

AGRICULTURAL EXPORTS AND NUTRITIONAL STATUS IN COSTA RICA: IDENTIFYING THE KEY PLAYERS OF CAUSES AND SOLUTIONS TO INADEQUATE DIETARY CONSUMPTION

Stephanie Jolly
Department of Anthropology
University of Kentucky

Introduction

This paper will seek to examine the effects that shifting international exports and resulting trade policies will have on the nutritional status of Costa Ricans and will discuss the appropriateness of various nutritional interventions, such as food and production subsidies, which are being implemented. Few if any studies have been done on contemporary Costa Rican trade so the assessment of nutritional and health impacts of agricultural policy and food subsidies is difficult to conduct, as little local-level data on the common farmer exists, particularly with regards to nutrition status and food availability. There are, however, studies which exist in countries with similar agricultural environments, such as Guatemala, as well as countries which have also recently undergone similar trade reforms, such as Mexico, which can be used as benchmarks to predict the impact similar changes will have on rural Costa Ricans.

This preliminary assessment is useful to understand the historical and political context of Costa Rican agricultural which will set the foundation for a better understanding of the direct, and more importantly, the indirect consequences of food policies on nutritional status. In light of the recently implemented trade liberalization policies stemming from C.A.F.T.A (Central American Free-Trade Agreement) between the United States and Costa Rica, there is a high likelihood that the emphasis on traditional vs. non-traditional agricultural exports will continue to shift towards the latter as has been the case for the past two decades. Thus, it is more important than ever to understand the impact these regulations will have on the dietary health and wellbeing of the citizens, and how assistance programs either create solutions to or exacerbate the potential problems which may be facing the region in the coming years.

History of Costa Rican Nutrition Policy and Statistics

Costa Rica has managed and maintained fairly remarkable health statistics relative to comparable nations of geographic and economic similarity, such as Nicaragua, Honduras, and other developing Latin American countries, and has often been heralded as a ‘developmental success’ by international economists (Thrupp 1995; Buttari 1992; Morgan 1989). Current statistics provided by the United Nations Human Development Report for 2005 place Costa Rica as 47th among 177 countries using the HDI as the standard of ranking, and report a GDP per capita of \$9606, \$2202 greater than the regional average.

By the 1980’s, the Costa Rican government had “embarked on an aggressive national campaign aimed at greatly reducing [...] malnutrition in the country” and the incorporation of nutrition objectives, policies and programs were included in development plans and national programs (Buttari 1992; Austin 1981). The first rural primary health program was geared towards improving access to care and resulting in 218 rural health posts established in “underserved regions” of the country where the commencement of nutritional surveillance campaigns began (Morgan 1985).

Several methodologies can be used in order to acquire data useful to ascertaining nutritional status. Mortality rates, particularly neonatal rates, are used to project changes in nutritional status as it is assumed that improvements in maternal nutrition helps to reduce the rate of infant death (Austin 1981). Anthropometric measurements, such as birth weight, height for age (stunting) and weight for age (wasting) as well as arm circumference are commonly used to assess children and can be used to infer nutritional adequacy (Milman et al. 2005). Other assessments, such as clinical observation and laboratory analysis, can be used to identify specific vitamin or macronutrient deficiencies, such as the presence of goiter and iodine deficiencies, or edema and protein deficiency. While these measurements are generally quite accurate, only a small percentage of malnourished individuals will manifest clinical signs, and the use of laboratory tests requires the presence of an adequately equipped biomedical lab and trained personnel. Thus, most nutritional analyses are conducted using one or a combination of both mortality and anthropometric statistics.

In order to recognize the nutrition impacts of agricultural reform and subsidy interventions, it is first imperative to understand the accepted measurements and classifications of nutritional health—that is, what parameters are used to determine who is considered to be malnourished and what indicators are being used to make this pronouncement. Data from the internal assessments of nutritional health conducted by the Costa Rican Ministry of Health are either inaccessible or require

translation into English, therefore it is difficult to determine which health indicators were used by the countries own government to determine adequate nutritional health. Therefore, nutritional assessment will be analyzed using the mortality and anthropometric statistics made available through the UNDP in conjunction with supplementary data found in the few available anthropological evaluations published.

