

**Harvard Business School**  
**Microeconomics of Competitiveness**  
**Professor Michael Porter**

**Final Report**  
**The Fresh Produce Cluster in Guatemala**

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**DISCLAIMER**

One of the team's members is a citizen from Guatemala, but he does not have prior experience in the agriculture sector or the fresh produce cluster. All interviews and contacts with the cluster's actors were made via conference call or e-mail.

May 8<sup>th</sup>, 2009

## 1. Country Analysis - Guatemala

Geography: Guatemala is located in Central America, bordering the North Pacific Ocean, between El Salvador and Mexico, and the Gulf of Honduras (Caribbean Sea) between Honduras and Belize. Climate in Guatemala is tropical with hot and humid weather conditions in lowlands and cooler in highlands. The country possesses wide variety of natural resources, among which nickel, rare woods, fish, and hydropower are the most prominent. Although Guatemala is located in the tropics, its two coastal zones and high-mountainous interior give it a variety of microclimates. Combined with access to both Pacific and Atlantic Oceans, the geographic location of the country presents important competitive edge over other countries of the region.

Size and demography: Guatemala is the most populous country and one of the largest countries in Central America with a population of over 13 million and a territory of 108,890 km<sup>2</sup>. With predominantly young and working age population (41% is below the age of 14, and 56% is between the age of 15 and 64), half of total population still lives in rural areas, although urbanization has been increasing in recent years (with urbanization rate of 3.4% compared to population growth of 2%).<sup>1</sup> With slightly above 13% of arable land, and significant land ownership inequality (an estimated 2% of the population own 72% of agricultural land), poverty and inequality is high, particularly in rural areas (Krznicaric, 2006).<sup>2</sup>

History: Guatemala proclaimed its independence from Spain on September 15<sup>th</sup>, 1821 to become a part of the United Provinces of Central America, a confederation that was dissolved in 1840, when Guatemala became an independent nation. The second half of the 20th century was marked

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<sup>1</sup> CIA World Factbook, *Guatemala*, <https://www.cia.gov/library/publications/the-world-factbook/geos/gt.html>

<sup>2</sup> Krznicaric, R. (2006), *The Limits on Pro-poor Agricultural Trade in Guatemala: Land, Labour and Political Power*; Journal of Human Development and Capabilities, <http://www.informaworld.com/smpp/title~content=t713431425>

by a variety of military and civilian governments as well as a 36-year internal armed conflict. In 1996 the government signed a peace agreement formally ending the conflict.<sup>3</sup>

Society and labor force: Guatemalan society is highly heterogeneous with about 60% of population representing Mestizos (mixed Amerindian and Spanish) and European descent, and the remaining 40% comprised of different Mayan and other ethnic groups with 23 official languages spoken.<sup>4</sup> Economically active population (EAP) in Guatemala represents 34% of population – the highest rate in Central America; 40% of which work in agriculture. Informal employment is large in Guatemala: it is estimated that 41% of the EAP is within the informal job market.<sup>5</sup>

Politics: Guatemala is a unitary republic with a President as head of State elected every four years for a single term, US-style Supreme Court and unicameral Congress elected every four years with a possible re-election. Since 1985 Guatemala has experienced democratic governments and peaceful political transitions. In 1993 the country suffered a coup d'état led by the acting president, however the action was declared unconstitutional and the president was forced to resign. Last elections were held on September 9<sup>th</sup> and November 4<sup>th</sup>, 2007 (presidential, congressional, and municipal), in which the left-of-centre “Unidad Nacional de la Esperanza” (UNE) won. There are 10 or more opposition parties.<sup>6</sup>

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<sup>3</sup> KPMG (2007), *Invest in Guatemala*, PRONACOM, page 5

