

How Would the Guatemalan Rural Economy Respond to CAFTA-DR?: A Survey

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Introduction

The 36-year-long civil war in Guatemala was predominantly waged in rural areas. In post-conflict Guatemala, the battlefield for socio-economic recovery is also in rural areas since much poverty remains in the rural sector. Thus, any researchers or practitioners of post-conflict development need to know the basic facts concerning the rural economy of Guatemala. This need is particularly evident given that the Central American-Dominican Republic Free Trade Agreement (CAFTA-DR) is heading for implementation.¹⁾ As CAFTA-DR involves trade liberalization in the agricultural sector, it will influence the rural economy of Guatemala. Therefore, we must pay heed to the possible impact of CAFTA-DR on the Guatemalan rural economy.²⁾

This article attempts to answer the following questions. What is the socio-economic structure of the rural economy in Guatemala? What kind of agricultural products do farmers produce? Will poor farmers in Guatemala decrease their production of traditional crops such as white corn (maize) because of cheaper imports due to CAFTA-DR? Will they benefit from CAFTA-DR? Will they migrate *en masse* to the United States? What are the lessons for future research? In order to tackle these questions, we have surveyed a number of articles prepared by experts.

In this paper we will use two kinds of academic resources. First, we will use articles which survey the impact of the North American Free Trade Agreement (NAFTA) on Mexico. NAFTA is the first free trade agreement between two developed countries (the United States and Canada) and a developing country (Mexico). The southern states of Mexico such as Chiapas and Oaxaca are directly comparable to the Guatemalan rural sector. The impact of NAFTA on Mexico could be considered, therefore, as a model case for CAFTA-DR's future impact on the rural economy of Guatemala.³⁾ Second, we will make use of a few articles that directly try to

1) In this paper, the abbreviation CAFTA-DR will be used to refer to the Central American-Dominican Republic Free Trade Agreement, since the White House of the United States uses this abbreviation. It is noted, however, that DR-CAFTA is the more common abbreviation in the media.

2) A variety of issues concerning CAFTA-DR are studied in both Rodlauer and Schipke (2005) and World Bank (2005).

3) Todd, Winters, and Arias (2004) identify three approaches in assessing the impact of a free trade agreement on one country: (1) the Historical Analogies approach, (2) the Macroeconometric Model approach and (3) the Computable General Equilibrium approach.

assess the impact of CAFTA-DR, including its impact on rural economies in Central America. Our survey is not exhaustive but selective in the sense that we would like to focus on certain aspects of CAFTA-DR.

The rest of the paper proceeds as follows. Section II summarizes the socio-economic structure of the rural economy in Guatemala. Section III surveys the experience of NAFTA. Section IV presents the possible impact of CAFTA-DR on the rural economy. Section V surveys complementary policy issues. Section VI concludes and proposes a viewpoint for future action-oriented research.

1. The Socio-Economic Structure of the Rural Economy in Guatemala

The best paper on this subject, as far as we know, is Taylor et al. (2006), whose authors include J. Edward Taylor and Antonio Yúnez Naude. J Edward Taylor is a professor in Agricultural and Resource Economics at the University of California, Davis. He is well-known for general equilibrium modeling for questions related to agriculture. His long-time collaborator, Antonio Yúnez Naude, is a professor in Economics at the Colegio de México. Both of them participated in this paper, which assesses the possible effects of CAFTA-DR on the Guatemalan rural economy.

Taylor et al. (2006) classify households in the rural economy into six categories. Table 1 presents the definitions and estimated household numbers in rural areas. The criteria are whether they have land or not, their level of education, and whether they are commercialized agricultural producers or not. Rural households are divided into six groups. The first group is landless households with low education. The second group is landless households with high education. The third group is small non-commercial producers of basic grains. The fourth group is small commercial producers. The fifth group is medium commercial producers. The sixth group is large commercial producers. The household numbers clearly show that in rural Guatemala small non-commercial producers of basic grains represent the largest group.