Data indicates that infant mortality for the years 1998-2003 has remained at 7 per 1000 live births with life expectancies for both males and females gradually increasing from 78.8 years in 2000 to 79.5 years of age in 2002. The data for 2003 indicates continued progress for females with an expected age at birth of 80 years, while the expectations for men have fallen sharply to 75 years. Children under 5 who are stunted for age constitute 6% of the population from 1995-2003 and those who are underweight represent 5% of the population for the same years. Looking at the overall population, those considered undernourished has decreased from 6% in 1990-92 to 4% in 2000-2002. The reported decrease in malnutrition is promising, but still requires more detailed analyses as to what is considered a malnourished state.

Agricultural Policy and Trade Reform

Beginning in the 1980's, policy reforms in response to declining economic capital led to the liberalization of Central American trade, particularly in the realm of agriculture. Historically, the export sector of the industry has been dominated by large agrarian plantations producing export crops such as bananas, coffee and sugarcane, crops which rely heavily on human labor for successful production and which work alongside small rural subsistence farmers producing for local markets and their families (Clark 1995; Thrupp 1995; Whiteford 1991; DeWalt 1983). However, following new trade agreements, such as acceptance into the GATT, Costa Rica shifted the emphasis from traditional tropical fruits and produce to the growth of non-traditional agricultural exports (NTAE), defined as those crops which had not previously been exported into the country, consisting largely of flowers, ornamental plants and foliage and a continuing emphasis on cattle—all crops which have been favorably welcomed into the market via strong export incentives and exchange-rate reforms (Clark 1995; Thrupp 1995; Buttari 1992). Though the integration of the new market strategies appeared gradually in Costa Rica, a factor which may have led to the alleged successes of the integration, other Central American countries established similar reforms under expedited conditions, and by the end of the 80's and into the early 90's a clear shift in growth trajectories had occurred between the traditional exports and the NTAE's. The amount of NTAE's nearly tripled between 1984 and 1989 and their value grew 348 percent (Thrupp 1995). In 1984 the growth rates of traditional vs. non-

traditional export crops was 13.5 and 14.7% respectively, whereby 1990 traditional exports had seen a steady decrease in growth by as much as 4.5% a year, whereas NTAE's continued to grow at a rate of 24.5% annually, constituting 35% of the annual GDP by 1990 (UNDP 2005; Buttari 1992). By 2003, export of goods generated 47% of the GDP (UNDP 2005).

The promotion of non-traditional exports in the form of tax relief, reduced tariffs and incentives has been largely responsible for the growth of the NTAE market. Beginning in 1983, with the passage of free zone policies, a 100% tax exemption was given to all mechanical and merchandising costs for NTAE export production, as well as on all profits after a period of 8 years (Clark 1995). Commodities which had the greatest tariff reductions, such as flowers, beef, ornamental plants and foliage, continued to grow and gradually came to dominate the market, replacing the production of more traditional subsistence based produce. While the growth of NTAE's themselves is not necessarily problematic, smaller NTAE producers and traditional agriculturalists became more vulnerable to economic risks as they, "lacked access to credit, technical services, and market information, compounding their difficulties in planning ahead and responding to changes in market demands" (Thrupp 1995- quote; Immink & Alarcon 1993). The relatively narrow market allows for the capitalization of large foreign owned transnational companies, such as Del Monte and Chiquita, to dominate the marketplace, further removing the farmer from the land. Thus, while proponents of the NTAE's assume that export growth trickles down and causes the economy as a whole to prosper, it can just as easily be argued that the majority of the profits are being siphoned off and sent back to the country of origin for the cooperate conglomerates, not to the workers and citizens of Costa Rica. Though countries at times have shown both high GDP growth performance alongside poverty reduction, there is, "no concrete evidence showing a causal linkage specifically between NTAE growth and broad-based economic growth nationally", meaning that although there is profit being reaped, it is not necessarily trickling down and creating the economic benefits that, in theory, lead to nutritional benefits for the underserved populations (Thrupp 1995; DeWalt 1983).