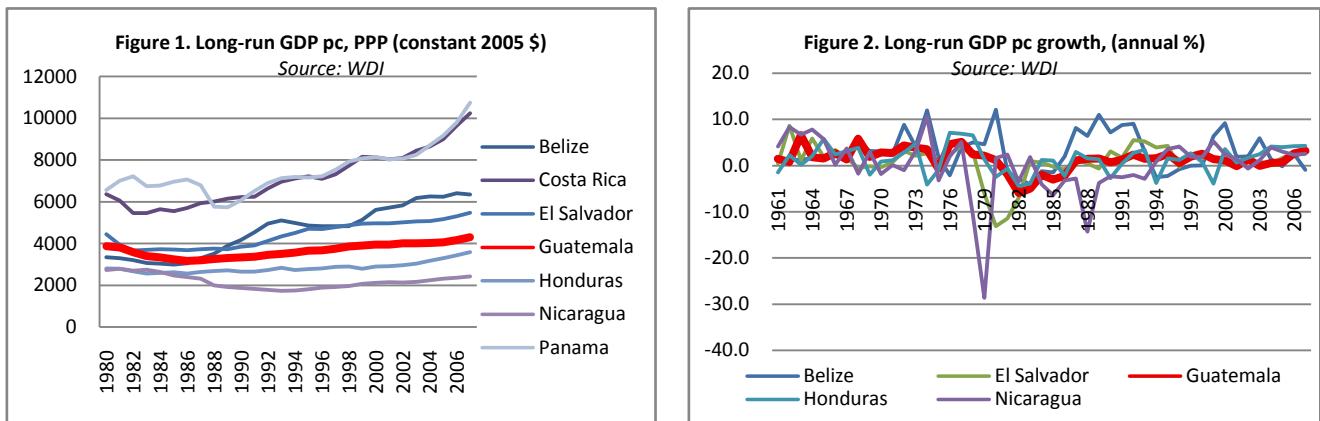
<sup>4</sup> KPMG (2007), *Invest in Guatemala*, PRONACOM, page 6

<sup>5</sup> KPMG (2007), *Invest in Guatemala*, PRONACOM, page 7

<sup>6</sup> EIU, *Country Report: Guatemala*, April, 2009, [http://portal.eiu.com.ezp-prod1.hul.harvard.edu/report\\_dl.asp?issue\\_id=1614440546&mode=pdf](http://portal.eiu.com.ezp-prod1.hul.harvard.edu/report_dl.asp?issue_id=1614440546&mode=pdf)

## 1.1. History of Economic Development in Guatemala

Long-run growth performance: With per capita GDP of \$4,308 (PPP, 2005), Guatemala ranks as the third lowest in the region just ahead of Nicaragua and Honduras (Figure 1). However, Guatemala's long-run growth performance has been less volatile over the 1961-2007 period, the country is right in the middle with an average growth rate of 1.45% following "high-growth" countries of the region, such as Belize, Costa Rica and Panama (Figure 2).<sup>7</sup>



As shown in Figure 2, growth rates in Nicaragua and Belize have been much more volatile (with standard deviation of 4.2% and 4.1%, respectively), and while Honduras is less volatile, Guatemala is the country in the region with the lowest per capita growth volatility (2.4% of standard deviation). Although low volatility is definitely a positive aspect, it is, nevertheless, disappointing to observe such a low long-run growth performance with per capita GDP in 2007 only 11% higher than in 1980. Moreover, in 2007, Guatemala's share of the world GDP was 21% below its share in 1980 (Artana, Auguste, Cuevas, 2007).<sup>8</sup> Such poor growth performance can be explained by an ineffective national development strategy consistently targeting the key binding constraints in the economy.

