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Food Insecurity in Nicaragua

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Introduction

"The critical question that we should address is: How is it that the government, with all the policy instruments it has at its disposal, is still unable to reach its food policy goals?"

Government food policy analyst, Nicaragua 1987[1]

Hypothesis:

The absence of a true national food policy in Nicaragua and the increasing reliance on imported food to meet domestic demand has resulted in chronic food deficits among the poorer populations and undermined the ability of the agricultural sector to contribute to the development process.

Heavy reliance on food imports is a mistake for Nicaragua with the economic characteristics of high debt (both domestic and current account debt), scarce foreign exchange problems, dependence on the export of a primary product for both tax revenues and incomes in the sector, and reliance on a thin international market for the basic imported food staple. Food imports rise whenever domestic food supplies are lower than demand, whereas poverty and malnutrition are traced back to a lack of purchasing power among certain vulnerable groups in the population. A vital food sector is not only a source of

[1] Brizio N. Biondi-Morra, *Hungry Dreams: The Failure of Food Policy in Revolutionary Nicaragua, 1979-1990* (Ithaca: Cornell University, 1993), 1.

sustenance but also a source of income for the numerous smallholder producers who form the most important group exposed to the risk of hunger.

Without vital food production in the rural areas, there will be no development of the backward and forward linkages that would stimulate more broad-based economic growth and enhance the distribution of income within rural communities. In the past, farmers were able to compensate for crop losses through employment in the coffee sector.[2] This option is no longer available. International coffee prices fell more that 60 percent in the last 18 months, drying up this source of employment – as well as Nicaragua's most important source of export earnings. To further exacerbate the problem, bank failures and a $500 million government bailout diverted funds that could have been used for poverty alleviation programs, and led to the evaporation of credit, particularly for the agricultural sector.[3]

Background Information

Food Insecurity

There is a significant percentage of the rural and urban poor in Nicaragua who suffer from persistent, chronic under-nutrition. This is largely because there is an insufficient supply of locally produced food and because of the decreasing or stagnant real income of the poor. Nicaragua has the highest malnutrition rate in

[2] Nicaraguan coffee production has traditionally employed nearly 200,000 people, roughly 30 percent of the agricultural workforce.
[3] USAID, "Program Data Sheet" (2003).

Latin America, 31% of which is due to poverty.[4] While rice production has increased 638%, rice imports have increased 965% between the years 1961 and 2000.[5] Based on the basic food consumption and availability, Nicaragua suffers from food insecurity.[6]

In general, food insecurity ranges from mild to severe. Households with uncertain food supplies that affect what and how adults eat suffer from mild food insecurity. Households where the children go hungry suffer from severe food insecurity.[7] Based on Nicaragua's child malnutrition level, Nicaragua experiences severe food insecurity.[8]

In an incomplete economy like Nicaragua, as described by Laura Enríquez, one sector predominates in the accumulation of capital, which is a precondition for development. In Nicaragua, primary goods are the predominant sector – in the form of export crop production.[9] The basic grains discussed in this paper are rice, beans, and corn, while the export crops discussed are coffee, cotton, and sugar. Historically, Nicaragua depends heavily on its comparative advantage in coffee and cotton production for its foreign earning, which makes

[4] Thorp, 1998
[5] *Ibid.*
[6] Food security means access to a recommended minimum diet, calculated by age and sex, and amounting to a daily average per capita food intake of 2,242 calories and 70 gram of protein plus vitamins and minerals. Seen in Biondi-Morra, *Hungry Dreams*, 32. Food insecurity exists when people are undernourished as a result of the physical unavailability of food, their lack of social or economic access to adequate food, and/or inadequate food utilization. FIVIMS, *What is Meant by Food Insecurity and Vulnerability?* http://www.fivims.net/static.jspx?lang=en&page=overview .
[7] "Cornell Studies Find Women in Food-Insecure Homes Engage in More Binge Eating and Eat Fewer Fruits and Vegetables," *Cornell University Science News* (18 June 1997), http://www.news.cornell.edu/ .
[8] One of every three children has some degree of chronic malnutrition and nine per cent suffer from severe malnutrition. UNICEF, "At a Glance: Nicaragua," http://www.unicef.org/infobycountry/nicaragua.html .
[9] Laura Enríquez, *Harvesting Change: Labor and Agrarian Reform in Nicaragua 1979-1990* (Chapel Hill: The University of North Carolina Press, 1991), 4.

the economy vulnerable to export-crop price changes in the global market. This point is discussed in further detail later.

Agriculture

Primary goods production has largely taken the form of agro-export production, which received the highest attention from the government, policymakers, financers and foreign investors. Meanwhile, food production remained marginal. The agro-export sector dominated domestic competition for essential inputs like land, labor, credit, and technical assistance marginalizing the basic grain market. Domestic food production has been unable to meet demand, and Nicaragua has increasingly relied on imports of food. At present, Nicaragua imports one third of its basic foods.[10]

The disincentive to invest in the food sector led to stagnant production levels that have not kept pace with increasing demand. A lack of productivity in the sector has made it difficult to generate surpluses (savings) in the rural communities for investment either directly in the agricultural sector or in human capital. Shifts in consumption patterns towards import-sensitive food baskets tend to lower the prices of traditional, locally produced staple goods, further reducing the incentive to invest in rural food producing capacity. On the macroeconomic side, a rising food import bill may also constrain agricultural growth as the scarcity of foreign exchange limits the government's ability to finance imported inputs and capital goods for the agricultural sector. Therefore,

[10] Interview with MAGFOR in August 2003, given in *El Desarrollo Humano en Nicaragua, 2000*, 170

despite a wealth of natural resource endowments[11], Nicaragua cannot raise 50% of its population out of chronic under-nutrition.

Agrarian Economy

Nicaragua's formerly mixed economy is undergoing extensive market-oriented structural adjustments programs (SAPs), mainly by means of privatization of state enterprises and downsizing of the public sector. Restoration of economic stability and reconstruction after eight years of civil war are major concerns. The structural adjustments Nicaragua made after the civil war turned Nicaragua from an agrarian based economy to an export promotion based economy.

Nicaragua began free market reforms in 1991 after 12 years of economic depression, uncontrollable inflation, and high external debt under the Sandinista regime. Despite some setbacks, it has made dramatic progress: privatizing more than 350 state enterprises, reducing inflation from 13,500 percent to 8 percent, and cutting the foreign debt in half. The economy began expanding in 1994 and grew 2.5 percent in 2001, with overall GDP reaching $2.44 million in 2001.[12] The agriculture sector officially employs about 42 percent of the work force[13]. Production is heavily oriented toward exports of coffee and cotton, which generate about half of total export revenues; bananas, sugar, tobacco, sesame,

[11] Nicaragua has an endowment of natural resources - tropical weather and fertile land that could stimulate the development of a strong agricultural sector.
[12] GeographyIQ, "Nicaragua – Economy (Notes)," http://www.geographyiq.com/countries/nu/Nicaragua_economy_summary.htm
[13] CIA, *World Factbook, Nicaragua*, http://www.cia.gov/cia/publications/factbook/geos/nu.html .

rice, and beef are also important export commodities. Approximately 80 percent of agricultural production is controlled by private sector operations engaged in export crop production.[14] A shallow credit market for small landowners and no public policy for agriculture led to an unfortunate dependency model to feed the national people.

Organization

This paper focuses on Nicaragua's development strategies over the last century and their effect on food security using micro-macro economic analysis. Food security's macro policies are very closely related with micro economic conditions, so for simplicity's sake, this paper observes the overall implications on the food system and basic grain production. An attempt is made to identify supply and demand side of the food system, but in many cases the agent of these sides are the same subsistence farmers.

The first section discusses the history of food insecurity from 1884 to 1990 by examining the socioeconomic changes represented by three influential government eras: Zelaya (1894-1909), Somoza (1937-1979), and Sandinista (1979-1990). Their economic policies cumulatively created an insecure situation for the food producers. Each of their development strategies significantly affected basic grain production by emphasizing commercial crops, especially coffee and cotton, during each of their time as means to gain economic growth. Production and labor productivity dropped as export crop production received political and

[14] This was a Discover Real Estate *Ibid.*

economic attention in the form of land, labor, credit, and technical assistance, at the expense of basic food production.

The second section focuses on the structural adjustment programs (SAPs) that follow virtually the same economic strategy to accelerate the economy by promoting agro-export production. This section discusses the effect contemporary structural adjustment (SA) on basic grain production and the availability of food for the poor. Under SAP's capitalism and free market economics, Nicaragua depends on imports and donations to meet the food demand.

Due to limited research available and inadequate data series, it was very difficult to delineate with any precision why and how macro polices were designed. As Biondi-Morra explain, "they appear to have been motivated by a varying assortment of impulses, including vague ideological predispositions, political calculations, attempts to remedy immediate problems, as well as sincere efforts to promote equitable development."[15] The paper concludes with a critical analysis of Nicaragua's latest poverty reduction strategy with some suggestions to improve food security conditions.

[15] Biondi-Morra, *Hungry Dreams*, 4.

The History of Food Insecurity

The fundamental role of the farm sector is to guarantee adequate food supplies to the population: this is its top priority according to the Revolution. The goal is to achieve self-sufficiency in basic grains by 1990, and in other dietary components by the year 2000.

-- Nicaraguan Ministry of Agriculture and Land Reform, 1983

Twenty years have passed and Nicaragua is still struggling to ensure food for all of its citizens and create a well-nourished, healthy society. According to 2002 World Bank estimates, nearly 30% of the Nicaraguan population receive less than minimum level of dietary energy consumption[16]. Furthermore, almost 50% of the population lives below the poverty line.[17] Why has Nicaragua not achieved their goal of food self- sufficiency? Or, is it that Nicaragua was unable to pursue the policy?

To answer these question ands understand the causes of the present condition, this paper will trace the roots of Nicaragua's food insecurity by examining the historical relationships between economic development, agrarian reform, and food security initiatives. The outcomes of economic development are economic growth, meeting basic human needs, equitable distribution of income and economic and environmental sustainability. Agrarian reform was a principal policy tool to try to meet the multifold objectives of development.

[16] The expected daily caloric consumption level is 2187. INEC, *Diagnostico de Pobreza* (2001).
[17] INEC, *Diagnostico de Pobreza*, and World Bank (2002).

Since the establishment of the Nicaraguan nation, the political agenda of many of the leaders has been to make the export of primary products the engine of growth for the economy. The government tended to favor the export sector as means to accelerate growth and increase foreign income. Consequently, food production for domestic consumption was not an integral component of economic growth strategies until the 80's.

When poverty is a reason for hunger, hunger becomes a reason for poverty. Hunger impairs an individual's health and prevents them from being a productive resource to society. Widespread food insecurity impedes economic growth, as demonstrated by an Asian Bank study that shows a 2%-4% yearly reduction in GDP due to food insecurity.[18] The FAO reports that people in developing countries working labor intensive jobs, such as agro-export production in Nicaragua, and who have smaller and slighter body frames caused by undernourshment, earn lower wages. [19] While each developing country has its own unique challenges and conditions, it is likely that rampant malnutrition rates in Nicaragua have similar effect on wages.

The repeated restructuring of Nicaragua's agricultural sector for export crop production over the last century led to disinvestments in the food production sector and a greatly diminished capacity to meet basic food requirements. Prior to the 1950's, Nicaragua was completely self-sufficient in food grain

[18] FAO, *The State of Food Insecurity in the World: Summary (*2002), ftp://ftp.fao.org/docrep/fao/005/y7352e/y7250e.pdf .
[19] FAO, *The State of Food Insecurity.*

production.[20] The many attempts to use export agriculture as an engine of growth led to the reallocation of land, labor, credit, technical assistance, and even knowledge of food grain cultivation, from food crop production to export crop production. Since Nicaragua's economy is agriculturally based, the shift in resources was reciprocated by a corresponding shift in production. With an inadequate food production capacity, Nicaragua grew to become dependent on imported food and food aid. Since imported food products are too costly for Nicaragua's impoverished populace, and food aid is unreliable (and often lowers prices received by the domestic producers for food), Nicaragua suffers from increasing food insecurity.

This chapter will review the agrarian policies and their implications, of the three representative Nicaraguan governments from 1893 to 1990. The selections include the governments of José Santos Zelaya (1893-1909), Somoza dynasty (1937-1979), and Sandinista (1979-1990), all three of which significantly shaped Nicaragua's economy.[21] The Zelaya and Somoza governments pioneered agro-exports as a means for economic development, while the Sandinista government's struggle to build a mixed economy ended with disastrous results.

[20] Laura Enríquez, *Harvesting Change: Labor and Agrarian Reform in Nicaragua 1979-1990 (Chapel Hill: The University of North Carolina Press, 1991), 46.*
[21] Jeffrey M. Paige, *Coffee and Power: Revolution and the Rise of Democracy in Central America* (Cambridge, MA: Harvard University Press, 1998).

Zelaya's Liberal Nationalist Agrarian Policy (1894-1909)

During Zelaya's rule (1894-1909), Nicaragua's economy turned to the international market and agro-exports as a way to 'modernize' the economy and establish market capitalism.[22] Zelaya pushed for market capitalism by supporting large agricultural companies that devoted land and labor resources to export crop production. This policy subsumed communal land, and peonized small farmers. These actions undermined small food producers, and in the long run, contributed to declining food production.

High demand and high prices for coffee influenced the transformation of the proletarian economy into a capitalist economy and created a rising class of coffee producing bourgeoisie wielding concentrated economic power.[23] As Zelaya restructured the nation's economy around coffee production, land and labor resources shifted from the food production sector to the agro-export sector and domestic food production declined – a trend that would be repeated throughout the century. As domestic food production fell, dependence on imported food products to satisfy domestic consumption followed.

[22] Market capitalism is a social economic system based on the complete set of decentralized markets to allocate scarce resources, goods, and services.
[23] A decentralized market is when resource allocation occurs as a consequence of individual market transactions.

Zelaya's Revolutionary Plan

After the liberal revolution, Zelaya seized the opportunity to accelerate Nicaragua's economic growth by entering into the international market.[24] High prices for coffee's and growing demand in the international market attracted the interest of the Nicaraguan government, which embraced coffee exports as the primary vehicle for the country's economic growth.[25] According to Torres, Zelaya's government "…based its reformist actions on the strategy of converting Central America into an export region of primary products[26] destined for the industrialized countries. It was believed by Zelaya and his supporters that a modern export oriented economy was the way to overcome chronic economic crises and stagnation."[27] To achieve this objective, Zelaya's legislature invested much of the nation's resources into coffee production, marking the beginning of mono-cropping in Nicaragua.

As a new member of the global economy, Nicaragua's elite coffee producers reacted to market price mechanism by adjusting coffee production and land allocations according to market signals. Nicaragua achieved an economy of scale in coffee production by opening new lands for production, facilitating cheap labor, and providing ample government support. This behavior demonstrated the rise of insipient market capitalism in Nicaragua's agricultural based economy.