With the official signing of C.A.F.T.A on Aug. 2, 2005, there may be cause for concern that this trade policy will further profit the cooperate conglomerations, which while increasing GDP and agricultural productivity, decreases access to both traditional farming practices and agriculturally generated income for the individual. The trade agreements eliminate tariffs on consumer and industrial products, liberalizes not only commodities but also the service sectors, and removes taxes and duties on US exports into the region. C.A.F.T.A is not currently in effect and the dates on which its policies will be effective have not been released, however the tariff restrictions and trade reforms are similar to those en-

acted in the past, and so it can be safely assumed that similar outcomes will occur. A preemptive examination of nutritional outcomes which are influenced by income and agricultural production fluctuations and the appropriateness of nutritional interventions used to counter food insecurities in the past are necessary now, as the lessons of history will be beneficial in addressing the current situation.

Implications of Agricultural Reforms and the Theories Behind Them

An analysis conducted in 2005, which used data from the World Bank World Development Report and UNICEF's State of the World's Children to look at the correlation of several factors and the health status of children, found that the rate of economy devoted to agriculture combined with income distribution accounted for 37.9% of the variance in health statistics between countries and were statistically significant factors in explaining the incidence of child stunting (Milman et al. 2005). Shifts in agricultural export policies can impact the dietary intake of a community through a variety of interactions between the local market, land ownership, government intervention, the economy and individual behaviors. Malnutrition can be caused when any of these key players function in such a way that they create an unavailability of food, lead to the creation of insufficient purchasing power, or lead to an unequal distribution or inappropriate use of food at the household level (Milman et al. 2005). Most nutritional studies which aim to understand the cause of malnutrition indicate positive associations of nutrition status and economic well-being, occasionally viewing nutritional health as a by-product of economic growth (Praveen 1994; Whiteford 1991; Franklin et al. 1987; DeWalt 1983; Lane 1980). This can be problematic because it fails to include environmental or social considerations, such as land ownership and wage labor, also affected by agricultural export, and which too play a vital role in the negotiation of consumption patterns and food security.

The most recognized pathway of dietary change is from income transfers between consumers and producers, which can have either positive or negative consequences depending on the specific scenario being discussed. Revenue from cash-cropping activities directly effects income variability of a household, while cash-cropping can indirectly affect income transfer through the creation of variable market prices via an influx of cash into the economy, a secondary effect of the export transaction. The traditional demand theory, the driving theory behind the correlation between increased income (whether directly or indirectly through lower market prices), assumes that households will maximize their budget as a function of utility in purchasing market goods (Franklin et al. 1987). That is, the extra income generated will allow the household to access to quantities of food previously unavailable due to economic restraints, leading to an increase in the

purchasing of staple food items which will supplement the current diet and increase caloric intake. This model is easily scrutinized as being oversimplified as it fails to account for the variability of food choice and purchasing behavior. Directly linking increased income via economic growth and gains in nutrition only work if the increased income is being used to purchase either more calories foods dense in nutrients which have previously been deficient in the diet (Whiteford 1991; DeWalt 1983; Pinstруп-Andersen 1976).

A useful analysis conducted in rural agricultural communities in Mexico during the early – mid 1980's help shed light on the food choice behaviors before and after income modifications (DeWalt 1983). As both rural Mexicans and rural Costa Rican farmers have diets which rely heavily on maize and beans, have similar access to market goods and are found in countries with similar agricultural policies, it will be assumed that the findings may also be applied to Costa Rican communities. The research indicated that extra income availability only yielded an increase in foods already being purchased—namely meat, eggs and dairy components—and that when taken into account with the decrease in purchases of vegetarian staples such as maize, beans and wild greens which accompanied the income transfers, any nutritional advantages resulting from the income transfers were less clearly defined than projected (DeWalt 1983). Similar findings have been found in Costa Rica following the introduction of cash-cropping into the rural village of Veintisiete de Abril, where an increase in the purchase of white bread, flours and imported processed snack food-stuffs accompanied a decrease in the consumption of locally grown staples (Whiteford 1991). This same study monitored the growth status of pre-school children following a shift to beef exportation and, along with an increased dependence on market goods, did not find the improvement of nutritional status that were projected despite the increased economic activity in the region (Whiteford 1991). What follows is the assertion that households are using their increased income towards “elite” food items previously unattainable due to economic conditions. This is facilitated by the influx of new and inordinately expensive imports such as white bread, commercially manufactured snacks and infant formula which can generally decrease the quality of the diet as they tend to be less nutritious than the previously consumed staple foods, but become increasingly available as communities shift to export-oriented agriculture, relying on market imports for the composition of their diet.