Table 1. Typology of Rural Households

Group	Numbers of household survey sample	Estimated Numbers of Households in Rural Area
1) Landless households with low education	503	160,357 (12.9%)
2) Landless households with high education	107	30,031 (2.4%)
3) Small non-commercial producers of basic grains	1,931	659,922 (53.3%)
4) Small commercial producers	994	295,854 (23.9%)
5) Medium commercial producers	204	66,752 (5.4%)
6) Large commercial producers	113	26,129 (2.1%)
Total	3,852	1,239,045 (100.0%)

Source: Taylor et al. (2006) Cuadro 11

Table 2 shows socio-demographic characteristics. People in the third and fourth groups earn annually 441 and 445 US dollars, respectively. This means that they live on fewer than two dollars a day. In these groups, therefore, the level of poverty is remarkable. It is suspected that these groups also mainly consist of indigenous people.

Table 2. Socio-demographic Profile of Rural Households

Variable	Landless Households		Land Holding Households			
			Non-commercial	Commercial		
	Low Education	High Education	Producers of Basic Grains	Small	Medium	Large
Household Head						
Average Schooling Year	2.47	11.44	1.97	1.92	2.17	2.42
Age	41.91	35.34	44.67	44.97	43.83	45.16
Household						
Household Size	4.68	4.36	5.83	5.77	6.11	6.21
Average Family Income (Quetzales)	20,466	45,306	19,734	19,322	21,978	31,613
Income per person (USD)	575	1,367	445	441	473	727

Source: Taylor et al. (2004) Cuadro 12

Table 3 shows sources of income by group. A notable fact is that not only landless households but also agricultural households receive their income via wages. For non-commercial producers and small commercial producers, 80% of their income comes from wages. This existence of the market economy in the labor market is a very important factor in the Guatemalan rural economy. As will be discussed later, an exogenous change in labor demand changes the labor market and the behavior of rural households. Another point is that an increase in education level would improve productivity in non-farm activities.⁴⁾

Table 4 shows agricultural production by activity. The economy of rural households is not one of specialization. There are a few tendencies to be noted. First, the larger the producers are, the smaller their share of basic grains is. Second, small commercial producers tend to have a small share in livestock but a large share in fruits and vegetables. Third, large commercial producers have a large share in the category of bananas, sugar and coffee. Table 5 demonstrates the patterns of expenditure by group. Each group has its own expenditure pattern. The smaller the households are, the larger their share of basic grains in total tends to be.

4) See Taylor and Yúnez-Naude (1999) on this effect in the case of rural Mexico.

The Guatemalan rural economy is, therefore, heterogeneous, unequal, penetrated by the labor market, and not specialized in terms of agricultural production. These characteristics will influence any possible effects of CAFTA, an issue which will be dealt with in the following section.

Table 3. Source of Income by Activities (percentage)

	Landless Households		Land Holding Households			
			Non-commercial Producers of Basic Grains	Commercial		
	Low Education	High Education			Small	Medium
Production by Family						
Basic Grains	0	0	4.8	5.0	9.8	7.9
Livestock	0	0	6.4	1.4	22.5	24.0
Traditional (Banana, Sugar, Coffee, etc.)	0	0	2.2	1.9	7.1	13.2
Non traditional (Fruits and Vegetables)	0	0	1.4	5.8	6.2	0
Non-agricultural	0	0	0	0.5	0	48.6
Wage	95.3	98.9	80.2	81.2	50.1	48.6
Remittances						
National	1.6	0.3	1.3	1.3	1.5	0.7
International	3.0	0.7	3.7	2.7	2.4	0.8
Other	0.1	0	0	0.3	0.3	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Taylor et al. (2004) Cuadro 13

Table 4. Share of Value Added by Activities (percentage)