[24] Liberal revolution means promoting the creation of an outward, competitive economy, linking with the international market.
[25] According to Haarer, coffee was introduced to several of Central American republics in the mid to late 1700s. Nicaragua adopted it somewhat later. A. E. Haerer, *Producción Modernerna de Café* (Havana: Edición Recolucionaria, 1969), 29. Seen in Enriquez, *Harvesting Change*, 191.
[26] Primary products are produced for exports to industries to make end-use products.
[27] Edelberto Torres Rivas, *Interpretación del Desarrollo Social Centroamericano* (San José, Costa Rica: EDUCA, 1980), 51. Seen in Enríquez, *Harvesting Change*, 26.

Large landowners reinvested their profits in coffee production. This marked the rise of a new class of coffee producing elite who wielded unprecedented economic and political power. In Nicaragua, like other developing nations, the essence of economic power is in landownership, labor usage, and credit facility.

Land, Labor, and Credit

The institutionalization of coffee production during Zelaya's rule initiated the structural transformation of the Nicaraguan economy. The groundwork Zelaya laid to promote agro-export production included the reorganization of landownership, the creation of a strong labor force, and the economic incentives to increase coffee production. Zelaya's objective was to increase foreign earnings for the development of economic infrastructure.[28] New legislation succeeded in expanding Nicaragua's coffee production to capture a significant share of the international coffee market, making the country the eleventh largest coffee exporter in the world. Under this new set of property rights, communal lands traditionally used for subsistence farming, were opened up for coffee production.[29] The beneficiaries were primarily a small group of elite coffee producing families. In all, Zelaya transferred some 1,300,000 hectares of land to

[28] Enriquez, L, Harvesting Change 1998

[29] A study conducted for the U.S. State Departmnet in 1928, Cumberland (1980:21) argued that native population was one of the biggest barrier of coffee expansion. They were very tied with the lands and insisted on returning to it for a part of each year. Yet it was those small pieces of land that provided with the survival of *campesino* (small producer). The *latifundo/minifundios* relationship was a central part of coffee production.

around 30 elite families. Fifty years later, those lands still constituted a third of all agricultural land in Nicaragua.[30]

Meanwhile, thousands of peasant families were left landless, with very few options to support their families, and little choice but to work the coffee farms as wage labor. During this time one option for these displaced farmers was to move further into the agricultural frontier, which was difficult since they would have had to farm with little or no supporting infrastructure. The alternative was to move to the city center and face underemployment. Thus, small farmers were marginalized from food production and forced into supporting the liberalized coffee sector.

To avoid potential labor constraints during planting and harvesting, Zelaya provided coffee producers needed labor through two means.[31] One means to ensure an adequate supply of labor was initiating harsh labor codes.[32] Under Zelaya's legislation, the labor force had three options: 1. Join the military; 2. Work on a public project; or 3. Work in coffee production. The other means Zelaya provided coffee growers their labor was by recruiting a special agriculture guard force that ensured wage laborers worked in coffee production.[33] These policies, which tied the population to a seasonal work cycle, exacerbated seasonal

[30] Jeffrey Paige, *Coffee and Power* (Cambridge, Massachusetts: Harvard University Press, 1998), 157.
[31] W. W. Cumberland, *Nicaragua: Investiación Económica y Financiera* (Managua: Colección Cultural, Banco de América, 1980). Seen in Enríquez, *Harvesting Change*, 29-30.
[32] 1894 law giving agricultural 'judges' the right to force any one over 14 to work, 1898 law established 'Libretas de Obreros' (worker passes) and 1899 'Ley de los Vagos' (Vagrancy Law). Jaime Biderman "Class Structure, the State and Capitalist Development in Nicaraguan Agriculture," Ph.D. dissertation, University of California, Berkeley, 54. Seen in Enríquez, *Harvesting Change*, 30.
[33] Paige, *Coffee and Power*, 157.

unemployment. The seeds of unequal income distribution and inadequate domestic food supply hammered the unavoidable future of food insecurity.

The Effect of Zelaya's Policies on the Food Sector

Zelaya's government offered incentives for small farmers to produce coffee, such as cash or credit, subsidies and free shipment on government controlled railroad.[34] Many farmers took advantage of the opportunity and shifted from food production to coffee production, though with little knowledge of modern coffee production techniques. The farmers were then left to the vagaries of the international market, as well as the cycles of the large coffee producing countries. This move to export production subjected small farmers to radical vacillations in the prices they received.[35] The government did little to address this problem of price and therefore income volatility for the small former. In addition, technical assistance to enhance productivity and quality was not available and many farmers had difficulty marketing their products internationally. Until the late 70's these small farmers did not market their product collectively and so they were further exploited by the coffee elite's monopolistic control over the international marketing of coffee. Since the domestic market failed to promote income, the ultimate impact was levied on food consumption of these farmers.

A lack of technical expertise and unstable prices led small coffee farmers to produce smaller crops of poorer quality which then sold at a lower prices.

[34] David R Redell, *Historical Geography of Western Nicaragua: Spheres of Influence of Leon, Granada and Managua 1519-1965*. Seen in Enríquez, *Harvesting Change*.
[35] For example, Nicaraguan farmers received a higher price for coffee if Columbia and Brazil had a bad harvest.

Some small producers were unable to make ends meet and were forced to sell their land, and join the wage labor force. This prolitarianization of small farmers was common throughout the third world as those with economic power solidified their control of land. As farmers lost their land they lost their ability to augment household income with food. Seasonal employment, and uncertain income increased their vulnerability and also made them more dependent on an volatile international market without the safety net of subsistence production. Without a stable income, much of the population lacked the funds to buy food, and was unable to grow food crops since they were working in coffee production. Families then failed to meet basic nutritional requirements and the incidence of malnutrition soared.

For producers who had the resources to make it, coffee production was a much more attractive endeavor than food production, and land was allocated accordingly. Land tenure then played a crucial role in decreasing food production, as much of the land was allocated for coffee production.[36] A lack of enough fertile land and the absence of food production incentives contributed to an inadequate level of food production in Nicaragua. The result was an increased dependency on imported food products to meet domestic demand.

Ultimately, Zelaya promoted the agro-export community by the expansion of the elite class and the mobilization of much of the population as a dependent labor force. His land reform policies produced a large labor force for the coffee elites, marginalized the food grain producers, and reduced amount of land for

[36] Exact figures for the percentage of acreage allocated for coffee production are not available.

food production. Zelaya's aggressive agrarian policy formulated mono-crop export agriculture by large, landed estates requiring a dependent pool of wage labor. This new agrarian structure exacerbated income inequality and unemployment, decreased food crop production, and set the stage for chronic malnutrition, declining health among much of the population. These features remain characteristic of twenty-first century Nicaraguan agriculture.

Somoza's Agro-Capitalism (1937-1979)

Somoza was a corrupt dictator who ruled with a capitalist philosophy. From father, to son, to brother, the Somoza family played a central role in the nascent industrial sector and export-based agriculture, building an immense fortune for their family in the process. For the purpose of this chapter, "Somoza" will refer to the family's rule from 1937-1979. By the end of the Somoza rule, Nicaragua experienced favorable economic growth, but food production declined to such levels that more than 50% people suffered from food insecurity. The economic growth in GDP driven by agro-capitalism masked the reciprocal decline of food production and food distribution.

It is essential to remember that Somoza's rule was not that of a republic, but a despotic family legacy. Political parties existed only in name and were frequently manipulated by Somoza to maintain the appearance of democracy.[37] The United States also played an influential role in Nicaragua's development

[37] John Weeks, "The Mixed Economy in Nicaragua: The Economic Battlefield," in *The Political Economy of Revolutionary Nicaragua*, ed. Rose J. Spalding (Boston: Allen & Unwin, 1987).

during Somoza's time, as well as the during the Sandinista rule and into today through structural adjustment programs (SAPs). The latter two time periods will be discussed in upcoming sections, though a full discussion of the United States' influence on Nicaragua is beyond the scope of this paper. Essentially, Somoza reinforced the prevailing class structure created through historical agro-export production by supporting and expanding Nicaragua's comparative advantage in agro-export crops, like coffee and cotton, at the expense of food production.

A Quick Overview of the Somoza Capitalist Economy

Nicaragua's economy was broadly capitalistic during the Somoza era. Between 1960 and 1977, real economic output nearly tripled. During 1960's, the economy grew at a rate of 8.7%, but slowed to 5.5% in 1970.[38] Then the 1972 Earthquake struck, momentarily slowing the economy, which rebounded with the help of foreign aid and loans. Figure 1 below shows the broad economic indicator, per capita RGDP, in 1980 córdobas, demonstrating the cyclical swing characteristic of capitalist economies.

Figure 1: Per Capita Real GDP, 1960-1990, in 1980 Córdobas

(Figure removed for ILASSA publication)

Sources: Calculated from RDGP and Population, BCN. Seen in Gibson, "Overview of the Nicaraguan Economy," 24.

[38] International Monetary Fund, *International Financial Statistics* (Washington, DC: IMF 1981), 365. Seen in Bill Gibson, "Overview of the Nicaraguan Economy," in *The Political Economy of Revolutionary Nicaragua*, ed. Rose J. Spalding (Boston: Allen & Unwin, 1987), 24.

According to Bill Gibson in his article *Overview of the Nicaraguan Economy*, the changes in RGDP's rate of growth follow the pattern of fluctuating foreign investment.[39] Note that foreign investment provided more capital growth to the Nicaraguan economy than domestic banks. A suitable environment for capitalism was stimulated by 14.9% of total investment coming from foreign sources from 1950 to 1959, which increased to about 30% from 1960 to 1977. Public sector investment remained small, averaging 3.8% and 5.6%, over the same respective time periods.[40] The heavy reliance on foreign funds influenced statewide policies through investment restriction placed by the investors, excluding investment in basic grain production or domestic development programs. With such a significant influence, foreign investment heavily influenced Nicaragua's economy.

By the end of the 1970s, foreign debt exceeded US$ 1 billion, equal to 70% of Nicaragua's GDP.[41] Being so dependent on foreign investment kept government savings[42] under 10% throughout most of the Somoza era.[43] With so few cash reserves, Nicaragua's economy was vulnerable to unexpected circumstances, such as the earthquake of 1972. The government depleted its savings recovering from the earthquake, and despite aid and loans, an estimated $518 million of capital left the country by 1974. A new period of increasing government deficit ushered in, as seen in

Table 1, stimulating the revolution.

Table 1: Fiscal Deficit

	1953-1957	1958-1962	1968-1972	1973-1977	1980-1984

[39] Gibson, "Overview of the Nicaraguan Economy," 25.
[40] *Ibid.*
[41] Rob Vos and Sarah Johansson, "Nicaragua," *Aid and Macroeconomic Performance*, ed. Howard White (New York: St. Martin's Press, 1998), 146.
[42] Calculated as government revenue minus current government expenditure.
[43] Gibson, "Overview of the Nicaraguan Economy," 25.

Fiscal surplus/deficit	+3.2	+2.0	+0.3	-2.1	-14.5

Source: 1952-1962: James Nugent, *Economic Integration in Central America* (Baltimore: John Hopkins University Press, 1974), 164-165; 1962-1977: Banco Central de Nicaragua, *Indicador economícos*, 37-38; 1980-1984: INIES, "Trece sintomas de un drama," *Pensamiento propio* 21 (March, 1985): 29. Seen in Bill Gibson, "Overview," 27.

While coffee and cotton enjoyed relatively high prices and market demand during the Somoza era, not much of the profits went into the fiscal budget. Rather, the profit was used to finance the expansion of agrarian capitalism.[44] This feature of the Nicaraguan economy was subtly masked by the impressive GDP figures during the Somoza era to disastrous effect. The neo-classical capitalist theory of income trickling down through society didn't hold true in Nicaragua, because the neoclassical approach was created through Somoza's corruption and dictatorship. Top 5% enjoyed 28% income and bottom 50% shared only 15% of income.[45]

In a nutshell, Somoza was able to sustain aggregate growth from the 1950s to the 1970s because of high growth in export agriculture. To sustain the economic growth, Somoza undertook agrarian reform that promoted export crop rather than food production.[46] Malnutrition doubled from 1965 to 1975, affecting 60% of children under 4 years of age[47] while more than three-fifths of the rural population had deficient food intake in 1970.[48] Undoubtedly, Somoza's crony capitalism that caused sever poverty in the among majority (50%)of the

[44] *Ibid.*
[45] Gibson , "Overview," 31.
[46] Gibson , "Overview," 30.
[47] CEPAL, *Informe Sobre Nicaragua* (CEPAL, 1980), 6. Seen in World Bank, *The Challenge of Reconstruction*, 32.
[48] World Bank, *The Challenge*, 32.

population. Such inequality undermined agrarian reform policies to cause severe food insecurity.

Somoza's Agrarian Reform Export Promotion Leading to Food Insecurity:

In general, Nicaragua's agro-export-based economy was common in Latin America, though Somoza rule brought a unique dynamic to the political and economic environment.[49] With the exception of its brief experience in the Central American Common Market (CACM), Somoza era Nicaragua was a textbook example of how comparative advantage can increase GDP.

Investment in the public sector was limited to road-building, irrigation, and other projects that benefited the agro-export sector. Much like Zelaya's policies, subsidies for exports received high attention in the Somoza era, and included subsidies for production, processing, transportation, storage, and marketing. Somaza's policies reinforced the export model's inherent tendency to rapidly and aggressively concentrate resources into the hands of an elite few. Agro-export production was supported at the expense of food crop production, which lacked essential resources like land, labor, and credit, much like during the Zelaya era, except to a greater extent. The magnitude of agro-exports' role in Nicaragua's economy can be seen in Figure 2.

Figure 2: Cotton and Coffee Exports, Percent of Total

(Figure removed for ILASSA publication)

[49] Richard Millet, *Guardians of the Dynasty* (Maryknoll, NY: Orbis, 1978).

Sources: 1954-59, DGE; 1961, *Resumen Estadística* (Managua: DGE, 2nd. ed., 1961), 90; 1960-79, BCN, *Indicadores Económicos,* nos. 1 and 2 (December 1979), 75, 82; 1980-83, Wheelock, *Entre la Crisis y la Agresión*: La Reforma Agraria Sandinista (Mangua: Communicaciones, MIDINRA, 1984), 144; 1984, CIERA, *Informe Annual de 1984* (Managua: CIERA, 1985), 83. Note: cotton seed and instant coffee included. Seen in Gibson, "Overview," 19.

Land holdings concentrated rapidly during Somoza's time, transforming the peasantry into wage laborers to ensure sufficient labor for agro-export production. Somoza pushed the peasants off their land, relocating the people to the agrarian frontier, devoid of state support. In 1978, 37% of the rural economically active population was landless, almost half of which could not find permanent employment.[50] Peasants were bought out, and sometime forcibly evicted form the land by the National Guard, to comply with the emerging landed aristocracy.[51] The best and the most accessible land went to export crop producers rather than producing food for domestic consumption. The proportion of land held by large commercial farms (holding greater than 500 manzanas) increased from 40% to 48% from 1052 to 1978, where as holdings from 10 to 99 manzanas declined 14% and the proportion less than 10 manzanas decreased nearly by half.[52] The reduction in the peasant population, the nations primary food producers, contributed to the decrease in basic grain production.