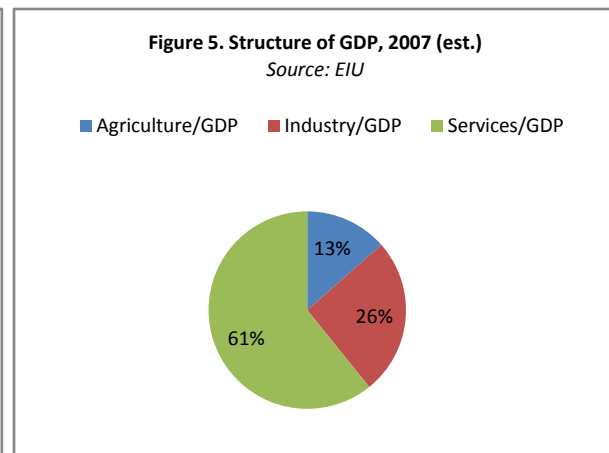
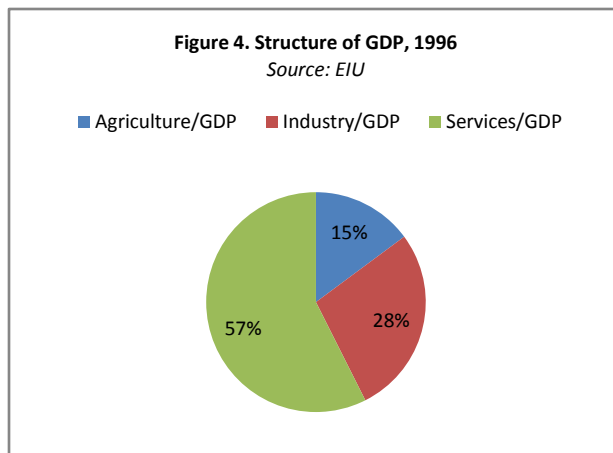
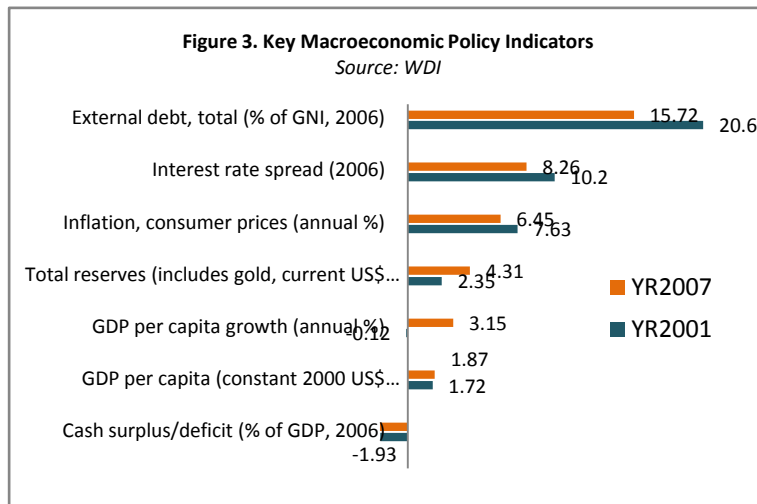
<sup>7</sup> World Development Indicators Online, <http://ddp-ext.worldbank.org.ezp-prod1.hul.harvard.edu/ext/DDPOQ/member.do?method=getMembers&userid=1&queryId=6>

<sup>8</sup> Artana, D., Auguste, S. and Cuevas, M. (2007), *Tearing Down the Walls: Growth and Inclusion in Guatemala*, Inter-American Development Bank, GU-P1031, Country Department Central America, Mexico, Panama and Dominican Republic (CID).

Macroeconomic environment and evolution of the structure of economy:

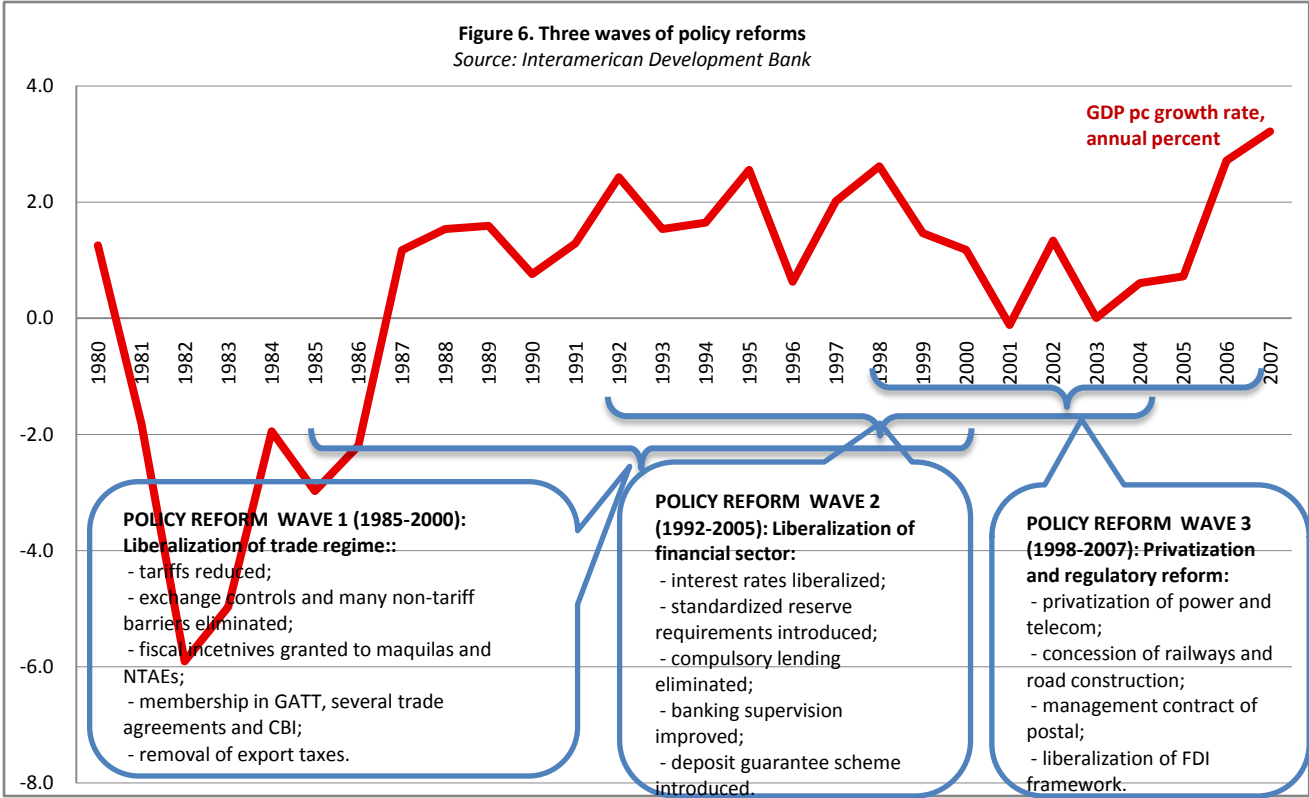
Due to continuous negative growth since 1980, political changes were implemented and the first ever democratic Presidential elections were held in 1985. Immediately after that Guatemala embarked on a new era of democratic rule and the introduction of major structural and institutional reforms. The country shifted to a floating exchange rate, devalued its currency, and initiated strict discipline over public expenditures. Since then and with peace accord signed in 1996, the authorities have been very successful in maintaining a predictable macroeconomic environment through stable exchange, interest and inflation rates. As a result, the country has

been able to lower its external debt, reduce inflation and increase its reserves (Figure 3).



As in other countries of the region with new policy reforms replacing import substitution model, shares of manufacturing and agriculture in GDP have been falling steadily despite the growth of maquila sector due to signing of several free-trade agreements, and the emergence of non-traditional agriculture exports (NTAEs).<sup>9</sup> While the service sector has been rapidly growing, agriculture nevertheless, remains an important sector in the economy, particularly in terms of employment generation (Figures 4 and 5).

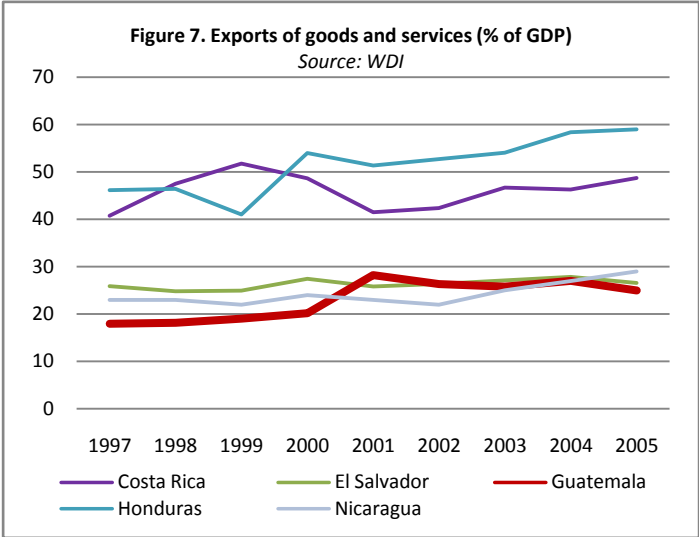
Starting from 1980s, the Guatemalan authorities have initiated three waves of policy reforms to facilitate the diversification and steady growth of economy (Figure 6). The first wave was to liberalize foreign trade. The second focused on developing the financial sector. The third wave of



<sup>9</sup> Non-traditional agriculture exports are the exports of fruits, vegetables and other agricultural products except for such traditional products as coffee, banana and sugar cane. So the fresh produce cluster is a sub-set of the NTAEs.

policy reforms concentrated on promoting private sector participation in infrastructure and reforming the regulatory framework.