	Landless Households		Land Holding Households			
	Low Education	High Education	Non-commercial Producers of Basic Grains	Commercial		
				Small	Medium	Large
Basic Grains	NA	NA	32.2	34.2	21.5	15.8
Livestock	NA	NA	43.7	9.7	49.3	47.9
Traditional (Banana, Sugar, Coffee, etc.)	NA	NA	14.9	13.0	15.6	26.3
Non traditional (Fruits and Vegetables)	NA	NA	9.2	39.8	13.6	10.0
Non-agricultural	NA	NA	0	3.3	0	0
Total	NA	NA	100.0	100.0	100.0	100.0

Source: Taylor et al. (2004) Cuadro 14

Table 5. Expenditure Pattern of Rural Households (percentage)

	Landless Households		Land Holding Households			
			Non-commercial Producers of Basic Grains	Commercial		
	Low Education	High Education			Small	Medium
Basic Grains						
Self-Consumption	0	0	4.8	4.4	6.1	3.3
Purchase	8.2	0.7	5.5	4.1	2.8	1.1
Other Agricultural	24.7	6.5	25.9	16.6	31.5	15.1
Business	51.5	24.9	37.8	33.9	29.2	25.7
Investment						
Animals	0	0	3.8	16.6	9.5	19.3
Education	3.7	4.1	2.7	1.8	1.6	1.1
Health	0.4	0.3	0.1	0.4	0.3	0.1
Other	11.5	63.1	17.4	20.6	18.8	33.9
Tax		0.4	0.1	0	0.1	0.4
Other			2.0	1.7	0	0
Total Expenditure	100.0	100.0	100.0	100.0	100.0	100.0

Source: Taylor et al. (2004) Cuadro 16

2. Lessons learned from the case of NAFTA and Mexico

Mexico's experience with NAFTA is valuable in terms of the lessons which can be applied to projections for CAFTA-DR's impact on the Guatemalan rural economy, since NAFTA and Mexico are quite comparable to CAFTA-DR and Central America, respectively. In particular, the Mexican southern states could offer important lessons for the rural economy of Guatemala. The overall assessment is mixed. On the one hand, Polaski (2003) argues that NAFTA harmed Mexican agriculture, citing the 1.3 million job losses in the sector since 1994. On the other hand, Hanson (2003) points out that wages in the agricultural sector increased between 1990 and 2000, suggesting that not all of the changes to Mexican agriculture have been negative.

A valuable lesson to be learned from NAFTA is that the Mexican agricultural sector is more complex than experts had assumed in assessing NAFTA's impact. We can verify this fact by comparing the actual performance and the estimated result prior to implementation. Todd, Winters, and Arias (2004) compared the actual output of Mexican agricultural products with the output predictions made by Burfisher, Robinson, and Thierfelder (1991).⁵⁾ Table 6 shows the contrast between these figures. While lower production was predicted due to lower international prices of agricultural products, in fact current production shows an increase from 1993.

5) A more technical review can be found in Kehoe (2003).

Table 6. Comparison of output prediction in Burfisher, Robinson and Thierfelder (1991) with actual output of Mexican agricultural products

Mexico (Production Mt)	BASE LEVEL	PREDICTED	CURRENT
	1993	(1)	2003
Cereals, Total	25,200,006	23,335,206	30,565,504
Fruit and Vegetables	16,995,941	18,389,608	24,319,058
Oilcrops Primary	312,828	269,345	296,482

Note: (1) This prediction is based on a scenario that all tariffs and quotas are removed and deficiency payments for corn are provided in Mexico.