The affect of depeasantization on food production was more pronounced during the Somoza government than during that of the Zelaya government. This is because during the Zelaya era, the main agro-export crop was coffee, the

[50] Carmen Diana Deere, Peter Marchetti, and Nola Reinhardt, "Peasantry and Development of Sandinista Agrarian Policy 1979-1984," *Latin America Research Review* 20, no. 3 (1985), 78.
[51] Gibson, "Overview," 20.
[52] Solon Barraclough, *A Preliminary Analysis of the Nicaraguan Food System* (Geneva: United Nations Research Institute for Social Development, 1982), 52.

production of which supported basic grain production as a secondary crop. However, cotton production came to the forefront during the Somoza era, which did not facilitate secondary crop production.[53] At least for the case of cotton, export expansion was land extensive rather than intensive.[54] So, cotton production overtook most of the fertile land along the pacific plain. Food production for domestic production declined to the point that rural Nicaraguans were largely unfed. Foreign earning and investment were allocated for Somoza and his associates' benefit, leaving almost 50% of the population under the poverty line.

Other factors influenced the stagnating domestic food crop production. One of which is that Somoza followed a "cheap food" policy that forced peasants to work during agro-export harvest times to supplement their nominal incomes. Somoza put such a low price ceiling on basic grain that production stagnated.[55] Terms of trade consistently created domestic agriculture prices that ran below the world market.[56] Stopgap imports were brought in to satisfy the basic food grain deficit that resulted from decreased domestic production. Finally, the small producers, who produced the majority of domestic food crops, were completely denied from access to domestic market.

During Zelaya era domestic basic grain market were endangered, and Somoza destroyed it by marginalizing economic resources for small farmers and

[53] Enríquez, *Harvesting Change,* 28-32.
[54] The reasons why cotton is land extensive are discussed in Gibson, "Overview," 21.
[55] Banco Central, *Indicators* 1979-1980. These maxima were reached in the 1973-74 season due in part to the earthquake of the preceding year. Seen in Gibson, "Overview of Nicaraguan Economy," 20.
[56] Solon Barraclough, *A Preliminary Analysis of the Nicaraguan Food System* (Geneva: United Nations Research Institute for Social Development, 1982), 38. Seen in Gibson, "Overview," 21.

flooding the market with imported cheap food. As Gibson notes, "Generally Somoza's development policies were palliative, with limited coverage; they were cynically designed to undermine insurgent activity in the countryside."[57]

Somoza's Economic Model

In the preceding discussion, we established that intensive agro-export production encroached upon land previously devoted to food crops, shifting a large quantity of the population to wage laborers. This trend was largely driven during the Somoza era by Nicaragua's capitalization on the international growth of the cotton market in the 1950s. By 1960, 39% of foreign income was earned solely by cotton as opposed to 35% by coffee.[58] Between the two crops, an estimated 87% of the workforce was employed during harvest times.[59] With such economic importance, the percentage change in the area of cotton planted increased five fold higher than coffee by 1965.[60]

Cotton cultivation followed similar growth patterns as coffee, except small farmers participation was limited by the capitalist nature of the Pacific coast. The expansion of agro-export production was limited mostly to the Pacific coastal region, land traditionally used for basic grain production, for its high fertility and

[57] Gibson, "Overview ," 30.
[58] Pedro Belli, "An Inquiry Concerning the Growth of Cotton Farming in Nicaragua," Ph.D. dissertation University California. Seen in Enríquez, *Harvesting Change*, 74-77.
[59] MIDINRA, *Informe de Nicaragua a la FAO* (Managua: CIERA, 1983), 53 and INCAE, *Nicaragua: Estudio de la situación del empleo, la Absorción de la Mano de Obra y Otros Aspectos en Fincas y Productores de Café y Algodón* (IDRC Rural Employment Project, INCAE, July 1982), 9. Seen in Enríquez, *Harvesting Change*, 74-77.
[60] The area planted with cotton rose from 23,945 manzanas in 1950/51, to 66,767 manzanas in 1951/52, to 123,616 manzanas in 1954/55. CONAL, *Estaditícas del Algadón in Nicaragua: 1950-1972* (Managua, CONAL, 1973). Seen in Enríquez, *Harvesting Change*, 34.

accessibility. Basic grain production was then pushed to the fringes of the agricultural frontier in the underdeveloped central and Atlantic coastal regions, as seen in Figure 3. The relationship between agro-export harvests and basic grain harvests can bee seen in Figure 4.

Figure 3: Macroregions of Nicargua

(Figure removed for ILASSA publication)

Source: FIDA, *Informe de la Misión Especial de Programación a Nicaragua* (Rome: FIDA, 1980), vi. Seen in Enríquez, *Harvesting Change*, 27.

Figure 4: Percentage of Area Harvested

(Figure replaced with table data for ILASSA publication)

	Agroexport Crops				Basic Grains			
	Cotton		Coffee		Rice		Beans	
Crop Year	Mz.	%	Mz.	%	Mz.	%	Mz.	%
1960/61	82	16	118	24	31	6	54	11
1961/62	107	19	123	22	34	6	66	12
1962/63	134	23	128	22	32	6	61	10
1963/64	165	26	119	19	31	5	61	9
1964/65	191	27	126	18	32	5	67	10
1965/66	203	27	129	17	33	5	75	10
1966/67	215	28	129	17	33	4	80	10
1967/68	209	25	130	15	34	4	83	10
1968/69	188	23	126	16	34	4	85	10
1969/70	155	23	124	18	37	5	58	9
1970/71	136	19	120	17	48	7	67	9
1971/72	156	21	118	16	48	7	70	10
1972/73	211	29	119	17	43	6	57	8
1973/74	259	32	119	15	36	4	67	8
1974/75	254	27	119	13	47	5	93	10
1975/76	205	26	120	15	42	5	80	10
1976/77	283	31	120	13	30	3	97	11
1977/78	303	34	120	13	35	4	88	10
1978/79	248	27	135	15	39	4	95	11
1979/80	64	10	140	22	51	8	76	12

Sources: 1960/61-1978/79: BCN, *Indicador Economícos*, 74-84; 1979/80: MIDINRA, unpublished data (March, 1989). Seen in Enríquez, Harvesting Change, 75.

At the same time, government financed increased inputs like tractors, fertilizer, pesticides, and ample credit facility through multinational lenders.[61] Ironically, these same lenders' interest later shifted to political and economic disinterest, and even sabotage, during the Sandinista era.

To achieve comparative advantage and gain economies of scale in producing export crops, Somoza's policies greatly limited the ability of Nicaragua's subsistence farmers in the country's fertile zones. The peasants in the fertile Pacific Plains and inland lost their land, and were pushed to the less fertile agricultural frontier and to the Atlantic coastal region. The growth of cotton during this time repeated the same pattern established by the rise of coffee, while the peasants along the Pacific Plains lost their ability to produce basic grains.[62] Meanwhile, the most fertile and most accessible land went to the largest producers whose crops were destined for foreign markets rather than for domestic consumption.

With the rapid concentration of land holdings, the total area cultivated increased 162%, whereas number of farms increased 62%, between 1952 and 1978.[63] This shows that the new land ownership legislation facilitated large commercial holdings at the disadvantage of small farmers.[64] According to the

[61] In 1960, 89% of the area harvested for cotton received bank credit, which financed 70 to 80 percent of cotton production costs per manazana. Calculated from BCN.
[62] Evidence of this process is illustrated in Enríquez, *Harvesting Change*.
[63] Barraclough , *A Preliminary Analysis,* 52.
[64] Farms with 500 manzanas or more increased from 40% to 48% in between 1952 to 1978. *Ibid.*

agriculture census of 1963, Table 2, medium and large producers controlled 89% of the year's cotton acreage, which increased to 91% in 1971.[65]

Table 2: Land Distribution According to Size of *Finca*, 1963

Size Groups[a]	Farm Size (*Manzanas*)	Percent of Farms	Percent of Area
Microfincas	Less than 1	2.2	-
Subfamily	1- 5	33.2	1.5
	5- 10	15.4	1.9
Family	10- 20	13.0	3.2
	20- 50	14.4	8.1
Medium	50- 100	10.7	12.4
	100- 500	9.6	31.7
Multifamily	500- 1,00	1.0	10.7
	1000- 2,500	0.4	10.3
	More than 2,500	0.1	20.2
		100.0	100.0

Source: Enríquez, *Harvesting Change,* 37.

[a]The various size groups are defined as follows:

Family: A farmer that has enough land to maintain a family using the predominant level of technology.

Sub family: A farm that does not have sufficient acreage to satisfy the basic necessities of a family or employ all the family members through out the years.

Medium: A farm with enough acreage to employ others in addition to family members but does not involve a complex division of labor.

Multifamily: A farm that is large enough to employ a permanent work force in addition to family members and that has a hierarchical division of labor.

(Note: This definition comes from the *Comité Interamericano de Desarrollo Agricola*, as cited in CEPAL et al, *Tenecia de la Tierra y Desarrollo Rural en Centroamérica* (San José, Costa Rica: EDUCA, 1980), 48.)

[65] *Ibid.*

Peasants were displaced not only by the means of inadequate land title documentation, but also by the force of Somoza's national guard and local police.[66] Were Nicaragua an orthodox export-based economy, the displaced population would be employed by the industrial sector. However, Nicaragua did not have such industrial development to facilitate the population. As in Zelaya's time, the peasants' primary options were to join the seasonal labor force or relocate to the agricultural frontier and farm without any established protections or government support, such as credit, technical assistance, fertilizer, or marketing facilities.[67] Neither option provided a means of economic success, so unemployment increased, food production decreased, and the rural population went impoverished and malnourished by the lack of livable wages.

Naturally this population was living under poverty, with scarce food, and acute malnutrition. A full 50% of the rural population lived in extreme poverty by the 1980s, and equal number of which live below the poverty line today.[68] Life's other essential needs like health and education were unattainable for most of the population. The income inequality between the seasonal labor class and the landowning class polarized the social structure. Economic power was concentrated in the hands of a very select few, leaving the agricultural wage labor class dependent on their mercy.

[66] Gibson, "Overview," 20.
[67] Although coffee and cotton employed a large percentage of the labor force, 70% of the agriculture labor worked on a temporary basis with only 30% employed permanently. Enríquez, *Harvesting Change*, 59-61.
[68] *Ibid.*

Furthermore, the foreign earnings gained from the agricultural exports were not even reinvested domestically for the country's development. Profits were redistributed back to the agro-export producers as subsidies and incentives. Huge investment and credit opportunities expanded mechanized export crop production, increasing productivity while lowering unit cost. Figure 5 shows how tractorization of pre-harvesting[69] activity transformed the previously labor-intensive cotton and coffee production into a capital-intensive sector.

Figure 5: Employment in Cotton Production, Permanent and Temporary, 1960/61-1978/79

(Figure replaced with table data for ILASSA publication)

Crop Year	Permanent	Temporary	Total	Percent Temporary
1960/61	4075	44820	48895	92%
1961/62	5366	64389	69755	92%
1962/63	6710	80515	87225	92%
1963/64	8240	98879	107119	92%
1964/65	9566	114797	124363	92%
1965/66	10140	121685	131825	92%
1966/67	10767	129208	139975	92%
1967/68	12546	135914	148460	92%
1968/69	11264	122037	133301	92%
1969/70	9303	100783	110086	92%
1970/71	8177	88586	96763	92%
1971/72	9365	101451	110816	92%
1972/73	21091	158185	179276	88%
1973/74	25935	202295	228230	89%
1974/75	20350	180602	200952	90%
1975/76	14322	157543	171865	92%
1976/77	16980	198104	215084	92%
1977/78	18651	192725	211376	91%
1978/79	14890	158832	173722	91%

Source: Adapted from Biderman, "Class Structure," 180. Seen in and adapted from Enríquez, *Harvesting Change*, 69.

[69] Pre-harvest cotton operations, include plowing, planting, and pesticide application.

Since the majority of the labor force worked in cotton and coffee production, harvesting labor needs grew at a decreasing rate as plantation acreage increased; growth in labor outpaced demand. For example, cotton growers retained only an indispensable number of permanent workers, making the rest of the labor a variable cost.[70] As a result, employers minimized labor wages, which kept production costs down and increased competitiveness in the international market. While the wealthy export crop producers grew wealthier, the poor fell deeper into poverty.

Impact of the Somoza Model:

Although Nicaragua's growth rate was steady from 1950 to 1970, the nation's success was based primarily on the financial success of a few elite agricultural exporters. The high growth rate of the export agriculture was the direct product of policies that allocated best land to the export crop production at the expense of food production. The process marginalized a large percentage of the rural population, who were left to eke a sustainable livelihood without land, permanent employment, nor any other government facilities. Under such economic conditions, observe in Table 3 below the high responsiveness of food consumption to income.

Table 3: Distribution of Income in 1977 and Caloric Intake in 1970

Percentage of EAP		Percentage of Income	Income Per Capita[a]	Calories[b]	Protein	Fat
Top	5	28	5,409	3931.2	111.9	114.7
	15	32	2,062	3255.1	90.3	77.9
	30	25	805	2703.5	72.5	54.2

[70] Biderman, "Class Structure," 92. Seen in Enríquez, *Harvesting Change*, 68.

Bottom	50	15	289	1767.2	46.5	31.7
Total	100	100	966			

Source: Data for 1977: Fondo Internacional de Desarrollo Agricola, *Informe de la Misión Especial de Programación a Nicaragua* (Managua: FIDA, October, 1980), 54; for 1970, CIERA, *Informe de Nicaragua a la FAO* (Managua: CIERA, 1983), 41. Seen in Gibson, "Overview," 31.

[a]U.S. dollars.

[b]Grams per capita.

As Table 3 shows, the very rich, top 5% of the population captured 28% of total income compare to the bottom 50% of the population, who captured only 15%. Of those, the bottom 50% of the population did not even consume 45% of the calories consumed by the top 5% of the population – a level well below the recommended daily caloric intake. In 1977, 50% of population suffered from inadequate food intake. Even though agricultural output rose at a rapid rate from 1965 to 1975, malnutrition doubled, affecting 60% of children under 4 years of age.[71]

According to a World Bank report, two thirds of Nicaragua's population did not consume meat or fish of any kind, even though Nicaragua was the major supplier of calories and protein in the Latin America.[72] Half the population did not drink milk and 57% did not eat vegetables.[73] Only 20% of the population had access to health care, and the death rate from contagious diseases was highest in the Latin America.[74]

It remains that approximately half the population of Nicaragua lived in a state of absolute poverty as a product of poor distribution of wealth, inadequate

[71] CEPAL, 1980 *Informe Sobre Nicaragua* (Nicaragua: CEPAL, 1980), 6.
[72] World Bank, *The Challenge*, 32.
[73] *Ibid.*
[74] *Ibid.*

food supply, malnutrition, disease, illiteracy, low life expectancy, and high infant mortality. This absolute poverty prevented economic progress amongst the rural population that took place elsewhere in Nicaraguan society. They have remained largely outside the entire development effort, able neither to contribute much to it, nor to benefit fairly form it.[75]

Somoza's "comparative advantage" meant specialization in the agricultural exports at the expense at the expense of food crop production, and all its associated ailments. According Gibson, domestic agriculture was stagnant from serving international market demand for agro-exports. Favorable exchange rate policies, tariffs, and terms of trade for agro-exports encouraged the reallocation of land away from food crop production. Meanwhile, small food producers were systematically denied access to state resources like agricultural credit, inputs and technical assistance.