Income mediated through revenue is not the only source of change resulting from the new agricultural policies. Less investigated effects of reform are changes in land use and ownership as well as the social changes associated with wage labor which also introduce important factors to be considered. Michael B. Whiteford, professor of anthropology at Iowa State and author of numerous articles on the nutritional status and wellbeing of Latin American communities, writes

that “the single most important explanation for the changes [...] in nutritional well-being of children in Veintisiete de Abril is the dramatic increase in lands converted to pasture” (Whiteford 1991). Changes in land usage can result from either transfer of ownership or variation in the type of crop being introduced to the area. Introduction of export-crops such as rice and beef require an alteration to the land which effects subsistence farmers in two ways—the first being that such commodities require fewer working days per year, decreasing available jobs and thus decreasing wage income opportunities, and second, they require a modification of the land that limits usage to only one purpose (flooding the land in the case of rice, and converting the land to pasture in the case of beef, neither of which can successfully be concurrently used for subsistence agriculture). A decrease in labor demands precedes a migration out of the rural agricultural regions often to urban areas or to areas with greater demand for wage laborers. This exodus of the workforce, commonly men, can also impact the nutritional status of the remaining women and children, as single-parent households are likely to have less adequate consumption of foodstuffs as those of a two-parent household (Whiteford 1991; Wolfe and Behrman 1983).

Nutrition Interventions – A Question of Subsidization

Based on previous literature, it is now not a question of whether agricultural export policies will impact nutrition, but rather a discussion on the multitude of pathways through which such impacts can occur. Clearly the changes associated with agricultural export policies have and will continue to effect individual income either directly or indirectly and will result in changes to nutritional health. Furthermore, the secondary effects of export production also must be considered when evaluating the processes which negotiate food availability and resource allocation. Instead, what must be addressed is what can be done to limit and counter the negative effects, without hindering the positive ones. There are at present, four major categories of aid which exist: general food subsidies, general agricultural subsidies, targeted food subsidies and targeted agricultural subsidies. Targeted strategies utilize “in-kind” subsidization of commodities (agricultural or nutritive) directly into communities, while general subsidies focus on creating income-generating transfers, either through government intervention in market prices, or by controlling and monitoring agricultural production (Praveen 1994, Rodgers et al. 1981). For the implementation of any subsidization program to be successful, its aims and objectives must be consistent with the needs of the targeted populations, though multiple studies have been published which conclude that dietary gains are seldom the explicit objective the government implemented subsidy programs, and those though they can and do affect the consumption patterns of citizens, the primary objectives are often to stabilize the prices of excess commodities into the marketplace creating even price competition throughout the

seasons (Clay 2003; Thrupp 1995; Praveen 1994; Buttari 1992; Rodgers et al. 1981).

In order for food aid to be successful, it first must reach those who are under- or malnourished before it can contribute to improving the nutritional status of an individual. Food subsidies are expected, and have been shown, to directly affect the welfare of recipients in the short term (Praveen 1994; Lane 1980; Pinsturp-Anderson 1976). However, there are several problems associated with the use of foreign donated surpluses in lieu of the use of locally produced items, which can decrease the economic wellbeing of both producers and consumers alike. Especially in markets which are price elastic, meaning that government intervention is not regulating or fixing market prices and there is open competition between all producers, as is found in free-trade or liberalized markets, a surplus of foreign donor commodities can replace commodities formerly provided by the local producers (Lane 1980). While lower prices spurred on by competition of a saturated market can assist the poor in the short term, the intervention is not sustainable and can have negative consequences on the producers of the competing commodities; in the Guatemalan highlands it was found that the “short term income-calorie intake relationship is weak”, particularly among small farms which are most vulnerable to market fluctuations (Immink & Alarcon 1993). Furthermore, the nutritional validity of certain commodities can be called into question. Ideally, a program in Costa Rica would subsidize staple foods already incorporated into the diets of the nutritionally needy, not foods that are consumed by the middle and upper classes. When “elite” products are subsidized, such as sugar and wheat, lower prices either do not generate income among the target population or the commodity runs the risk of shifting consumer preference, making it less likely that additional income will be further put towards the purchase of less affluent staples such as cassava, maize or beans, but rather caloric intake may be diminished by the purchase of expensive imports (Austin 1981).