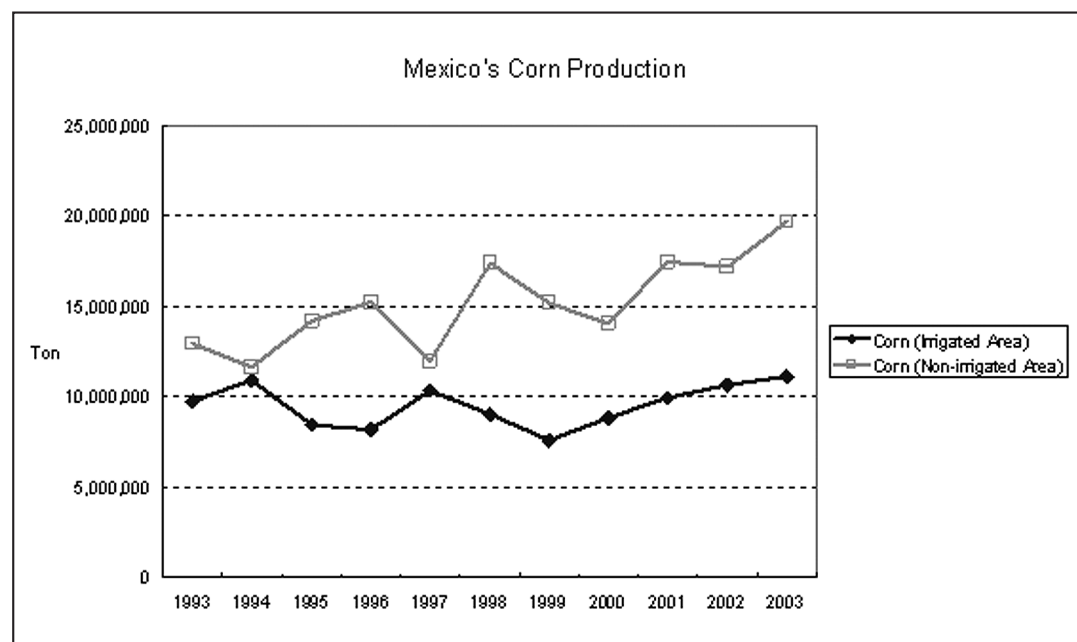
Source: Todd, Winters, and Arias (2004) Table III-2.

Certainly, the prices of agricultural products decreased due to NAFTA, but it did not always cause decreased production. Representative of this overall trend is corn production in Mexico. Cheaper corn imports from the US increased after the introduction of NAFTA,⁶⁾ but it influenced corn production in irrigated areas and non-irrigated areas differently. Commercial producers in general use large irrigated lots, while non-commercial (subsistence) producers use smaller non-irrigated lots. Chart 1 reveals a remarkable contrast pointed out by Yunez-Naude (2002) and Todd, Winters, and Arias (2004). While on the one hand corn production in irrigated areas stagnated, on the other hand corn production in non-irrigated areas increased. Why did lower international corn prices not reduce corn production in supposedly inefficient small lots in non-irrigated areas?

The same contrast can also be observed in the southern Mexican states of Chiapas, Oaxaca, and Puebla (Chart 2). This fact is important because these three states are more similar to Guatemala than to Mexico's northern states. It was expected and/or feared that inefficient farmers in impoverished areas would stop agricultural production. Pro-liberalization economists thought that stopping inefficient production would improve resource allocation, while opponents of liberalization argued that those small farmers who had left agricultural production would go into urban areas forming larger slum areas. But the small and inefficient farmers did not give up agricultural production. What happened instead?