The effect of relying so extensively on the international market is a twofold vulnerability to the global market and food insecurity.[76] Foreign earnings were used to import "cheap" food, keeping food crop prices down, and wages low, ensuring high seasonal workforce for agro-export production. As the Somoza economy became more export intensive, growth in the economy was dependent on the expansion and earning of a few crops, driving peasants off their land. Eventually, per capita income plummeted, and the skewed income

[75] World Bank, "Poverty and Basic Needs," (1980).
[76] Since Nicaragua is a price taker not a price setter, the international price dictates the supply of Nicaraguan products in the international market. Also, Nicaragua is primary product producer, which is vulnerable by nature because substitute products take away the market share of primary products. For example, the cotton market slowed down after the invention on artificial thread. Later in this section is a detailed discussion of the vulnerable nature of Nicaragua's economy.

distribution facilitated the Sandinista group's (FSLN) revolutionary take over in 1979.

Sandinista's Dream of Food Security (1979-1990)

Agrarian reform a pivotal issue for the revolutionary government; was also a difficult one because of the numerous contradictory needs and interests involved.[77] The Sandinista agrarian reform policy of 1989 centered on food security, with specific goals of self-sufficiency in basic grain production by 1990 and other dietary components by 2000.[78] The Sandinista government failed to meet these goals, primarily because the government's ideologies and policies were incompatible with the export-oriented structure of the agricultural sector supply system.[79] To further complicate the issue, the government was challenged by anti-Sandinista forces, such as the bourgeoisies and US backed guerrilla forces. These groups' actions included the sabotage of nascent rural initiatives and an economic blockade by the US government.[80]

The Sandinista government struggled to meet its key objectives: mending deep-rooted social inequalities and raising the standard of living for the rural

[77] Biondi-Morra, *Hungry Dreams;* Enríquez, *Harvesting Change* and *Agrarian Reform and Class Consciousness in Nicaragua* (Gainsville, Fl.: University Press of Florida, 1997); Peter Utting, "Domestic Supply and Food Shortages", *Political Economy of Revolutionary Nicaragua*, ed. Rose. J. Spalding (Boston: Allen & Unwin, 1987), 140.
[78] Biondi-Morra, *Hungry Dreams*, 32.
[79] Peter Utting, "Domestic Supply."
[80] *Ibid.*

population.[81] In practice, this would have meant agrarian reform to increase the domestic supply of food, creating a food surplus, which could have contributed to rural household incomes. Simultaneously, the Sandinista government had to focus on post war inflation and bankruptcy, taking scarce administrative expertise out of the tasks of restructuring agriculture.

For the first time in Nicaragua's history, the government was committed providing the basic needs of the people. In this section, we will examine the Sandinista period from 1979 to 1989 to understand how government policy failed to achieve food security. Specifically, we will analyze the policy dilemmas and economic conditions the Sandinista government faced that encumbered the process of increasing domestic food grain supply and guaranteeing adequate food consumption.

Overview of The Economy

After the revolution of 1978-1979, the Sandinista government took basic steps to reestablish national control over the economy, which was lost during the Somoza dictatorship[82]. Immediately, the banking system was nationalized and the Nicaraguan Agrarian Reform Institute (INRA) was established to develop state farms. Later, an emerging trade gap created by the US 1981 trade embargo led to strict control over foreign exchange, with foreign exchange rationing and

[81] One half of Nicaragua's population lived in the countryside and about the same population worked on the agriculture sector. Also agriculture accounted two third of country's foreign exchange earning and quarter of the GNP. Deere, Marchetti, Reinhardt, "The Peasantry."

[82] Gibson, "Overview."

multiplied exchange rate, by the Ministry of Foreign Trade export/import controls in effect. The state also established a minimum wage, a scale of wages and salaries, promoted labor unions and collective bargaining agreements and under temporary emergency laws, prohibited strikes.[83] All of these were attempts to redistribute national income, to raise the standard of living by giving the labor force more power, and to stimulate domestic food crop production. Later, we will see that these policies didn't bring a sustainable food system.

The reason behind this failure is controversial. According the World Bank and the International Monetary Fund (IMF), hyperinflation and high debt-burden were the key reasons. Enríquez attributes the Sandinista government's lack of expertise to control such huge state endeavor.[84] Meanwhile Vos and Johnson say that shifting patterns in aid after the US embargo and sabotage made the economy vulnerable, which caused the Sandinistas' failure.[85] While the reasons behind the Sandinistas' failure are debatable, the failure itself is not.

Nicaragua's heavily-centralized control of economic planning was necessary but the absence of skilled civil servants to administer such a task a war torn physical infrastructure, low national savings and dependency on foreign aid all contributed to the inability of this new government to reform the structure of the agrarian economy. Exacerbating these internal deficiencies were the US

[83] From August 1979 to August 1980, 200 collective bargaining agreements were signed, covering 50,000 employees. During the 46 years Somoza ruled, only 46 such agreements were signed. For further discussion see Carols M. Vilas, *Perfilies de la Revolucion Sandinista* (Havana: Casa de las Americas, 1984) and David F. Ruccio "The State and Planning Nicaragua," *The Political Economy of Revolutionary Nicaragua*, ed. Rose J. Spalding (Boston, MA: Allen & Unwin).
[84] Enríquez, *Harvesting Change.*
[85] Vos and Johansson , "Nicaragua."

trade barriers, decreasing multinational financing, impact of the oil shock on the world market, and low market prices for Nicaragua export products. The gravity of the declining economy during the Sandinista time can be seen the per capita RGDP shown in Figure 6.

Figure 6: Per Capita RGDP 1977-1993

(Figure replaced with table data for ILASSA publication)

Year	Per Capita RGDP
1977	11,039.32
1978	9,861.21
1979	7,027.64
1980	7,125.81
1981	7,282.19
1982	7,005.32
1983	7,108.10

Source: Calculated from RDGP and Population, BCN.

By the end of 1980, the state controlled 18% of total agricultural production, 30% of manufacturing, 44% of services, and 100% of banking and insurance. In all, little more than one third of the country's GDP was earned under state control. Also, the state became involved with wide range of activities like storing, transportation, and distribution of domestic products, e.g. through the Nicaraguan Enterprise for Basic Food Products, ENABAS. The government's lack of administrative management skill, contributed to the stagnation in the economy. Ironically, successful revolutionaries don't always make good administrators.[86]

[86] Enríquez, *Agrarian Reform.*

Furthermore, the centralization of economic planning and market controls were seen by the US as evidence of communist influence. This fear evoked a negative reaction from the US government who was determined to maintain their sphere of political and economic influence. Since the Nicaraguan government was using short-term, annual plans like Cuba the after revolution, and a heavily centralized economic system, the United States feared a communist relationship with Cuba.[87] In response, the US undertook trade embargo and sabotage to block multilateral foreign assistance to Nicaragua, readily destabilizing the economy.[88] With instability in the economy, Nicaragua was vulnerable to influences from the foreign sector, increasing trade deficit, accepting unavoidable, unfavorable foreign aid policy through the socialist bloc, and uncontrollable increased social expenditure[89]. The cumulative 1980-1984 trade deficit was more than $2 billion dollars, which was equivalent to the GDP. Notice in Figure 7 how trade declined after1980.[90]

Figure 7: Trade Deficit

(Figure removed for ILASSA publication)

Source: Francisco Mayora, "The Economic Trajectory of Nicaragua: 1980-84," 47. Seen in Bill Gibson *Overview of the Economy* from Political Economy p. 35

[87] For quick understanding see http://www-sul.stanford.edu/depts/hasrg/german/exhibit/GDRposters/history.html

[88] Claes Brundenius, "Industrial Development Strategies in Nicaragua," *The Political Economy of Revolutionary Nicaragua*, ed. Rose J. Spalding (Boston, MA: Allen & Unwin), 103.

[89] Simultaneously increasing social spending 30% more than Somoza time. The government placed a very high priority on social expenditure: education and health services were provided free of charge. Education spending rose from 2.4 per cent of GDP in the late 1970s to 5 per cent in the 1980s, while health spending increased from 1.6 per cent of GDP to 5 per cent in the same period. However, spending declined in the late 1980s, due to the effects of the economic embargo and the war, the consequent decline in GDP, and constraints placed on the budget by over-expansion of the public sector. For more information, see Vos and Johansson "Nicaragua."

[90] *Ibid.*

Note: computed as a ratio of export to import prices both with base 1980=100

Figure 7 shows that years Nicaragua created an extensive dependency on trade, an inherently volatile situation. Much of the volatility came though an import dependency from interregional Central America Common Market (CACM), as shown in Table 4, and US trade. After OPEC, the CACM declined, cotton and coffee met low market prices. The US embargo destabilized the entire economy.

Table 4: Intraregional Trade and Nicaragua's Shares of Intraregional Trade, 1976-1982

Years	Central American Intraregional Trade (m. U.S. $) [a]	Central American Intraregional Trade as Percentage of Total Central American Trade	Nicaragua's Share of Intraregional Exports	Nicaragua's Share of Intraregional Imports
1976	1264.0	20.0	18.1	23.0
1977	1518.0	17.9	17.0	22.5
1978	1747.3	20.2	16.9	15.7
1979	1852.4	18.8	10.0	11.7
1980	2367.1	21.8	5.9	28.2
1981	1963.7	19.7	6.9	24.0
1982	1595.1	18.4	6.4	22.2

[a] Exports (f.o.b.) and Imports (c.i.f.)

Source: IMF, *Direction of Trade Statistics - Yearbook 1983* (Washington, D.C.: IMF, 1983). Seen in Claes Brundenius, "Industrial Development Strategies in Nicaragua", *The Political Economy of Revolutionary Nicaragua*, ed. Rose Spalding (Winchester, MA: Allen & Unwin: 1987), 100.

In the post revolution, Nicaragua experienced negative foreign inflows of capital. Therefore, the cost of restructuring the broken nation after the revolution was heavily dependent on multilateral aid and financial loans. USAID, World Bank, and IMF were the major lenders until, under US influence, these multilateral loans ceased. At the same time, coffee and cotton's foreign earnings

were not very promising. Nicaragua had no other choice but to accept help from the socialist bloc (USSR, Germany, Bulgaria, Cuba).[91] Figure 8 below reveals the change in aid from multilateral sources to socialist sources after the US imposed sanctions.

Figure 8: Aid by Source

(Figure replaced with table data for ILASSA publication)

		1979	1980	1981	1982	1983	1984	1985	1986	1987
Credits*										
Multilateral		78.4%	32.5%	11.9%	18.8%	15.0%	0.0%	0.0%	0.0%	0.0%
Bilateral		20.6%	67.5%	88.1%	81.3%	85.1%	100.0%	100.0%	100.0%	100.0%
of which:	Western Europe	5.4%	12.0%	8.3%	7.8%	19.8%	5.3%	11.5%	12.9%	18.6%
	Socialist countries	0.0%	19.3%	20.1%	45.1%	38.5%	78.5%	87.0%	72.5%	81.4%
Grants										
Multilateral		10.5%	16.9%	12.0%	14.7%	6.9%	12.2%	4.8%	10.4%	16.8%
Bilateral		89.4%	83.1%	88.0%	85.3%	93.0%	87.7%	95.1%	89.6%	83.1%
of which:	Western Europe	35.6%	11.6%	14.3%	15.2%	11.1%	14.6%	6.2%	10.6%	31.7%
	Socialist countries	7.5%	48.4%	51.6%	63.2%	80.0%	72.1%	88.3%	76.6%	51.2%
Memo item: total in US$ millions										
Credits		271.7	528.7	728.7	498.9	437.8	628.3	924.5	201.2	229.2
Grants		88.8	147.8	73.8	98.8	181.2	144.3	272.1	316.7	155.6

* Concessional and non-concessional

Source: Taylor et al., *Nicaragua: The Transition from Economic Chaos toward Sustainable Growth,* (Stockholm: SIDA, 1989), based on data supplied by Ministerio de Cooperación Externa (MCE), seen in and adapted from Vos and Johansson, "Nicaragua", *Aid and Macroeconomic Performance*, ed. Howard White, (New York: St. Martin's Press, 1998), 142.

We see that multilateral aid decreased during the Sandinista government, with 70% of aid coming from the socialist bloc by 1984. However, the terms of trade from the new donor were not favorable to the recipient. Two thirds of the aid was source-tied with balance of payments support, i.e. use the funds to

[91] *Ibid.*

purchase donor country's fuel, machinery, or the aid would come in a direct commodity. What Nicaragua needed was currency to finance their budget deficit.[92]

Since the socialist aid was not resolving Nicaragua's economic difficulties, the Sandinista government resorted to printing money. This created a critical financial situation. Domestic prices skyrocketed as hyperinflation struck: inflation reached 43,029 percent per annum in 1989. Orthodox adjustment programs were attempted in 1989 to restore the economy, but could not stop the inflationary spiral. Instead, these measures brought recession and collapse in the public sector. Hyperinflation completely devastated the economy, as Nicaragua entered into 1990.[93]

Agrarian reform

The U.S Agency for International Development (USAID) stated in 1976 that "no formal national food and nutrition policy had been adopted by the government of Nicaragua nor has any multicultural policy or administration undertaken to confront the extensive malnutrition problem," the effects of which are shown in Table 3.[94] The Sandinista government sought to create an agrarian reform policy to eliminate persistent hunger, malnutrition, and income inequality in the rural population.

[92] *Ibid.*
[93] *Ibid.*
[94] George Pyner and Catherine Strachan, *Nutrition Sector Assessment for Nicaragua (*Managua: USAID, 1976), 60.

Achieving such an objective necessitated a sound food policy, programs to promote food security, and reliable income sources for the rural population. To this end, the Ministry of Agriculture and Land Reform (MIDINRA) conducted a comprehensive study on the existing food system, which yielded a strategy to address the problem.[95] The MIDINRA study identified two basic goals critical for future development: 1- food security and 2- generating foreign exchange.[96] These were not perceived as two separate goals; rather, they were interdependent, unifying objectives. The Sandinista strategy was to develop an economy where there was interplay between state and private property. In such a mixed economy, the broad goal of achieving food security incorporated the both export agriculture and domestic food production. The earnings from agro-exports were necessary to finance public expenditures and the enhance capacity to increase food production. This strategy required increases in food production and agro-exports.

A fundamental step towards food security focused on ensuring economic and physical access to adequate food supplies.[97] Economic access primarily meant improving consumers' purchasing power. This goal was achieved by a combination of price controls on basic food, employment generation for the rural population, and consumption subsidies to resolve food consumption dilemma. Physical access followed economic access when the population gained actual

[95] For further discussion see Biondi-Morra, *Hungry Dreams*, 30.
[96] *Ibid.*
[97] Biondi-Morra, *Hungry Dreams*, 37.

access to food.[98] On the supply side, this meant increased access to land, labor, credit, technical assistance, expanding distribution channels, price incentives, and adequate imports of food to meet the demand gap until domestic basic food production recovered.