Consumption patterns in a rural agricultural community in Colombia indicate that while a total of 74% of calorie deficient individuals received caloric increased via the subsidization of maize, beans or cassava, only 12% of deficient individuals received any nutritional benefit from the subsidization of beef, eggs and milk (Pinsturp-Anderson 1976). It can be expected that similar consumption patterns will be found in Costa Rica, and therefore, the subsidization of meats, dairy products and certain other expensive commodities will likely not lead to any nutritional gains as they cannot be accessed by the malnourished subset of the population. Subsidies of this nature can be considered ‘nutritional wastes’ as increases in nutrient availability only make a positive impact if it can be accessed by a consumer who is deficient in the particular nutrients the commodity contains. One author suggests that programs which aim to subsidize scarce products,

such as oils and sugars, should “generally be viewed as political programs” rather than as nutritional interventions” and they might indeed benefit large-scale producers but fail to provide increased nutritional support for those in need (Austin 1981).

Agricultural production subsidies can improve the nutritional status of both consumers and producers through income transfers mediated through the elasticity of supply. Subsidization of either agricultural machinery or seed can lead to an increase in production (generating greater revenue for the producer) as well as lower prices in the market place, which benefit the consumer in a price elastic, or free, market. Profits of production subsidies are often internalized by rural communities and thus are more appropriate for improving the nutritional status of the rural poor, rather than the health of those in urban areas (Praveen 1994).

Not only is an appropriate structure of an intervention strategy necessary in order to be successful, but the specific commodities which are being subsidized also are key components to nutritional benefits which might be gleaned from the program. While some regions undergoing rapid shifts from subsistence agriculture to export-oriented cash cropping might require short-term assistance to navigate the transition, displaced farmers and occupants of pasteurized land utilizing wage-labor may require interventions which are more sustainable. Thus, it is increasingly evident that due to the projected shifts in export policy facing Costa Rica, local context specific studies be undertaken which assess not only the specific nutritional needs of a particular population, but also the intervention strategy which will mediate the communities needs.

Discussion on the Future of Costa Rican Nutrition

As the agricultural market continues to globalize, it is important to address the specific nutritional impacts that these policies have at all levels of the population: the consumer, the producer, the laborer, and most importantly the small-scale rural farmers who are most vulnerable to market fluctuations. More broadly, the implications of dietary assessment do not stop at nutritional status, but are also important in the overall health status of a population. It can often be difficult to interpret nutritional adequacy based on statistics of infant mortality alone, as neonatal deaths can arise from a variety of non-nutritional factors such as endemic diseases, or be related to sewage containment and the availability of clean water (Schiff & Valdes 1999). Little local-level data is available on the dietary consumption patterns and nutritional sufficiency of Costa Rican farmers, nor have many studies been conducted which address the impacts, either successes or failures, of nutritional interventions after agricultural policy reforms, and the studies which have been conducted fail to account for behavioral purchasing changes

which arise from the introduction or subsidization of nutrient poor, inexpensive “elite” foods and imports.

Considering the dramatic liberalization of export markets which are soon to arrive in Costa Rica and other Central American countries with the creation of C.A.F.T.A it is more important than ever to fully understand the direct and indirect effects these policies will have on the nutrition and well-being of each citizen, accounting for the specific environments and influences present in individual communities. The prevailing theory that increasing economic productivity translates into increased nutrition status via the purchase of nutrient-dense staples is flawed, as increases in income do not always correlate with nutritional gains. Furthermore, generalized subsidy programs, or those that erringly target the wrong commodity, do not affect nutrient increases in the target populations which are most deficient. Only with the availability of research which adequately assesses the variety of food-intake pathways and the influence of consumer preference can successful intervention programs ever be obtained.

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