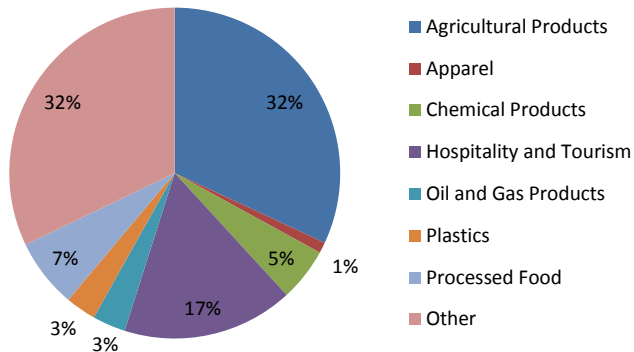
However, despite progress in reducing tariffs and liberalizing trade, total exports share in GDP have remained at around 25% making Guatemala one of the most closed countries in the region (Figure 7).



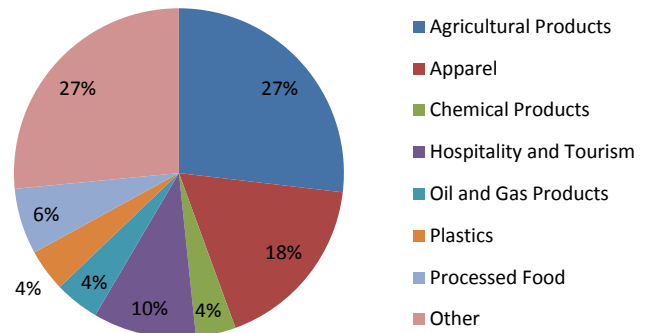
While export ratio remained stagnant in recent years, the composition of exports became much more diversified (Figures 8 and 9). This is the result of major divergences in the trends of the three leading export sectors: maquila (apparel), traditional exports, and NTAEs. The maquila sector benefited greatly from the

U.S. trade preferences and the relative success of the Free Trade Zone (FTZ) regimes in attracting FDI. The traditional exports (like coffee, bananas, and sugar) saw trade volumes fall steadily due to slow demand growth and low commodity prices. Finally, nontraditional exports (including flowers, vegetables, fruits, and organic crops) developed rapidly in the 1990s.