In order to bridge the gap between the supply and demand for food, the government restored a large quantity of basic food imports, particularly during the first two years after the revolution. Strict priority was given to basic food imports, accounted for 84% of total food imports in 1981, compared with 48% in 1978. Details of Nicaragua's food imports can be seen in Table 5.

Table 5: Evolution of Food Imports, 1978-1984

	1978	1980	1981	1982	1983	1984
	Volume index: 1980=100					
Corn	33	100	65	47	264	34
Rice	0	100	61	0	13	48
Beans	140	100	216	18	178	88
Eggs	23	100	76	44	19	23
Chicken	9	100	120	10	17	0
Plantain	98	100	101	34	19	12
Potatos	65	100	164	38	1	12
Cabbage	20	100	113	4	0	0
Vegetable oil	14	100	96	76	77	55
Oil Seeds	21	100	52	94	149	128
	Millions of dollars					
Basic Food Imports	23.8	88.4	131.5	64.8	72.8	76.2
Total Food Imports	49.5	125.0	155.8	84.1	80.1	91.5
Total Imports	593.9	887.2	999.4	775.5	806.9	826.2
	Percentage					
Basic Food/Total Food Imports	48.1	70.7	84.4	77.1	90.9	83.3
Basic Food/Total Imports	4.0	10.0	13.2	8.4	9.0	9.2
Total Food/Total Imports	8.3	14.1	15.6	10.8	9.9	11.1

Source: Ministry of Foreign Trade. 1985

[98] *Ibid*.

By the mid-nineties it became apparent to the Sandinistas that agrarian policy was more complex than they originally assumed. In the first few years, the Sandinista government faced inexperienced government planners, administrative polarity, inadequate marketing expertise, and opposition from agro-export producers, all of this challenges were compounded by the US trade embargo, 80's global recession, and the concomitant decrease in foreign earnings. For the simplicity, the following discussion concentrates on food policy practices.

Food Policy Practice

In 1979, the Nicaraguan Agrarian Reform law was enacted with the goal of balancing export crop production and basic food grain production. It implemented two programs. The first phase was the immediate confiscation and nationalization of Somoza's estate to keep export agriculture intact and modernized. The second phase, which took place mid-1981, was the confiscation of idle and underused farms, which was later expanded to include the confiscation of land from those who had left the country.[99] This law sought to reduce "archaic" forms of land tenure and affected land, credit, even labor distribution.

Primary attention focused on land redistribution, which significantly tried to restore landless laborers and small farmers who had been disadvantaged by aggressive expansion of agro-export. The reform law also charged the Ministry of Agriculture to maintain the large, modernized export estate under the

[99] Unused farms were defined as land where less than 75% of acreage was cultivated. Those who own fifty manzanas on the Pacific coast or one hundred manzana anywhere else and rented this land for labor could also be affected. Seen in Enríquez, *Harvesting Change*, 89.

nationalized sector. Additionally, small farmers were organized into cooperatives to provide them with the greatest benefit of land, credit, and labor.[100]

Land

Land reform was one of the main areas of difficulty for the Sandinista government. Land distribution was the major issued pressed to the government by rural Nicaraguans, roughly half of who worked in the sector as only laborers. Similarly, pressure was exerted by traditional, privileged, large landowners whose lands were in jeopardy under the new land reform laws.

Under the mixed economy, the Ministry of Agriculture's agro-export operation constituted the better part of the area of the country[101] and maintaining an efficient economy of scale was crucial for continued foreign exchange earnings.[102] Much of this land was confiscated from Somoza and his associates under the Nicaraguan Agrarian Reform law was reorganized into state farms known as the Area of People's Property (APP).[103] Nevertheless, small farmers were guaranteed greater access to the land. This was accomplished through the confiscation of idle or underused lands that were then redistributed tot eh the peasants for domestic food production.[104]

Table 6: Changes in Land ownership, 1978-1988

Sector	1978	1981	1984	1988

[100] *Ibid.*
[101] Enríquez, *Harvesting Change*, 88.
[102] Wheelock, *Entre la Crisis.* Seen in *Ibid.*
[103] Mainly export producers to maintain a sustainable agro-export production. Brockett, *Land, Power, and Poverty,* 161.
[104] For in-depth discussion of the land redistribution policy, refer to Enríquez, *Harvesting Change*, 88-89.

Private				
Over 850 acres	36.2	14.8	12.7	9.5
86-850 acres	46.3	44.4	42.2	42
17-86 acres	15.4	15.3	6.9	7.2
Under 17 acres	2.1	2.1	1.6	1.6
Subtotal	100	76.6	63.4	60.3
Credit and Service co-ops		4.3	10	10
Production co-ops		1.4	7.8	13.3
State farms		17.7	18.8	13.3
Total	100	100	100	96.9[a]

[a] Remainder classified as abandoned

Source: Nicaraguan Ministry of Agricultural Development and Agrarian Reform as collected by Spoor 1995:55, seen in Charles D. Brockett, *Land, Power, and Poverty: Agrarian Transformation and Political Conflict in Central America, Second Edition,* (Boulder, CO: Westview, 1998), 161.

The Sandinista land redistribution was essential to accelerate cooperative efforts, though the process slow and cumbersome. By the 1984, three years after the legislation was enacted, only 31,000 families received access to land, representing only 9% of the total agriculture area, with the beneficiaries representing only 25% of the poor peasants and seasonal workers.[105] Contrastingly, 75% of the poor farmers were brought under cooperatives initiatives.[106] By 1982, a total of 2,849 cooperatives existed with 64,434 members. Accordingly, more of the land redistribution went to cooperatives than individual farmers so that they could obtain greater access to credit, technical assistance, commercializing produces. Since the small food producers were spread out geographically, the Sandinistas created cooperatives to maximize the

[105] Utting, "Domestic Supply," 132.
[106] Peter Marcheti, "Reforma Agraria y la Conversión Dificil: Reubicación de Recursos, Redistrubución de Poder y los Explotados del Campo en Chile y en Nicaragua," *Estudios Rurales Latinoamericanos* 4 (Jan – Apr 1981), 58. Seen in Enríquez, *Harveating Change,* 89.

impact of government assistance, thereby increasing food production, and income equality.

Credit

The traditional credit program used during the Somoza era reinforced the status quo of unequal distribution and agro-export production priority.[107] In that time, only 10% of agriculture credit went to the marginalized small landholders. Since small and medium sized producers were the basic grain producers, the discriminatory credit policy kept the basic grain production and productivity low. To bring equality and achieve self-sufficient food production, the Sandinistas devoted the newly nationalized banking system's primary attention to facilitating adequate credit to stimulate productivity on the nation's small farms.

The government offered attractive incentives like credit and technical assistance to increase participation in the new agriculture production system. This met with great success and the allocation of credit to small farmers expanded tremendously. Small producers received some seven times more credit in 1980 then they did in 1978 and altogether one third of the small and medium sized farmers received credit from the government in 1980.[108] Moreover, the amount of credit offered between 1979 and 1980 was five fold higher than during the Somoza era.[109] Table 7 shows the distribution of credit among rural farmers.

[107] Enríquez, *Harvesting Change* 94.
[108] Brockett, *Land, Power, and Poverty*, 163.
[109] CIERA, 1984. Seen in *Ibid.*

Table 7: Distribution of New Credit by Size of Producer - Rural Credit Program

Size of Landholding	Percentage of Clients who Began Receiving Credit After April 1980
0-10 mz.	65.5%
10-50 mz.	48.1%
50-200 mz.	33.8%
Total	53.6%

Source: CIERA, *Informe final: Impacto del Crédito Rural sobre el nivel de vida del capesinado* (Managua: CIERA, 1982), 225. Seen in Enriquez and Spalding, "Banking Systems and Revolutionary Change", 115.

As Table 7 shows, over 65% of small producers benefited from the credit program, most of who received credit for the first time in 1980. Accompanying the credit was technical assistance, which was most efficiently deployed to the cooperatives. This program was created to reinforce the growing movement of cooperatives and by 1983, 78% of the beneficiaries were members of cooperatives.[110]

The expansion of credit didn't increase small producers' productivity because the inexperienced facilitators planned the credit program poorly. For instance, many times the credit arrived after the harvesting season. In other cases, credit was distributed in areas so remote that the produce couldn't deliver their produce to urban area. The credit program lacked efficient distribution mechanisms to realize the potential benefits of the program.

[110] BND, *Información General: Crédito Rural Comparativo 1978-1983* (Managua: BND, 1984). Seen in Laura J. Enríquez and Rose J. Spalding, "Banking and Revolutionary Change," *The Political Economy of Revolutionary Nicaragua*, ed. Rose J. Spalding (Boston: Allen & Unwin, 1987), 115.

Sometimes, the credit was not use to increase basic grain production; rather, recipients used the credit to buy goods they had previously been unable to buy, despite the cooperatives facilitation of credit application. Consumption levels rose amongst the beneficiaries, as many small farmers considered it their due after so many years of exploitation[111]. Subsequently, repayment and production difficulties arose amongst those farmers, credit then functioned as a consumption subsidy, adding to the budget deficit as negative accounts, and contributing to Nicaragua's growing inflation. Finally in 1981, the government restricted credit distribution among small producers when the outcome the recipients output was below expectations, even though from a consumption point of view, the food security problem decreased. With this change, the amount of acreage financed reduced by 40% in 1984.[112]

Redistribution

Increased access to land, credit, technical support, and rent ceilings were all designed to encourage small farmers to produce basic grains. The government also implemented policies intended to improve the terms of trade between the countryside and the city, thereby encouraging production and facilitating improved consumption by the urban population.[113] Empresa Nicaraguaense de Alimento Básicos (ENABAS), was established to facilitate distribution and

[111] *Ibid.*
[112] Calculated from Banco Nacional the Desarrollo, "Información General, Crédito Rural, Comparativo 1978-83," (Managua, 1984) Mimeographed.
[113] Enríquez, *Harvesting Change*, 98.

marketing of various basic food. The main agenda was to offer better prices to the small farmer, and increase their standard of living.[114]

Another component of ENABAS guaranteed a subsistence quota for basic grain to urban consumer at a fixed price[115] and provided subsidized basic crops to the rural population.[116] Subsidies for this product reached 1,703 million cordobas, or 6.3% of government spending, by 1984, which were cut that same year under the pressure of the fiscal deficit. Moreover, the regional distribution system was subjected to bottleneck and delay, particularly in the interior region of the country where shortage frequently occurred due inadequate transportation. Another important constraint on domestic supply was that there was no regional reserve. Hence, delay in product distribution in the regions immediately reflected in consumption levels.

Table 8 below shows that the average per capita consumption increased initially for first few years, 1980-1982. However, the foreign exchange crisis and the beginnings of the contra war initiated a drop in consumption seen in 1984.

Table 8: Per Capita Consumption, 1972-1984

		Pre Revolution		Post Revolution		
Product		1972-1975[a]	1976-1978[a]	1980-1982[a]	1983	1984[c]
Corn	Lb.	197	181	174	192	165
Beans	Lb.	25.9	39.7	46	38.8	49.1
Rice	Lb.	50.8	40.3	65.1	70.5	80.8
Flour	Lb.	32.8	31.4	39.9	38.4	37.2
Veg. Oil	Lb.	16	17.1	23.7	26.6	22.7

[114] *Ibid.*
[115] In urban areas, each family member generally received 4 lbs of rice and sugar per month; the quota of other basic grains tended to oscillate. Vegetable oil, for example, varied between half liter to a liter per person, per month, depending on the total supply the state controlled at any given time.
[116] Utting, "Domestic Supply," 141.

Sugar	Lb.	79.6	98.1	91.1	102	104
Eggs	Doz.	2.2	5	6.4	6.7	6.3
Chicken	Lb.	2.5	4.6	9	8.1	6.7
Pork	Lb.	5.3	5.2	6.9	4.8	4.6
Beef	Lb.	21.7	25.7	20.3	18.2	18.9
Milk[b]	Gal.	4.1	4.7	5.5	6.2	5.6

[a] Yearly average for the period.
[b] Pasteurized milk only.
[c] Preliminary figures.

Source:CIERA. Seen in Peter Utting, "Domestic Supply," 140.

Instituto de Comercio Exterior y Interior (INCEI) and ENABAS worked together to encourage basic grain production by offering producers better prices by eliminating the middlemen, while INCEI also facilitated marketing. However, ENABAS was unable to meet its first year goal when it purchased only 12% of corn and 24% of beans at very low prices.[117] Pricing was not the only problem; ENABAS's infrastructure, particularly transportation and storage, was inadequate to accommodate scope of their endeavors. This deficiency impaired the state's ability to compete with the private sector.

At the same time, inflation was rising in leaps and bounds after 1981. Manufacturing goods became limited and consequently the price of consumer goods rose. Compounding the problems of inflation and the shortage of manufacturing capacity was the expanding contra war, as seen in Table 9.

Table 9: Annual Percentage Increase in "General" and "Food, Beverages, and Tobacco" Price Index, 1981-1985[a]

	1981	1982	1983	1984	1985[a]
General price index	23.3	22.2	32.9	50.2	184.8

[117] CIERA, *Informe del Primer Seminario sobre Estrategia Alimentaria* (Managua: CIERA, June 1983), 23. Seen in Enríquez, *Harvesting Change*, 99.

Food, beverages, and tobacco products	25.9	23.9	45.1	58.6	204.7

[a]1985 figures correspond to first 6 months only.

Source: National Institute of Statistics and Census. Seen in Utting, "Domestic Supply," 146.

In all, the effect of the contra war on the Nicaraguan economy was devastating. Not only did resources vital for re-building the economy have to be directed towards the effort but the contra movement also sidetracked the limited administrative expertise. The contras strategically targeted agro-export producers, devastating the export crop production. Moreover, scores of soldiers joined the fight against the contras, seriously depleting the needed harvest workforce, compounding the issue even in areas not directly engaged in warfare. The economy collapsed, as did agricultural production, followed by the fall of the Sandinista government in 1989.

Food Security Under Structural Adjustment

Nicaragua is a victim of the law of uneven development, described by Hymer as "the tendency of the system to produce poverty as well as wealth, underdevelopment as well as development." Looking to the year 2000, Hymer saw a "regime of North Atlantic Multinational Corporations" that would "tend to centralize high-level decision-making occupations in a few key cities in the advanced countries, surrounded by a number of regional sub-capitals, and confine the rest of the world to lower level of activity and income."[118] Nicaragua was clearly confined to these lower levels, largely due to political economic conditions created by the United States, as described in the preceding chapter. The US intervention was a necessary precondition to implement the development agenda dominated by the so-called "Washington Consensus", utilizing tenets of market liberalization, privatization, and restrictive macroeconomic policy.[119]

In 1990, Nicaragua embraced a structural adjustment program (SAP) that gives the nation less control over the policies it employs, as Nicaragua is compelled to comply with the conditions imposed by International Monetary Fund (IMF) and World Bank (WB) loans. IMF and WB currently play the role of policy makers for the nation, translating the objectives of donor nations like the

[118] S. Hymer, "The multinational corporation and the law of uneven development," *Economics and World Order: From the 1970s to the 1990s,* ed. J.N. Bhagwai (London: Macmillan, 1972), 114. Seen in Roger Sugden and James R. Wilson, "Economic Development in the Shadow of the Consensus: A Strategic decision-making Approach," *Contributions to Political Economy* (New York: Academic Press, 2002), v21, 111.
[119] Sugden and Wilson, "Economic Development," 111.

