation of the women workers and their family surpasses even the average rate of exploitation in the agriculture sector and is far from providing a livelihood.

These women recognized that without the support of other family members who work in the peasant farm and/or additional income provided by the packing factory some of them would not survive. The income is so small it does not ensure the survival of even one family member, according to Tilo:

The men of the town have shown admiration for our work, because we persevere. Men supposed that with the first difficulty we were going to dissolve the group. They were wrong, the group is keen to continue. However, our men said, What a pity that the results, in

TABLE I
Wages of women in the Abanico Project

Albanico women (names)	Total hours worked in 3 months (hr)	Total Medicinal Plants (kg)	Earnings in January	Earnings in February	Earnings in March	Total income earned in 3 months in 1999 (Colones)	Average hourly wage	
			(Colones)	(Colones)	(Colones)		Colones (hr ⁻¹)	US\$ (hr ⁻¹)
Josefa	862.30	186	20,050	30,143	30,400	80,593	93	0.37
Julia	556.6	49	8,500	18,927	Lost land	27,427	49	0.20
Odilie/I	574	72.5	11,300	10,515	8,575	30,390	53	0.21
Irma A.	718	36.5	8,150	0	6,475	14,625	20	0.08
Maria R	639	35	6,975	1,051.5	4,825	12,851.5	20	0.08
Lorena	285	31	10,850	0	0	10,850	38	0.15
Total	3634.9	410	65,825	60,636.5	50,275	176,736.5	49	0.20

Source: Interviews and time use survey, 1999.

economic terms, do not correspond to the work done. We do not get much from the plants, because the plants do not sell at a good price. The selling just provides a small income, we cannot pay our debts nor can we save. However, the plants are our hope for the future. (Tilo, Interview, 1999).

The women's daily working time, including hours invested by the extended family, requires on average nine hours working on the medicinal plants as well as many more hours in household work (cleaning, cooking, washing, ironing nursing, child rearing, family health care, elder care). Women's work as housewives and as members of the community has increased with the closing of the health centre and the elimination of one teacher in the elementary school as part of the Stabilization and Structural Adjustment Programs, required by IMF and the WB for indebted countries. In addition, Abanico women are active members of the following organizations: the board of directors of the Abanico Development Association, church, school, the health centre in nearby village and ANDAR's credit committee.

These work hours are considered women's responsibility, but the work is done, in some cases, with the help of the extended family and, in other cases, because the women work until they are exhausted. According to Tilo "To maintain this project we are taking time from our families". For instance Tilo a member's 16 yr old daughter is in charge of the household chores and taking care of the family:

My husband helps in the plantation as well as in the care of the children when I work in the plantation and when I go to work in the packaging-factory to supplement the income. But who really replaced me is my older daughter, who is in charge of the cleaning,

cooking, and care giving. She is recognized as the mother of the house. (Tilo, Interview, 1999).

ANDAR sells the leaves to large for profit corporations such as Manzate, Los Patitos, Hierberia Tres Americas, Kabata, Diproma and Mondaisa and keeps between one-quarter and almost one-half of the profits to cover their expenses. This marketing activity permits the exercise of a high degree of pressure and social control over the Abanico women because ANDAR is the sole buyer of their produce.

The women's tenuous position in the market is increased by their very limited access to resources through credit, without title or control of the land on which they plant. As a result they are very vulnerable to their husband's/father-in-law's decisions about the use of the land. Two women of the group have recently experienced a reduction in the size of the land they are planting, due to debt and their husband's and father-in-law's decisions to sell the land because of lost agricultural production. Juanilama, for example, states:

The owner of the land is my husband. He had 15 manzanas (10 ha). He got credit from the bank, but his agriculture did not produce what he expected, because of the weather. To pay his debt, he sold half of the land, otherwise the bank would have seized it all. To avoid the sale of the land where I have been growing my medicinal plants, I had to fight with my husband and the land's buyers. My husband was ready to sell the whole plot and I told the buyers, I never was involved in my husband's business, but this time my medicinal plants are involved. I do not want him to sell you that part of the land. I believe that they felt sorry for me, because they bought half of the land and we can manage to survive. (Juanilama, Interview, 1999).