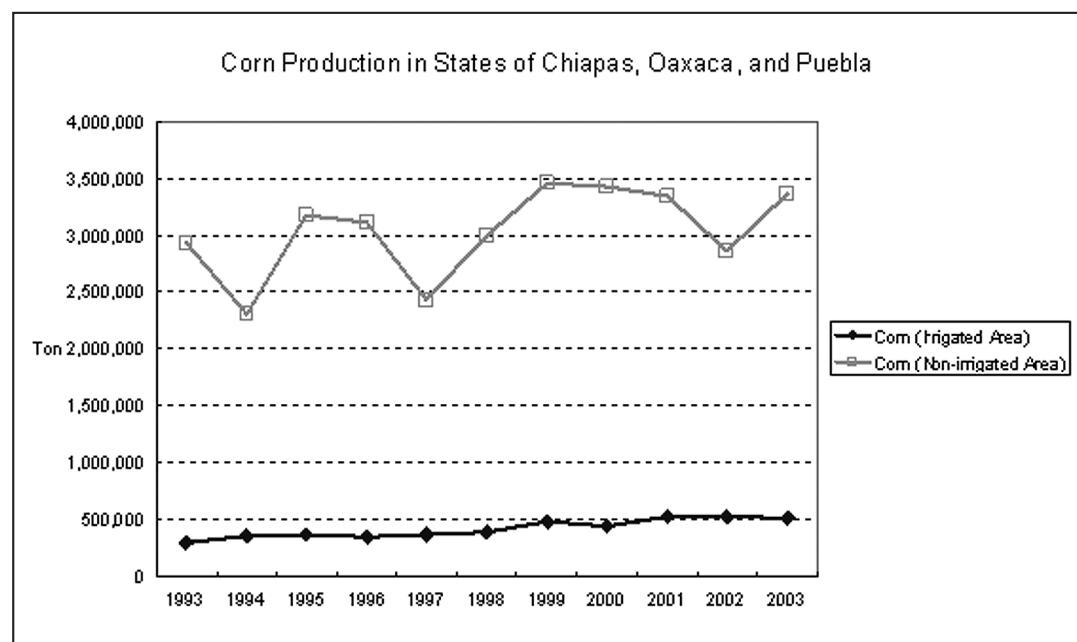
6) The relative price of corn products (e.g. tortilla) against CPI increased after the introduction of NAFTA. This does not mean that the corn price increased for producers. The corn prices at the border and faced by producers and the corn prices faced by consumers should be examined separately. In the case of Mexican corn, the producer price and the consumer price were very different because of subsidies on both sides. CONASUPO, a federal agency for agricultural support, used to buy basic products such as corn at a guaranteed price and sell it to tortilla producers cheaply. Along with NAFTA, there were substantial changes in Mexico's agricultural policy. The price subsidy function was substantially diminished. See Yunez-Naude (2002) for a more detailed account. For poor households, the Mexican government withdrew price support for basic grains and instead used direct income support such as PROCAMPO or PROGRESA (OPORUTUNIDADES).

Chart 1. Mexico's Corn Production



Source: SAGARPA, SIACON.

Chart 2. Corn Production in Mexico's Southern States



Source: SAGARPA, SIACON.

Polaski (2003) noted this contrast and pointed out three possible contributing factors. First, she argued that lower international prices did not reach the local market, where subsistence farmers lived. Second, she hypothesized that a lack of cash would influence the behavior of small subsistence farmers. Third, she noted that locals prefer locally produced corn to the imported variety. However, this was little more than unelaborated speculation.⁷⁾

Dyer, Boucher, and Taylor (2006) developed the argument on isolated markets and subsistence production first put forth by de Janvry, Fafchamps, and Sadoulet (1991). They argued that a decrease in commercial agricultural production due to market liberalization would cause an increase in non-commercial agricultural production via connections with the labor market. There are two underlying assumptions in this argument. First, it suggests that the market for staple products is segregated into local areas, due to difficulties of transportation and the distribution network. Second, non-farm activity is an important feature of life in a rural economy, and the labor market connects the national economy with local rural households. Lower international prices caused by market liberalization certainly increased imports and decreased domestic commercial production. The decrease in commercial production decreased labor demand in the sector. Faced with a lesser labor demand, subsistence farmers who used to supply labor for commercial agriculture could actually increase their subsistence production. This explanation is plausible and explains the behavior in both irrigated areas (commercial sector) and non-irrigated areas (subsistence sector). The same mechanism would work in the Guatemalan rural economy.

3. Prediction of CAFTA-DR's Impact on the Guatemalan Rural Economy

CAFTA-DR is the free trade agreement between the United States, and Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, and Nicaragua. Ideally, free trade agreements include the abolition of tariffs, no quantitative restrictions on trade, and equal national treatment among the countries. However, each free trade agreement has its own specific characteristics. CAFTA-DR is as comprehensive as NAFTA, but its speed of implementation is slower, and CAFTA-DR has more exceptions. In the case of Guatemala, white corn is excluded from the liberalization list. The substitution effect from yellow corn liberalization, however, should lower the price of white corn.⁸⁾

Morley (2006) carefully examines CAFTA-DR and its impact, and concludes that “in the short run at least, the impact of its trade liberalization components is likely to be small.” He

7) PROCAMPO, the government support program for agriculture, could be another factor. See Todd, Winters, and Arias (2004).