US into actual policies, such as opening up new markets.[120] Indeed 'Washington Consensus' is very much in force of SAP to justify uneven development though its free market prophesies.

Further economic theories emphasized that underdevelopment is not a simply a consequence of the policy and practices internal to countries and regions themselves, rather, they are an integral part of the world capitalist system.[121] Nicaragua is caught in the system, where international policy makers and economists focused primarily on export crop production, remarkably ignoring the traditional rural livelihood in domestic agricultural production, countries economy got stuck in a spiraling down loop.

It is important to remember that SAP is based on a model of capitalism that is organized according to transnational capital. In this system, power is transferred from the 'international elite' to 'national elite' to design strategies to stimulate the economy. This approach focuses on the 'elite' interest – a development strategy that doesn't incorporate broader national problems or their solutions. Clearly, this is the case in Nicaragua's present socio-economic condition.

This section analyzes SAP from the early 1990s and identifies pitfalls in the policies presently implemented. Specifically, Strength Growth and Poverty Reduction Strategy (SGPRS)[122] that Nicaragua is implementing since 2001

[120] *Ibid.*
[121] *Ibid*, 122.
[122] World Bank, "Nicaragua Poverty Assessment: Challenges and Opportunities for Poverty Reduction," (2001).

promise to eliminate poverty by 2015 with the financial leverage resulting from the Highly Indebted Poor Countries (HIPC) initiatives. Under HIPC, SGPRS is created by WB and with the help of national government.[123]

This paper pays particular attention to the food security subsections of the Poverty Reduction Strategy while discussing the present agrarian condition. Food security is a major component of this strategy because food security and poverty are so interrelated. Yet, the question remains, will this package really eliminate poverty and secure food for all by year the 2015 as targeted?

To reveal some of the paradoxes of this new economic initiative, we will first identify some of the major economic conditions, internal or external, that have affected agriculture since 1990. Simultaneously, we consider the organization of different projects and programs dealing with food supply and demand outlined by the SAP. Considering that food security hasn't improved over the last 10 years of IMF and WB controlling the core of Nicaragua's economic system, we responded to such failure with alternative approaches to deal with food security as a key development issue. Our response is based on my interviews with the Ministry of Agriculture (MAGFOR), Ministry of Nutrition and Health and a number of NGOs and government project managers who are working on the food security issue.

[123] *Ibid.*

Brief Theoretical Foundations of Structural Adjustment

To facilitate our understanding, we examine the theoretical foundation of Structural Adjustment (SA). So what is SA? Structural Adjustment is deeply rooted with the conditional structural adjustment loans (SALs) utilized by the Washington Consensus. As Waden describes it, "The eruption of the Third World debt crisis in mid-1982, a grand opportunity was presented to further the Reaganite agenda of resubordinating the South via structural adjustment schemes."[124] The immediate objective was to rescue northern banks that had become overenthusiastic in the Third World after the downfall of Northern economy due to the Cold War.[125] The strategy was to integrate southern countries into the North-dominated world economy to create a threshold for the northern product market. Indeed, under the Washington Consensus, the law of uneven development was very much in force, and countries that underwent of SAP, never realized sustainable growth.[126]

To accomplish the twin goals of rescuing northern banks and expanding northern product markets, the World Bank and the International Monetary Fund (IMF) championed the strategy of providing "standby loans" to Third World debtors with billions of dollars in quick-disbursing schemes with flexible or high fixed interest rates. For most of Central America, the interest rate was flexible, which greatly contributed to today's spiral of debt and dependency. Later in the

[124] Walden Bello, "Structural Adjustment Programs: "Success" For Whom?" *Case Against the Global Economy: And for a Turn Toward the Local*, ed. Jerry Mander and Edward Goldsmith (Sierra Club Books, 1997), http://www.converge.org.nz/pirm/structur.htm .
[125] Walden Bello, *Dark Victory: The United States, Structural Adjustment and Global Poverty* (Food First, 1994).
[126] Bello, *Dark Victory.*

chapter, Nicaragua's SAPs true payoff of food insecurity will be revealed, which bottlenecked the economy's growth and development.

SAPs and SALs are interrelated. To receive SALs, the government had to agree to undergo a structural adjustment program. SAP's important objective is to improve the structure of the economy in such a way that the price signal can ensure the efficient distribution of resources. In other words, under SA, market power and Adam Smith's "invisible hand" determine the economy of scale through price signals from customer to producer, thus achieving comparative advantage.[127] In general, this objective is true under perfect competition market situations where price signal depends on a correctly valued exchange rate, the absence of rent seeking mechanisms (for example oligarchy), low transaction costs (for example transportation), and flow of perfect information. The reality of SA is far from this ideal. The objective essentially insisted "debtor countries remove the government from the economy as the price of getting credit."[128]

Decentralizing the Latin American economy wasn't the best solution to their defaulted debt payments to the northern banks after the economic shock of the 1970s and 1980s. Debtor countries had no choice but to capitulate to maintain compliance with the World Bank and its loans. Approval and loans were both essential a country's eligibility for further financial assistance from multilateral/ bilateral institutions to continue to make interest payments to the private banks.

[127] Richard Eberlin, "Comparative Advantage of Food Crops Under Structural Adjustment in Nicaragua," *Agrarian Policies in Central America*, ed. Wim Pelupessy and Ruerd Ruben (New York: St. Martin's Press, 2000).
[128] John Sheahan, "Development Dichotomies and Economic Development Strategy," in Simon Teitel, ed., *Towards a New Development Strategy for Latin America* (Washington DC: Inter-American Development Bank, 1992), 33. Seen in Bello, "Structural Adjustment."

As one Treasury official involved in the debt negotiations with Mexico put it, "Only countries that commit to market-oriented economic reform will get the [World Bank's] help."[129]

To conduct a smooth and successful transition to decentralized market-oriented economies in the centralized Latin American economy, bilateral organizations (World Bank, International Monetary Fund, International Development Bank) prepared a guideline governments needed to abide by. The conditionality of debt relief programs requires countries to undergo economic structural adjustment, and although SAPs differ somewhat from country to country, they typically include:

- A shift from growing diverse food crops for domestic consumption to specializing in the production of cash crops or other commodities (like rubber, cotton, coffee, copper, tin etc.) for export;
- Abolishing food and agricultural subsidies to reduce government expenditures;
- Deep cuts to social programs, usually in the areas of health, education, and housing, and massive layoffs in the civil service;
- Currency devaluation measures which increase import costs while reducing the value of domestically produced goods;
- Liberalization of trade and investment and high interest rates to attract foreign investment;
- Privatization of government-held enterprises.[130]

[129] Miller, 1991. Seen in Bello, "Structural Adjustment."

Theses terms established the framework by which national macroeconomic decisions would be made. The prerequisite conditionality established eligibility for loans and provided a means of guaranteed payment for previously contracted loans.[131] Unfortunately there is a "sharp disparity between the expected and the actual results of a structural adjustment program.[132] As Walden Bello explains, "By 1992, it was clear that the South had been transformed: state participation in the economy had been drastically curtailed; government enterprises were passing into private hands in the name of efficiency; protectionist barriers were being radically reduced; and, through export-first policies, the internal economy was more tightly integrated into world markets."[133]

For people in the more than 70 countries which have been subjected to 566 IMF and World Bank stabilization and "structural adjustment" programs (SAPs) in the last 14 years, all of them have faced poverty, high unemployment, increasing unemployment.[134]

[130] The People's Summit, "What are Structural Adjustment Programmes?" (http://www.chebucto.ns.ca/Current/P7/bwi/cccsap.html).
[131] C. Krauss, *Inside Central America* (New York: Summit Books, 1992), 17-24; 32-43; 210-215; 221-223 and Henry Kissenger, *Report of the National Bipartisan Commission on Central America* (Washington, D.C.: U.S. Goverment Printing Office, 1984), Chapter 1. Seen in Giovanni Reyes, "Major Theoretical Foundations of Economic Adjustment in Latin America," *Sincronía* (http://fuentes.csh.udg.mx/CUCSH/Sincronia/reyes6.htm, 2002).
[132] Bello, "Structural Adjustment."
[133] Bello Walden, "The Future of Global Economic Governance," *On the Threshold: The United Nations and Global Governance in the New Millennium*, (United Nations University conference, January), http://www.unu.edu/millennium/bello.pdf , 10.
[134] Bello, *Dark Victory*.

Necessity of Structural Adjustment in Nicaragua

There is a contradiction in neoclassical stabilization policy makers' perspective regarding the solution to indebted, poor economies and social policy analysis.[135] Economist Lance Taylor and his associates agree that the World Bank and IMF misdiagnosed the problem of Latin American economies "import substitution" using the Bank's own data.[136] The main barrier in the pre-SAL period was not that the Latin American economy was not integrated with the world economy, as the IMF and World Bank insisted, but that they were subjected to two great shocks – the OPEC oil price rise in the 1970s and the debt crisis in the 1982.

Previously, Latin American countries enjoyed straight growth during the 1960s through early the 1970s by practicing import substitution strategy.[137] After several decades of impressive economic growth, the OPEC crisis hit the oil importing Latin American (LA) countries. Then with the influx of funds from the oil-producing countries, the multilateral lending agencies stepped in to resolve the problems of mounting oil bills and deepening foreign debt caused by the new, massive oil shock.[138] In addition to that, multilateral agencies identified that since LA's economic model in the mid 1900s was following import substitution (IS),

[135] This is very apparent in the criticisms on free trade and SAPs.
[136] L. Taylor, "The World Development Report 1991: A Critical Assessment," in United Nations Conference on Trade and Development, International Monetary and Financial Issues for the 1990s (Vol. I), (New York: United Nations, 1991).
[137] Import substitution policies were simply those that emphasized local production for local consumption, thereby promoting diverse production and national self-sufficiency, especially in the area of primary good and services. This was the common practice in Latin America from 1960-1973.
[138] Laura Enríquez, "The Varying Impact of Structural Adjustment on Nicaragua's Small Farmers," *European Review of Latin American and Caribbean Studies* (2000), 69.

this was deteriorating the trade in the international, integrated economy, which contributed to the crisis.[139] During that time, Nicaragua was a victim of mushroomed foreign debt and a run-away inflation rate that had accumulated since 1973. However, the failure of the Nicaraguan economy started even before the oil shock.

Oligarchic social structure concentrated on agro-exports, political economic factors, and US intervention in Sandanistas' era 1980s resulted in hyperinflation and high debt. The mounting inflation rate brought the biggest economic shock in 1989 when an economic austerity plan introduced in 1988 couldn't control the inflation phenomena, which devastated the economy.[140] During this economic crisis, the nation faced massive capital flight and a huge budget deficit. Clearly, trade deficit was the main influence in the imbalance. With the drying up of concessionary aid for reconstruction, risky economic conditions, it became increasingly difficult to finance the deficit on 'soft' terms and recourse to commercial borrowing, driving up the interest.[141] The time was ripe for SA.

In 1990, with the induction of Chamorro government, the US uplifted their embargo and Nicaragua embraced orthodox SAP. Following the path of SAP, Nicaragua government's policies and budget implemented all the conditionalities to restore 'market efficiency'. This transformation involved the full elimination

[139] *Ibid.*
[140] *Ibid*.
[141] George Irvin, "Nicaragua: Establishing the State as the Center of Accumulation," *Journal of Economics* (1983).

of price controls, trade liberalization, financial sector reform, and privatization.[142] Further restrictions were brought to Nicaragua under different loan packages. Some of the limitations brought since the 1993 negotiation include massive cuts in public spending, pegging exchange rate to the US dollar, and significant reduction in credit facilities.

Instead of describing SAP in Nicaragua in its entirety, what follows is a discussion of the direct changes in the agricultural sector due to SAP and its impact on food security. For the purpose of discussion, emphasis is placed on particularly small producers, as they are the main domestic food producers.[143]

Agriculture under Structural Adjustment:

Agriculture played a significant role in the Nicaraguan economy for at least 300 to 400 years. The sector accounts for 24% of GDP and employs almost 47% of the employed population.[144] In particular, the rural poor populations, which account for the majority of the population, derive most of their income from agriculture. Improving productivity in this sector is therefore considered integral to promoting economic growth and alleviating poverty in the country.[145]

We have already illustrated how each principal government promoted agro-export production as a means of economic development, such as coffee and

[142] V. Corbo., M.Bruno, S fisher, R Laban, & P Rojas, "An Economic Assessment of Nicaragua," (mimeo) (Stockholm: SIDA).
[143] Enriquez, *Harvesting Change.*
[144] Awudu Abdulai and Richard Eberlin, "Technical Efficiency During Economic Reform in Nicaragua: Evidence from Farm Household Survey Data," *Economic Systems*, Vol. 25 (2001).
[145] Biondi-Morra, *Hungry Dreams*.

cotton, with very little importance placed on food crop production. Hence, the Sandinista government was compelled to implement a centrally planned economy with greater emphasis on the ignored food crop sector. However, we know the Sandinistas lost popular support after being labeled "communist" and enduring the US embargo. The newly elected government in 1990 began implementing SAP aimed at rectifying the economic disarray in the country.[146] "But what exactly did the implementation of SA mean of agriculture production?"[147]

In conforming to the dictates of IMF, the World Bank, and the International Development Bank (IDB), as well as those of the US government, there was a major shift in the interest of government priorities, which significantly affected poor farmers. We will focus on four major micro-variables: land tenure, credit facility, technical assistance, and market – each inseparable from the agricultural sector. We will see under SAP cutbacks in government spending on the land tenure problem, drastic reduction in the credit system for small producers, elimination of technical assistance for small producers, and agrarian trade liberalization towards an open agriculture market. These effects made the small producers vulnerable and impeded food production. As a result, poor small farmers were pushed further into deep poverty.

[146] Abdulai and .Eberlin, "Technical Efficiency."
[147] Enríquez, "Varying Impact," 4.