Through hard work, many participants of the group have achieved organic certification through the Asociacion Regional de Agricultores Organicos. All members want their land certified as organic to enable them to obtain better prices on the international market.

3. Discussion

3.1. MICROENTERPRISE AS SUSTAINABLE DEVELOPMENT

Abanico microenterprise workers live in poverty earning less than the minimum wage, which itself is insufficient for a worker's minimal consumption requirements. Reduced buying power in a country where inflation is high and where education, health care and housing are unsubsidized results in a sharp decline in the

standard of living of these women and their families. The microenterprise process has been detrimental to women in many ways. The majority of these women work in precarious conditions with no day care, no health benefits, no insurance, and no guaranteed income or market. In addition high interest rates result in high rates of indebtedness.

The Abanico Project is designed to make the group become providers of medicinal plants at low prices, below the production cost, and to make them dependent on the NGO. The medicinal plant project can only be developed in dependent structures, because the group lacks the skills and resources to negotiate in the international market.

This microenterprise project sees the women's work as a prolongation of the work they do in the home, not as 'genuine' outside-the-home work. In this way the work of the members and their families is cheapened. It is also controlled because they are isolated and unorganized in jobs that Maria Mies (1993) calls the 'housewifization of labor'. The increased workload for themselves and their families, often results in transferring their household duties to their daughters, which decreases the chances that these young women will receive an education. Therefore, the manner in which women's work is inserted into the market is resulting in an inter-generational transference of poverty.

Abanico women compete with other Third World women producers of medicinal plants to achieve sanitary standards, designed by the transnational corporations for their convenience. On the other hand, these microenterprises cannot compete with non-traditional agro-exporters that have ready access to technology, credit, worldwide marketing networks and state subsidies, such as Dole Food Co, Del Monte, BANDECO, and COBAL.

However, the Abanico Project produced some changes in the idea of what is 'women's work'. Oregano says:

In our house, women's work was never taken into account. Now when the men come in from agricultural work and see us working with the plants with no time to make lunch they go into the kitchen and prepare something light to eat. However, in the cleaning of the house, these changes are not taking place. (Oregano, Interview, 1999).

The project also increased women's bargaining power within the community. Women recognized that the project allowed them to renegotiate their situation in the community, according to Oregano:

People in the community started to value our work. One day I heard a comment 'These ladies are working hard and making money'. This comment was made by people outside our families because our families know that we work hard, but we do not

make money. However, that comment made me proud. (Oregano, Interview, 1999).

3.2. BIODIVERSITY AS NATURAL CAPITAL?

Kirk Hamilton (2001), from the WB, has developed what he calls 'genuine' saving measures, to broaden the usual national accounts definitions of assets to include biodiversity as natural capital. Biodiversity, however, is a relational category, ecologically and culturally embedded. Within the debt-for-nature agreement, a conference was organized in 1998 at *Encuentro* between Canadians and the indigenous people of Costa Rica. Canadians told the Costa Rican indigenous people that they could help them to defend themselves and to benefit from bio-diversity negotiations. The Talamanca indigenous people answered: "We do not want to know about making business with biodiversity, we are happy living like we are. What we want is just to keep and use the land, with the knowledge our ancestors handed down to us". (Anonymous interview, 1998).

Indigenous people see biodiversity as priceless and, therefore, non-negotiable. Biodiversity is their pharmacy, their supermarket, and particularly, the source of their myths and traditions. Selling their biodiversity is comparable to selling their culture, their soul.

In an ideological sense, many of the development programs are based on the assumption that indigenous people and peasants are culturally backward. Their ecological management systems, such as intercropping and agro-forestry, are seen as obstacles to modernization (Nygren, 1995, p. 124). As a result, sustenance food land is diverted to produce cash crops for export, including bananas, limes, pineapples, and papayas. All of these require fertilizer, herbicides, pesticides and heavy machinery, and cause land degradation. State and development policies continue to support intensive agriculture but not ecological farming for local consumption of the peasants.