8) On closer examination, the impact would be slightly more complicated. In the case of yellow corn the impact would be smaller because Guatemalan poultry farms have already been importing yellow corn with low tariffs due to a special provision for promotion of the poultry industry. The special provision would turn into a quota in the framework of CAFTA-DR. CAFTA-DR also adopted the quota system for white corn. Since the theory of International Trade teaches us that quota increase and tariff reduction are equivalent in the absence of monopoly power, CAFTA-DR should have a small direct impact on white corn farmers. See Fuentes et al. (2005) for more detail.

mentions two reasons for this. First, for Central American countries tariffs are already quite low, especially for non-agricultural products. Second, for sensitive products in agriculture, the reductions in tariffs were intentionally designed to be gradual, or in several cases, such as the case of white corn in Guatemala, non-existent.⁹⁾

How would corn production in Guatemala change? Taylor et al. (2006) used the argument of Dyer, Boucher, and Taylor (2006) in predicting the impact of CAFTA-DR on the Guatemalan rural economy. They constructed a model of the Guatemalan rural economy based on a social accounting matrix. A notable characteristic of Guatemalan agriculture is the existence of non-commercial farmers.¹⁰⁾ The important point of the matrix is that non-commercial farmers and commercial farms are connected through the labor market. Non-commercial households supply labor, and commercial households provide the demand for this labor. Dyer, Boucher, and Taylor (2006) considered three cases. In the case of high and intermediate scenarios, where market liberalization is complete, commercial production would decrease, as would salaries in the rural economy. Faced with the lower salary, non-commercial households would withdraw labor previously supplied to commercial agriculture. Non-commercial households, then, would allocate this “surplus” labor towards their own non-commercial agricultural production. Thus, non-commercial agricultural production would increase.¹¹⁾

A noteworthy finding from Taylor et al. (2006) is that non-commercial farmers would gain in all three scenarios considered, primarily because they are net consumers of agricultural products. Even though they produce for their own consumption, they also buy agricultural products for consumption. Thus, lower prices of agricultural products would favor non-commercial farmers on the whole. Taylor et al. (2006) conclude that CAFTA-DR will not reduce the production of basic crops such as corn or beans in the subsistence households. This does not mean the predicted increase in subsistence production will lead to an increase in income in subsistence households. CAFTA-DR will reduce commercial production and salaries in the rural sector, which will decrease income in subsistence households.

In sum, whether non-commercial farmers will gain because of CAFTA-DR depends on whether the benefits due to lower prices of various goods for consumption exceed the decrease in income due to lower salaries. In order to take full advantage of the lower prices, the infrastructure must be improved and the market structure has to be more competitive. Thus, there is a need for complementary policies, which we will discuss later.

Surveying the migration between Mexico and the United States, Hanson (2006) concludes that international migration is affected by the difference in the wages between the sending and receiving countries. Thus, the change in economic conditions caused by CAFTA-DR is likely to change the amount of emigration from Guatemala and remittances from abroad. The

9) See note 8 and Fuentes et al. (2005).

10) Fuentes et al. (2006) estimate that non-commercial households produce approximately 67% of maize in Guatemala.

11) This mechanism clearly opposes Polaski (2003). She wrote: “If (immediate access for U.S. corn, beans, rice, beef, and chicken were) adopted, this proposal would lead to an almost immediate displacement in Central American markets of staples produced by local subsistence farmers.” (p.4)

International Organization for Migration (IMO) estimates that the number of Guatemalans living abroad will reach more than 1.2 million people in 2005, which is about 10 % of the total Guatemalan population.¹²⁾ More than 95% of Guatemalans overseas are estimated to reside in the United States. Remittances from abroad are estimated to amount to 2.9 billion US dollars in 2005, which is also about 10% of Guatemala's GDP.¹³⁾ Given the significance of migration and remittances, it would be important to consider whether international emigration from rural areas will increase due to CAFTA-DR.