Land Tenure and Reform under SAP

Nicaragua, like the rest of Latin American, experienced profound social and economic inequality, which repeatedly resulted in social unrest, violent conflict, and a push for state-led redistribution. As we noticed, the major land tenure problems happened over the last three decades, and resolution has yet to be reached. Political turmoil and confusion prevailed across the land.[148]

After the fall of Sandinista government, the new government transitioned back to a market economy. As such, the land redistributed to cooperatives and landless individuals or small farmers (about 40% of the all agricultural land), used to create economic equality and increase food production, were regarded as illegal. Those elite, influential land-holders who lost land during the Sandinista era, demanded compensation from the new government, incurring a substantial fiscal cost. The round of post-Sandinista land redistribution also created violent conflict among the rural population who lost their land under the reform law. Continuing the tumultuous land tenure situation, the National assembly passed a property stability law in 1995, which was subsequently reversed in 1996 by the new Aleman government.[149]

Such political turmoil and frequent policy reversal created legal confusion and land tenure insecurity. Even in 2001, Nicaragua couldn't break free from the

[148] Lee J. Alston, Gary D. Libecap, and Robert Schneider, "The Determinants and Impact of Property Rights: Land Titles on the Brazilian Frontier," *Journal of Law, Economics, and Organization*, 21(1) (1996) and Rasmus Heltberg, "Property Rights and Natural Resource Management in Developing Countries," *Journal of Economic Surveys*, 16(2) (2002).
[149] Rikke J. Broegaard, Rasmus Heltberg, Nikolaj Malchow-Møller, "Property Rights and Land Tenure Security in Nicaragua," http://www.econ.ku.dk/heltberg/Papers/landtenureNicaragua.pdf (2002), 10.

long established trend of unequal land distribution. Despite gains in land access, only minor improvements were realized in social structure and poverty eradication. As shown in Figure 9, 1% of the population held 41% of the land in 1963, while holding only 22% of the land in 2001. However, the bottom 35% of the population gained only 0.5% over the same period, totaling 2% in 2001. While this is an improvement, there still exists a significant inequality in land distribution.

Figure 9: Land Distribution, 1963-2001

(Figure replaced with table data for ILASSA publication)

	1963	2001
Bottom 35% of population	1.5%	2.0%
Top 1% of population	41.0%	22.0%

Source: INEC (June 2002).

Even today, poor farmers' lands are illegally confiscated by the rich. Government policy maker are still in crisis to address this critical issue. It is important to mention that even the poverty reduction strategy didn't mention any solution to resolve the main economic capita crisis.

So regarding how ever measure the nations undertakes to eliminate poverty if the basic structure of the ownership is not fixed every effort will be nothing but building a sand castle. After all a for a country like Nicaragua every wise investment of their debt relief money is important.

Credit Structure

"As the government has revamped financial institutions and scaled down its economic intervention, it has largely left small farmers adrift in an alien market, some experts say. 'The change that has had the greatest impact has been in credit,' says Alfredo Ruiz, a research at NITLAPAN Institute at Managua's Central American University. 'The government has closed a lot of bank branches in poor rural areas, and raised loan requirements for the rest.'"[150]

David Dye, 1994

An unapparent influence to credit allocation is land documentation, such as titles, deeds, and land reform documents, which may or may not be registered in the relevant public register. This process is very expensive and complex in nature, so most of the poor farmers did not register their land. Under the newly privatized banking, SAP harshly restricted agriculture credit opportunities for small-scale farmers without land title, as fully formalized and registered land title is one of the major prerequisite for institutional credit.[151]

Table 10 and Table 11 show the discrepancy between funding for agro-exports and basic grains, which is at least an order of magnitude different. Table 10 also demonstrates the elimination of cotton production as an export crop and the continued strength of coffee production as a dominant investment area. These figures account for changes effected by SAP in the early 1990s. SAP dictated

[150] David R. Dye, "Nicaragua Government Promises to Help the 'Forgotten' Peasants", *The Christian Science Monitor*, http://www.owlnet.rice.edu/~poli354/Nicaragua/940209_Nicaragua_poor.html (1994).
[151] Jon Jonakin, "The Impact of Structural Adjustment and Property Rights Conflicts on Nicaragua Agrarian Reform Beneficiaries," *World Development*, 24 (7) (1996).

lower agricultural credit lines, which dropped 51.5 percent from 1995/96 to 1991/92. Over the same time period, coffee production lost 43.7 percent of its former level, while corn and beans lost 94 and 93 percent of credit, respectively.[152] Not surprisingly, small and medium producers lost 52 percent of their share of total credit in 1995/96 from 1991/92, while large producers gained 229 percent over the same period.[153]

Table 10: Agro-Exports: Area Harvested, Area Financed, and Cordoba Financed

(Thousands of Manzanas), (Thousands of Cordoba)

	Agro-exports								
	Coffee			Cotton			Sugar Cane		
Year	Harvested	Financed	Cordoba	Harvested	Financed	Cordoba	Harvested	Financed	Cordoba
1995/96	120.3	45.6	245237.8	12.2	12.8	35043.4	64	26.1	2583
1996/97	120.7	45.6	199333.6	5.2	4.7	9048.8	71.4	29.2	3324
1997/98	132.9	64.5	411648.1		3.6	3619.1	74.6	52.7	8649
1998/99	133.5	77.4	950583.2				76.4	47.4	15735
1999/00a	143.4	100.4	1439245.3				79.8	60.6	15776
2000/01b	154.7	44.1		0.6			73.2	19.6	

a 1999/00 Cordoba estimated data.

b Forcasted Data, 2000/01 Cordoba not available.

Source: Harvested and Financed from INTA, Cordoba from INEC (2000).

Table 11: Basic Grains: Area Harvested, Area Financed, and Cordoba Financed

(Thousands of Manzanas), (Thousands of Cordoba)

	Basic Grains								
	Rice			Beans			Corn		
Year	Harvested	Financed	Cordoba	Harvested	Financed	Cordoba	Harvested	Financed	Cordoba
1995/96	89.9	21.6	31777.8	197.8	2.6	832.7	399.8	8.2	3574.2
1996/97	96.6	17.9	30997.8	171.3	0.2	89.8	398.5	1	1786.8
1997/98	107	15.7	51387.8	192.9	1.4	1217.1	333	10.9	10043.5
1998/99	119.9	12.1	68015.8	270.5	0.1	99.2	360.9	0.7	1042.7
1999/00 a	87.9	19.6	90295.8	195.6			365.4	0.3	1047.7
2000/01 b	129.6	10.5		290.9			441.8	0.2	

[152] Enríquez, *"The Varying Impact,"* 52.
[153] Calculated from *Ibid*.

a 1999/00 Cordoba estimated data.
b Forcasted Data, 2000/01 Cordoba not available.

Source: Harvested and Financed from INTA, Cordoba from INEC, (2000).

As in previous times, Nicaragua's economy is heavily dependent on agro-export crops, which average roughly 70 percent of all export revenues. This makes foreign earnings from agro-exports extremely vulnerable to shocks from price fluctuations in the international market. For instance, coffee prices rose from 1993 to 1997, but then dropped sharply in 1998. As the coffee prices dropped, production lessened accordingly as shown in Figure 10. Export revenues and foreign reserves dependent on coffee exports would suffer as well.[154]

Figure 10: Coffee Price vs Coffee Production

(Figure removed for ILASSA publication)

Source: BCN and INTA 2000.

As Figure 10 shows, production followed price levels. Since Nicaragua is so dependent on agro-exports for foreign earning and employment, lower international prices have several consequences. First, decreased foreign earnings limits budget allocations for agro credit. Second, decreased production reduces employment on coffee plantations, which increases the number small farmers who produce to sustain themselves. Finally, the increased number of food crop farmers increases pressure on the shallow credit system.

[154] This should work in practice as well as theory, though I could not locate foreign income data broken down by specific export crops to support this argument.

According to the Central Bank's 2001 annual report, private banks' agricultural credit distribution declined 50% from 2000 levels.[155] Due to cutbacks in social spending from SA, credit facility declined for agriculture, pushing interest rates unreasonably high. In the summer of 2003, rates averaged 14%, reaching as high as 22% for poor farmers, depending on the recipient's risk level.[156] The government has no structural initiatives to facilitate a low interest loan, and such initiatives are not taken by international organizations since there are no safety nets to protect any investments.[157]

In such an economic climate, farmers or landless producers cannot afford to receive credit. Moreover, recent data suggests that one-time or short-term credit is an unreliable catalyst for growth in basic grain production, as indicated in, Figure 11, Figure 12, and Figure 13 below, basic grain production reacts inconsistently and unpredictably to short-term credit. This trend is dangerous to both lenders and borrowers alike. Since farmers may not realize production gains from the loans, they may likely be unable to repay the debt, incurring a loss to the lenders, and preventing farmers from receiving future loans.

Figure 11: Rice Credit Vs Production

(Figure removed for ILASSA publication)

Sources: Credit, MAGFOR. Seen in INTA; Production, MAGFOR.

[155] Crops especially affected include coffee, sugar, and oil seeds.
[156] Interview with MAGFOR (August 2003).
[157] Nicaragua's land tenure problem inhibits recovery options for defaulted loans. Lenders are wary to invest in such a shaky environment.

Figure 12: Bean Credit vs Bean Production

(Figure removed for ILASSA publication)

Sources: Credit, MAGFOR. Seen in INTA; Production, MAGFOR.

Figure 13: Corn Credit vs Corn Production

(Figure removed for ILASSA publication)

Sources: Credit, MAGFOR. Seen in INTA; Production, MAGFOR.

In the shaky economy, only coffee received long-term credit. Under Nicaragua's SAP, coffee exports are still considered the vehicle to economic solvency, and so coffee was the only recipient of long-term credit. Table 12 shows credit distribution discrepancies between basic grains and agro exports.

Table 12: Short and Long Term Agricultural Credit in Millions of Cordobas

	1995/96		1996/97		1997/98		1998/99		1999/00		2000/01*	
	Mzs.	Amount	Mzs.	Amount	Mzs.	Amount	Mzs.	Amount	Mzs.	Amount	Mzs.	Amount
SHORT TERM CREDIT												
AGRICULTURAL EXPORTS												
Cotton	12765.0	40.2	4738.0	9.0	3616.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0
Coffee	45632.5	181.6	45643.0	181.8	64530.0	335.6	77388.4	783.0	100386.2	1514.9	44098.6	736.1
Sugar Cane	26064.0	27.9	29236.0	33.2	52737.0	86.5	47427.7	141.1	60618.2	196.1	19639.3	71.2
INTERNAL CONSUMPTION												
Rice	21626.0	36.3	17904.0	31.5	15650.0	51.4	12076.2	68.0	19557.3	116.3	10484.0	330.0
Corn	8208.0	3.6	1043.0	1.8	10886.0	10.0	688.5	1.0	250.6	1.2	224.0	0.2
Beans	2635.0	0.8	187.0	0.1	1386.0	1.2	76.0	0.1	0.0	0.0	0.0	0.1
LONG TERM CREDIT												
Coffee	28208.0	78.2	3088.0	21.3	8406.0	76.0	7408.8	167.6	18394.7	363.7	3772.4	123.7

*January 2001 Data

Source: MAGFOR, seen in INTA, (2000).

Notice that even though financing for rice went up, corn and bean financing declined over the same period. Most rice is produced by large producers, who received the credit to facilitate irrigation and fertilization. It is worth noting that rice is also being exported, giving the crop higher priority for credit under market capitalized economic condition.

From the small producer's prospective, there was little credit for basic grains. Since corn is produced mainly by small farmers and cooperatives, changes in the credit for small farmers are reflected in credit allocated for corn production. For instance, the shock in early 1998 from SAP cutbacks in social expenses reduced the capacity of BANADES, which finally closed its doors later that same year. As a result, small farmers were entirely excluded from state-sponsored credit.[158] Basically, Nicaragua's credit system still facilitates large estate that have higher market value, like rice, rather than crop produced by small farmers, like corn and beans.

Technical Assistance

Another agricultural resource that was essentially eliminated with the austerity measures undertaken through the Chamorro government's SA was technical assistance. Prior to the 1980s, this resource had only been available to those who could pay for it. Under the Sandinista government, it was considered part and parcel of agrarian reform and agricultural development efforts. As such, its availability –free of charge– expanded dramatically. However, with the

[158] Enríquez, "Varying Impact," 52.

implementation of SA in 1990, technical assistance reverted to being a resource whose use was limited primarily to the large producers who could pay for it – a discrepancy seen in Table 13.

Table 13: Number of Farms Receiving Technical Assistance 2000-2001

Total Farms	Receive Technical Assistance	Don't Receive Any Assistance
199549	23677	168529

Source: INEC, *Diagnostico de Pobreza*, (2000-2001).

Notice that 84% of farms didn't receive any technical assistance, which is known to increase productivity. Given Nicaragua's history, small farms and basic grain producers are consistently denied access to technical assistance, and likely constitute the majority of the 84% who didn't receive assistance.[159] As a result, basic grains productivity doesn't increase, as seen later in this chapter in Figure 15, preventing food security. Now, under SA, increased productivity is a measure of efficiency and efficiency is pillar of success. But, basic food production has never been of importance to SA.

While large farms have access to technical facility, the majority of Nicaraguan small and medium farms are still using traditional agriculture systems. This is largely due to financial constraints, insufficient knowledge, or inadequate infrastructure to gain access to the technical support. Figure 14 shows

[159] INEC, *Diagnostico de Pobreza*, 2000-2001.

the percentage of farms still dependent traditional farming methods, and the few farms utilizing modern technology.[160]

Figure 14: Number Of Farm That Use Traditional And Non Traditional Technology To Produce

(Figure replaced with table data for ILASSA publication)

	Method of Agriculture				
		Animal	Tractor	Hand Tools	Other
Number of agriculturally active farms	181490	60420	16723	112305	105131
Percentage	100.0%	33.3%	9.2%	61.9%	57.9%

Source: INEC, *Diagnostico de Pobreza,* (2000-2001).

At this point, we will turn our attention to failures in structural adjustment driven projects. These observations were made during my trips to Nicaragua.

1. Many international organizations and government projects like INTA, MAGFOR, FUNICA, and UPANIG are very actively pushing for technological progress but without a cohesive strategic vision binding their efforts. For example, Pacific coast farmers are often exposed to several different technological pilot projects by, but before they can even grasp the new ideas, they become experimental farmers for another technical assistance project. In the long run, the farmers actually don't receive lasting benefits from the pilot projects. Rather, they get confused.

2. There are no follow up systems for any of the technical assistance projects that I was exposed to, even though Nicaragua SA projects should have

[160] Tradition farming uses animals and hand tools for farming.

passed the experimentation phase.[161] 13 years have passed since Nicaragua underwent SA, but when I asked the project managers to quantify the success of their past pilot projects, none could produce objective data validating their success.

3. Nicaragua not only lacks infrastructure to support technological development, it also lacks an established strategy to mitigate the flow of technological information to the farmer to integrate new technologies with existing useful knowledge. In other words, there are not enough extension agents, researchers, and government agencies to carry out projects.

4. There is no coordination between private and public sector efforts to facilitate technical support to the agricultural sector. For instance, the government's loan funded project, "Pound for Pound", provides high-yield seeds to farmers, but it does not facilitate the technical support required to realize the seeds potential, such as fertilizer or irrigation. The farm farmers must buy technical support from the other projects. Often times, this is not possible since many agricultural areas are not equipped with technical support agencies and there is no credit support system to assist the small farmer purchases. In other cases, universities or researchers provide training or extension services to NGOs or farmers, but they work in isolation with no effective linkages among them.

[161] MAGFOR, FUNICA, INTA, CARE project, Pound for Pound program, UNA Economist etc.