In this way government policies, under IMF and WB policies, have reduced support for domestic consumption, transferring the food security of Abanico families and other rural peasant communities to the international markets. Peasants buy their basic foodstuff (rice, beans, tomatoes and cabbage) from the international marketplace as Costa Rica imports its food grain mainly from the U.S., which subsidizes its farmers. Policies to import grain are justified based on its lower cost than domestically produced grain although peasants are made vulnerable to exchange rates and the vagaries of the international markets.

With the new international market preference for organic food, rural areas are expected to experience some economic growth. However, organic agriculture will not have economically and socially sustainable outcomes if no attention is paid to the underlying structures of power and domination in terms of resource access and control – at local, national and international levels.

Organic agriculture is often practiced without a conservation process as it is not designed to correct structural and environmental problems produced by the green revolution. It is only characterized by the use of regional inputs and the avoidance of agrochemicals and growth regulators. Ecological agriculture, which maximizes efficient vegetable diversification (in time and space); uses techniques based on traditional technologies; and rescues and conserves soil, water, and local species (Astier, 1998), is different from organic agriculture as it cannot be practiced without a conservation process.

Organized into micro-enterprises, the medicinal plants become commodities and the women become commodity producers. As market products medicinal plants lose their biological, social, ethical, and cultural value to become mainly an economic value. In the commodification process, medicinal plants lose their potency as the loss of wild surroundings and different sunlight exposures change their chemical properties. According to Celso Alvarado, MINAE biologist, the best biodiversity management is done by nature, *in situ*:

Regarding medicinal plants, the indigenous populations do not domesticate many plants. When plants are domesticated and planted in monocultures, they are deprived of species association and destruction of their properties starts. A plant in its natural ecosystem is interacting with other plants and its abiotic resource (soil, water, light); therefore, the plant conserves its properties as a natural defense. Its genetic strength is more active and dynamic against its predators. Furthermore, when medicinal plants are sown in prepared land pests proliferate. These are the reasons why indigenous populations obtain the species and its properties directly from the ecosystem for healing purposes. Therefore, producing medicinal plants as monoculture does not mean sustainability, because it implies genetic erosion. (Celso Alvarado, Interview, 1999).

4. Conclusion

ANDAR and the WWF-C, referring to women as small entrepreneurs, have done more to advance the commodification of women's work and to ensure the availability of local produce, local biomass and free or badly paid labour to the market than to enhance women's status and independence.

The structure of the Abanico microenterprise, as organized, managed, and controlled by Andar, and the free market approach, make women's inclusion into sustainable development and women in development problematic. In the attempt to generate income the members of the group have become more dependent on forces over which they have no control, namely globalization, international mar-

kets and interest rates. Women in development programs require a strong state to channel resources to women in order to be successful. However, market imperatives place limits on state policies, particularly in indebted countries. As a result the only way to integrate the work of Third World Women into the international market is through the subsidy of the market by the hard work of these women and their families and by their personal sacrifice. Thus, the market is subsidized by women's work capacity on the farm, in the household, and in their community work. Strategies regarding women in development cannot be expected to enhance rural women's situation if no attention is paid to unequal distribution of resources between the first and the third world, between men and women and between people and nature.

The desperate situation of non-industrialized countries for foreign capital to repay their debt provides new opportunities to expand nature and human capital investment, beyond locating exploiting enterprises and appropriating natural resources, into individual indebtedness. The international debt crisis is now mirrored in individual indebtedness through debt-for-nature and human capital investment. These costs of converting a sustenance economy to a market economy are largely borne by women, indigenous people and others living off the land who have no purchasing power in a cash economy that devalues their work. The poor lose their land through appropriation by the state or by environmental degradation, while capital is accumulated into fewer and fewer hands, as Eduardo Galeano observed:

Historically, the underdeveloped countries have been overwhelmed by the development of the developed countries; it is they who have been condemned to slavery by debt. The international financial police keeps watch on them and tells them what to do; habitually, it fixes the level of wages and public expenditure, investments and disinvestments, interest and customs tariffs, domestic taxes and all the rest, except the hour of sunrise and how often the rain falls. (Costa, 1995).

Are Abanico women, indigenous people and the rural poor being condemned to indentured servitude by current development policies?

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