Taylor et al. (2006) do not say much concerning international migration, on the assumption that it is exogenous because international migration is affected by a family's access to a migratory network more than any changes in economic policy.¹⁴⁾ The predicted net gain of non-commercial farmers, however, might imply that international migration would not increase.

The migration outcome will partly depend on whether rural households will benefit from and take advantage of CAFTA-DR. If they can, there will be no rationale to go abroad for work. It will also depend on whether migratory access will be easier and whether the economic return from migration will increase. Since the authorities in the United States are very sensitive to migration issues, migratory access across the border will not become any easier. However, CAFTA-DR could directly increase the economic return from migration. In the case of NAFTA, the entry of various US financial institutions into the money transfer business to Mexico lowered the transaction costs of money transfers, which increased the economic return from migration in Mexico. If the same happens in the case of CAFTA-DR, the economic return from migration would also increase. Lower transaction costs would also affect money transfers from Guatemalans who have already established themselves in the United States. Thus, *ceteris paribus*, remittances from abroad might increase as a result of CAFTA-DR.¹⁵⁾

4. Complementary Policy Issues

In the case of NAFTA, three complementary policies can be highlighted. The first is PROCAMPO, involving direct money transfer to the agricultural sector. Todd, Winters, and Arias (2004) recommend PROCAMPO-type support for Central American countries. The second is Plan Puebla-Panama (PPP), a region-wide infrastructure project. Dávila et al. (2004) argue that southern Mexican states cannot enjoy the merits of NAFTA because of poor infrastructural conditions in the transportation network and a lack of public investment.¹⁶⁾ The PPP has the potential to establish the basis for further economic activities in the NAFTA and

12) Interview with IMO's Guatemala Office.

13) See the Inter-American Development Bank's Multilateral Investment Fund's homepage (<http://www.iadb.org/mif/remittances/index.cfm>).

14) Taylor et al. (2006) calculate that the simulated effect of international migration on the rural economy is bigger than the predicted impact of CAFTA-DR on the rural economy.

15) Theoretically, in microeconomic term, the income effect is possible, but realistically this is unlikely.

16) It is said that a version of this proposal of Dávila et al (2004) was supported by the Fox administration and was converted into Plan Puebla-Panama.

CAFTA-DR regions.¹⁷⁾ The final complementary policy, PROGRESA (currently known as OPORTUNIDADES), a direct money transfer program, was instituted in Mexico in 1997. This type of program is an effective and feasible policy instrument for battling poverty, particularly in the fields of health and education.¹⁸⁾

Hanson (2003) finds that foreign direct investment (FDI) is positively related to rising wages and that FDI appears to prefer higher skilled to low skilled labor. Thus, educational improvement is a necessary condition to take advantage of the merits of NAFTA. The FDI level in Guatemala has been very low compared to the rest of Latin America.¹⁹⁾ FDI promotion requires not only upgrading in education and infrastructure but also institutional development. Todd, Winters, and Arias (2004) suggest that investment in the factor markets in rural sector such as infrastructure and education is necessary to take advantage of CAFTA-DR. As was briefly discussed in section II, educational promotion would directly influence non-farm productivity in the rural economy. Any plans for infrastructural support should consider the following points. Certainly, the main benefit of a free trade agreement is market access, which requires good transportation facilities within the free trade area. However, Todd, Winters and Arias (2004) point out that there could be a flipside effect of lower transaction costs through better infrastructure. Local markets of staple products previously shielded from the outside due to a lack of quality transportation would be exposed more to market forces. Thus, complementary policies such as income support policies could be considered. However, we are aware that the Guatemalan fiscal situation is so difficult that there is very little room for complementary policies.²⁰⁾

An implication from the preceding sections is that non-commercial farmers would spend more time in their own villages. This means that organizational efforts at village level and institutional policy in the rural sector could be crucial for higher productivity and greater livelihood in this sector.²¹⁾ An appropriate method to observe and assist organizational activities in the rural sector is the action research method combined with rigorous household surveys.