5. Continuing with the Pound for Pound example, the project lacks a long term projection of the projects side effects. "Pound for Pound" exchanges a pound of traditional, low-yield seeds for a pound of genetically modified, high-yield seeds. These seeds were initially given at very low cost but eventually farmers would have to buy the seeds each year, as the plants' seeds can't be sown. Interestingly, the seed manufacturers are US-based companies. My interviews revealed that there has been no scientific research to investigate how environmentally compatible the seeds are or their long run impact on farmland. Even though production is increasing right now, my questions remain how efficient is it to promote an American manufacturer using Nicaraguan government loan money and secondly, what sort of sustainable basic grain production is this when the long-term effects of improved-imported seed dependency hasn't even been studied?

It is not surprising to see that Nicaragua has yet to resolve its land tenure issues, credit problems, and insufficient technical assistance service, given that SAP developed an open market at the expense of small farmers. One indicator of this is lackluster gains in basic grain production, as seen in Figure 15.[162]

Figure 15: Basic Grains Growth Rates

(Figure replaced with table data for ILASSA publication)

Agricultural Cycles 1994/95-1999/00 (Thousands of tonnes)

Agricultural	Rice	Beans	Corn

[162] Some research suggests Hurricane Mitch may be to blame for poor production figures, though this assertion was refuted by World Bank's "Poverty Assessment," (2001) and FAO's "Analysis of the Medium Term Effect of Hurricane Mitch on Food security in Central America" (2001).

Cycle	ton.	%Growth	ton.	%Growth	ton.	%Growth
1994/95	113.4	0.0%	83.5	0.0%	241.2	0.0%
1995/96	128.2	13.1%	68.0	-18.6%	330.1	36.9%
1996/97	142.8	11.4%	74.7	9.9%	322.1	-2.4%
1997/98	166.3	16.5%	71.4	-4.4%	263.5	-18.2%
1998/99	171.2	2.9%	148.7	108.3%	299.8	13.8%
1999/00	135.5	-18.5%	134.2	88.0%	292.1	10.9%
2000/01	102.4	-40.2%	62.2	-58.2%	256.5	-14.4%

Source: Ministry of Agriculture.

The replacement of the Sandinistas' socialist economic system with SAP's capitalist system may have facilitated economic growth, but it left the poorest with virtually no safety nets to protect them, exemplified by stagnant basic grain production and consistent food insecurity. As we know, the majority poor people in Nicaragua are dependent on the agriculture, whether as agro-export labor or basic grain producers. Even though HIPC initiatives seem to improve infrastructure, the poor don't receive access to the development. While infrastructure should have increased food security, SAP neglected the growth of basic grains. Ultimately, hunger prevails as the poor became poorer.

Policy Recommendations

"No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable," as Adam Smith so eloquently put it.[163] In recognition of this basic truth, the Nicaraguan government affirmed at the World Food Summit 2000 its commitment to reducing the prevalence of extreme poverty by half by 2015, as well as reducing child malnutrition, expanding sanitation services, and reducing illiteracy.[164] Since we are concerned with food insecurity, will now make some policy recommendations to work towards the alleviation of food insecurity. As discussed in previous sections, there are two main obstacles impeding food security in Nicaragua, namely, rural income and access to food. Accordingly, this section focuses on policies to increase rural income and provide access to facilities to increase and encourage domestic food production.

Most of the observation of policy recommendation are made under the assumption that Nicaragua is still a sovereign nation and can implement their decision. However, history has shown external powers, such as the United States, influencing Nicaragua's policies, which continues under SAP. Still there should be some measure of balance between authority delegation of a sovereign nation, where government can work together with the local people for suitable

[163] Adam Smith, *The Wealth of Nations*, ed. Andrew Skinner (London: Penguin Books, 1979 (org. 1776)), Book 1, Chapter 8. Seen in FAO, "Food Insecurity, Poverty and Agriculture: A Concept Paper" (23 September 2002), 6.
[164] World Bank, "Nicaragua: World Bank Reviews Poverty Reduction Strategy," news release no. 2002/091/LAC (Washington, 25 September), http://www.worldbank.org/ .

situation. As mentioned in the preceding section, power was delegated from the 'external elite' to 'local elite' under SA, who are uninterested in diversifying the economy or creating equality between the rich and the poor. Since the rural poor constitute the majority of Nicaragua's impoverished population, any major policy initiative should see farmers and the rural community as central players in reform.

Most studies done in development economics related with sustainability of food production have hinted that the key to achieving sustainable agriculture lays in the productive use of land, likely since the land tenure problem is the most common issue facing rural farmers. However, two additional constraints affect sustainable agricultural production and food security. These are:

- An inadequate farmer support systems. E.g. Issues of policy guidelines, finances, priorities, technical information, motivation, and transportation.
- Bring farmers under a social structure where government works with them. Basically government involvement at the policy level and the farers at the ground level to implement them accordingly with make most of food policy.

A Few Suggestions

Before we make our recommendation the foremost necessity is to maintain a level playing filed for all the stakeholders, enormous collaboration and coordination among them. Maintaining flow of information from the donor, government level to market, to producers is necessary for any future success. Therefore, Plans need to be in place to effectively address the issues raised.

Designated authority board would be mandated to ensure that significant issues are attended to and priorities and targets set.[165]

1. Delegate Power to the Rural Community

Nicaragua needs to build strong relationship between the policy makers and the local communities who actually benefit from the policies. If power were delegated from the core to the periphery, the local population would realize that hold significant stakes in the problem and the solution. People at the local level, through the creation of elected district assemblies, would be empowered to establish and implement policies and to allocate and spend money. NGOs, farmers, and cooperatives would be encouraged to participate in designing, implementing, and benefiting from health, education, food production, environmental protection, and infrastructure development projects.

2. Resolve Land Tenure Problem

The initial impact of increased profitability in farming is to raise the incomes of those who own land. As we know by now, land is the primary capital and income inequality revolves around access to this asset. Therefore, Nicaragua needs to resolve the land tenure problem with urgent attention. If property rights are established, investors will be comfortable providing credit, which will resolve a prime obstacle to the growth of the

[165] Government of Nicaragua, "Plan de Acción de la Polítca Nacional de Seguridad Alimentaria y Nutricional," 2001-2006.

food production. In addition to economic support, small farmers will feel connected to the land, which will initiate food production.

3. Strengthen the Financial Sector

Nicaragua needs strong financial sector, the absence of which is epitomized by the crippling effect of AID and loans on the national financial system. We reviewed how SAP cut back social spending and how the allocation of agrarian credit was relinquished to HIPC initiatives. Inevitably, the HIPC acted as catch 22, where the nation gained additional money to refinance or resolve some loan liabilities, but at the same time, the majority of the population is trapped in a never-ending downward spiral, which the government addresses with additional loan funded initiatives.

Improvement in the financial sector is a precondition for Nicaragua to enter the path to sustainable economic development. A strong financial sector would be able to provide long term loans to food producers otherwise excluded from credit by SAP policies. This would increase domestic food supply, reduce the food import bill, and diversify crop production, while reducing food insecurity.

4. Initiate a Micro-Credit System

Financial services are essential to support small farmers and increase basic grain production. Micro-credit, also known as micro-

finance, is a financial system that provides small amounts of credit to low-income households who were traditionally shut out of the credit market due to lack of collateral. This kind of system has proven results in other developing nations, such as Bangladesh, India, and Sri Lanka, who share similar agro-economic characteristics with Nicaragua. The benefits gained by such a system would outweigh the cost and the risks.

It is suggested that in Nicaragua, micro-credit loans should be made to groups of small farmers rather than individuals.[166] The idea is that the group would decide which members receive credit, thus performing screening function on behalf of the lender. Should that individual default, the group will be held collectively responsible. The peer pressure generated thus serves as a substitute for collateral. Also, close attention should be made that the funds are used for improved technology, rather than as a lubricant for the adoption of inputs.

5. Direct Government Intervention

SAP policies push Nicaragua towards a completely decentralized government. However, as explained earlier, there is no way that the proclaimed benefits of a free market and Adam Smith's invisible hand-'price' will come to fruition with the dramatic income inequality in the

[166] FAO, "Food Insecurity, Poverty and Agriculture: A Concept Paper" (23 September 2002).

nation. Rather, SAP's open ports and exorbitant interest rates only facilitate the dumping of wealthy nations' surplus goods.[167]

To compete with the influx of cheap goods in the economy, the government needs intervene by setting up marketing boards to set prices, purchase, store, process, and sell commodities. Since this policy option would likely create a political dilemma, the government would need to maintain a careful balance to receive donor countries' support.

Increased government influence in the economy runs the risk of being labeled "communist" or "socialist", as history has shown. With proper diplomacy and bilateral coordination, such misunderstandings can be avoided. As the US and Canada histories have shown, communism or socialism need not be related with government intervention in difficult economic times.

6. Improve the Infrastructure

This relates to the strands that hold the agricultural sector together - the blocks that have to be put together for sustained development. These include: research, access to markets and inputs, group activities, extension advice and training, finance, marketing operatives, storage and processing facilities, and communication systems (roads, railroad, telephone, etc).

[167] Carlos Quintanilla, "Nicaragua: Hunger, Malnutrition, and Corruption," (http://www.change-links.org/Nicaragua31.htm).

Government and NGOs would then put these blocks together to create and improve an infrastructure that was largely neglected for decades.

The infrastructure needs to be built from scratch, especially in the vacuum of central geography and the Atlantic coast, which is completely isolated from the population base around Managua. Goods could then be transported efficiently to and from the countryside, increasing market access, preventing monopolies, and encouraging more processing of commodities.

7. Introduce Nutrition Programs

Alderman et al. argue that the solution to undernutrition is dependent on a combination of growth in income and the establishment of nutrition programs.[168] Income growth is essential to solving the problem, but alone cannot solve it completely. Horton also advocates nutrition education, stating that, "There are strong reasons why governments should invest in nutrition, rather than leaving it solely to households and parents. First, nutrition, like education, is a very long-term investment. Capital markets are imperfect and do not finance this type of investment, particularly since there is no collateral. Hence investments by the poor in

[168] Alderman, H., *et al*., 2001, "Reducing Child Malnutrition: How Far Does Income Growth Take Us?", World Bank, Processed.

nutrition are likely to be too low, even if the households know that the returns are high."[169]

8. Increase Off-Farm Employment

We already know that the majority of the rural population is dependent on agriculture for their livelihood and that they are the most vulnerable to shifts in export crop prices. Since it is necessary to create sustainable income for the rural population, employment opportunities need to be diversified. This should not be done by industrializing the nation, rather by building supporting off farm activities around agriculture. Some possibilities include running family handcraft boutique, a food stall, or setting up a simple irrigation pump repair shop – activities that do not require much of either skills or capital. Other agricultural developing nations' seasonal farmers have found success raising their incomes, and it would likely translate to similar gains in Nicaragua. [170]

9. Buffer Stock

Wild swings in food prices caused by the price fluctuation in the international market hurts the poor first. Such surprises could be eliminated through a public agency charged with creating a buffer stock of essential food grains to be released on the market if prices start rising.

[169] Horton, S., 1999, "Opportunities for Investments in Nutrition in Low-Income Asia," *Asian Development Review*, 17(1,2): 246-273.

[170] FAO, "Food Insecurity," 50.

This could be combined with a system of targeted food subsidies and possibly rural public works to maintain purchasing power in times of crisis. A buffer stock combined with a public distribution system to distribute food to the poor at low prices is also another viable option. India is an example of a country with such a buffer stock.[171]

10. Coordinating Donors' Goal

Donor coordination in Nicaragua is relatively weak. Information sharing and cooperation generally do not exist between financial donors, government, and NGOs. This results in multiple NGOs spending foreign loan / aid on same problem, as discussed in the previous section. Instead, policy makers should group donors by strategy and expectation. For example, donors differ about whether food production ought to be subsidized or not, others are willing to provide grants for technology research suitable for Nicaraguan agriculture, while others believe that safety net programs are vital to Nicaragua's food security. The grouping and coordination of donors under the umbrella of government and civil society would facilitate greater communication and response to the food crisis.

11. Community Participation

Finally, there needs to be true participation within the community. Subjective development should be reintroduced on the main agenda to build a phase where development builds from within. It is acknowledged

[171] *Ibid*, 52.

that many important decisions will continue to be made externally (international community), and that there will be a contradiction between external and internal policy choice.[172] Even though it is challenging, increasing communication, empowering communities, and making farmers an integral part of the development process, with the help of national and international source, is the ultimate force in fighting food insecurity.

[172] Sugden and Wilson, "Economic Development," 131.

Conclusion

By and large, Nicaragua has been historically dependent on export crops for economic development. This strategy continuously marginalized food production by ignoring the issue of domestic food production, which is highly important for a developing nation like Nicaragua. At present, fully half the Nicaraguan population lacks food security – one of the most basic conditions of life.

The first section of the paper illustrated the historical neglect of the domestic food production sector, first through export promotion, later through Structural Adjustment supported capitalism. Nicaragua promoted export crop production by facilitating necessary inputs like land, labor, credit, and technical assistance. Basic grain production received no such facility, save short-lived support during the Sandinista era.

After the 1979 civil war, the Sandinista government came to power with a new economic vision that included real food security. The nationalist government, labeled communist in U.S. doctrine, emphasized a comprehensive national program of subsidies for small-scale domestic producers. Shortly after ascending to power, the Sandinista government was challenged by a US trade embargo and sabotaged foreign aid and loans. Faced with such external pressures, the Sandinista government was unable to finish their new agrarian reform, where for the first time, food production and small producers gained a priority in the national strategy.

After the contra revolution, Nicaragua entered a new economic era of structural adjustment, where 'logic of markets' pervaded. The trade liberalization had a deleterious effect on farmers whose production was oriented toward the domestic market. The combination of reduced access to agricultural resources and poor producer prices stimulated by grain imports (and food aid) pushed the small farmers closer and closer toward mere subsistence production.

Nicaragua's experience is common in other agricultural-based developing nations. Policy makers increased export crop production through agrarian reform policies that reallocated fertile food production land for coffee and cotton production. Export crops given extra support in order to improve the nations economy by capitalizing on the global demand for coffee and cotton. To a limited extent, the strategy was successful, demonstrated by stable growth in GDP prior to the 1980s. However, the economic growth was unsustainable, as seen by stagnant poverty rates, malnutrition, high debt level, and recent HIPC status. In the end, small farmers were the victims of the agricultural transformation.

By seeking comparative advantage in primary export crop production, SA made the Nicaraguan economy more volatile the international market. It has been shown that drops coffee prices had broad effects on the national economy. While recent strategies recognize the need to diversify export crop production to avoid shocks from price shifts in the international market, little attention is paid to domestic crop production.

Efforts are underway to address the issue of food security in Nicaragua, but these are ineffective for several reasons. The efforts are not coordinated, operate without follow-ups, they need additional infrastructure like technical assistance, and they need to communicate between projects. Moreover, some projects are inefficient allocations of loan disbursements that return the borrowed money back to the lenders through product purchases. While some projects operate under good intentions, the farmers have yet to realize actual benefits.

Small farmers, disadvantaged by SA, have reduced their production, as well as their consumption. This leaves the nation with a weak workforce burdened largely by a malnourished population. Clearly, Nicaragua needs to find a balance between export crop production and basic grain production, while stimulating livable wages for the population. Otherwise, Nicaragua will continue to suffer from food insecurity.

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