Let us ask our last question in this paper: what implications does this survey have for future action-oriented research on post-conflict development in the Guatemalan rural economy? Let us suppose a village currently shielded from trade and commerce. The residents cultivate basic crops for their own consumption and temporarily migrate outside for cash income. With the introduction of CAFTA-DR, it is conceivable that their time in residence in the village might increase, along with non-commercial agricultural production. Action-oriented researchers

17) See Inter-American Development Bank's web site for more information on PPP: <http://www.iadb.org/ppp/index.asp>.

18) Quite a few evaluation reports on PROGRESA can be found on the International Food Policy Research Institute (IFPRI)'s web site: <http://www.ifpri.org/>.

19) According to ECLAC/CEPAL, FDI in Guatemala (2005) is estimated to be 168 million US dollars. The average FDI over the span 2001-2005 was 220 million US dollars, which means that FDI per capita was 16 US dollars. The FDI per capita of Mexico, Costa Rica, El Salvador, Honduras, and Nicaragua are 177, 135, 54, 30 and 35 US dollars, respectively. The only country in Latin America which has a smaller FDI per capita than Guatemala is Paraguay (9 US dollars), a land-locked country.

20) See Fuentes and Cabrera (2006) on fiscal situations.

21) An insightful paper on institutional policies after CAFTA is Fuentes (2006).

could observe their behavior and assist them.²²⁾ Possible support systems might include a reconsideration of crops and diversification of agricultural products into such crops as amaranthus. It is also important to explore complementary policies. In the case that transportation does improve, village residents would need to prepare themselves more to muddle through market economy. What kind of educational and literacy support would be appropriate for them? Since the impact would affect all residents, any countervailing efforts should cover not only children but all residents. Non-formal education would be necessary for this purpose. And, authors of this article believe that a viewpoint from “Document Management” would be appropriate to create a proper non-formal education course.²³⁾ In sum, there remains much to be learned from action-oriented research in the future.

Conclusion

The Guatemalan rural economy is heterogeneous, unequal, penetrated by the labor market, and not specialized in terms of agricultural production. These characteristics influence the possible effects of CAFTA-DR. The lower prices of agricultural outputs would decrease commercial production, which would reduce salaries in the rural sector. This reduction might increase subsistence production in non-commercial households, and reduce cash income. Indeed, this is what occurred in Mexico.

Whether the Guatemalan rural economy will gain from CAFTA-DR depends upon whether consumer gains will exceed income losses. However, mainly because of its slow implementation process, CAFTA-DR is not expected to have much effect upon the rural economy in the short run unless massive foreign direct investment occurs. The keys to FDI are labor quality and infrastructure. Labor quality is a function of education and training. Improvement in infrastructure is a double-edged sword in the sense that with lower transportation costs the rural economy will be fully exposed to market forces. Migration forecasts also depend upon factors including CAFTA-DR’s direct impact on the rural economy, migratory access, and returns from migration. Higher returns from migration would imply more remittances from abroad.

Complementary policies include infrastructure policies and education policies. Institutional policies would also be necessary. The action research method would be appropriate for further observing the effects of CAFTA-DR and assisting the rural sector at the village level. We hope that any post-conflict development researchers as well as practitioners can digest these basic findings and arguments concerning the Guatemalan rural economy in order to improve the discussion, planning and implementation of complementary policies.

22) We cannot emphasize enough the necessity of a benchmark survey. It would cover not only conventional aspects of household surveys but also new aspects such as document management and the residents’ own thoughts about their community.

23) For a document management perspective, see Nakamura and Hisamatsu (2005).

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