**Figure 8. Composition of Guatemalan Exports, 2001**  
 Source: Institute for Strategy and Competitiveness



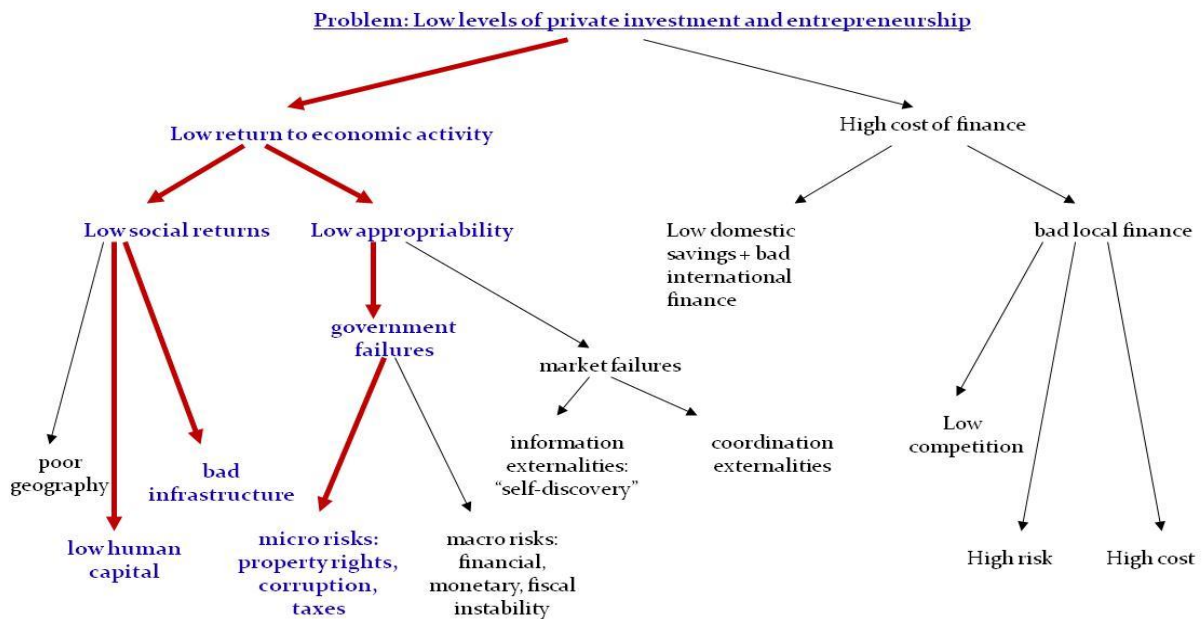
**Figure 9. Composition of Guatemalan Exports, 2007**  
 Source: Institute for Strategy and Competitiveness



Growth Diagnosis on Guatemala: As already mentioned above, Guatemala can be characterized as a slow growth case if looked from the perspective of the Growth Diagnostics Methodology (GDM) proposed by Hausmann, Klinger and Wagner (2008)<sup>10</sup>. Guatemala is a slow growth case with important shortcomings in factors complementing private capital investment, including the

**Figure 10: Growth diagnostics for Guatemala**

Source: IDB and CIEN



<sup>10</sup> Hausmann, R., B. Klinger, R. Wagner (2008), *Doing Growth Diagnostics in Practice: A 'Mindbook'*, CID Working Paper #177.

poor quality of institutions and the investment climate, the scarcity of human capital, and the under-development of infrastructure (Figure 10).

A recent study done by Artana, Auguste and Cuevas (2007) of IDB, find that Guatemala suffers from lack of investment opportunities since returns to private investment are low as private investors simply are not seeing sufficiently profitable opportunities.<sup>11</sup> These authors demonstrate that although financing is one of the problems, it is not the most binding on investment and, therefore, on growth. In addition, Guatemala has a very large share of the informal sector which is usually less capital intensive, less innovative and might be biased against certain types of human capital accumulation. As a consequence, it is less productive and is one of the key causes of the highest underemployment in the region.

Cost of finance is definitely not the biggest problem for Guatemala. Although the country has one of the lowest net FDI inflows and the lowest bank lending (both as shares of GDP) in the region, the share of net current transfer receipts in GDP have increased 4.3 times since 1996 which is the highest in the region. These remittances compensate for low FDI and access to credit ratios. Not surprisingly Guatemala has one of the lowest lending interest rates in the region, declined by about 6 percentage points since 1997.<sup>12</sup> In addition, only slightly more than 8% of firms interviewed by the World Bank's Enterprise Survey 2006 indicated access to finance as a major constraint.<sup>13</sup>

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<sup>11</sup> Artana, D., Auguste, S. and Cuevas, M. (2007), *Tearing Down the Walls: Growth and Inclusion in Guatemala*, Inter-American Development Bank, GU-P1031, Country Department Central America, Mexico, Panama and Dominican Republic (CID).

<sup>12</sup> World Development Indicators Online, <http://ddp-ext.worldbank.org.ezp-prod1.hul.harvard.edu/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=6>

<sup>13</sup> The World Bank, IFC (2006), *Enterprise Surveys, Guatemala: Country Profile 2006*, <http://www.enterprisesurveys.org>

In terms of low social returns and low appropriability, the analysis done by Artana, Auguste and Cuevas (2007) conclude that low quality and quantity of education combined with high level of informality and crime serve as key binding constraints impeding faster growth of economy.

Guatemala has the lowest adult

literacy rate (69%)<sup>14</sup> and the

lowest secondary and tertiary

school enrollment rates in the

region (Figure 11).<sup>15</sup> It is also

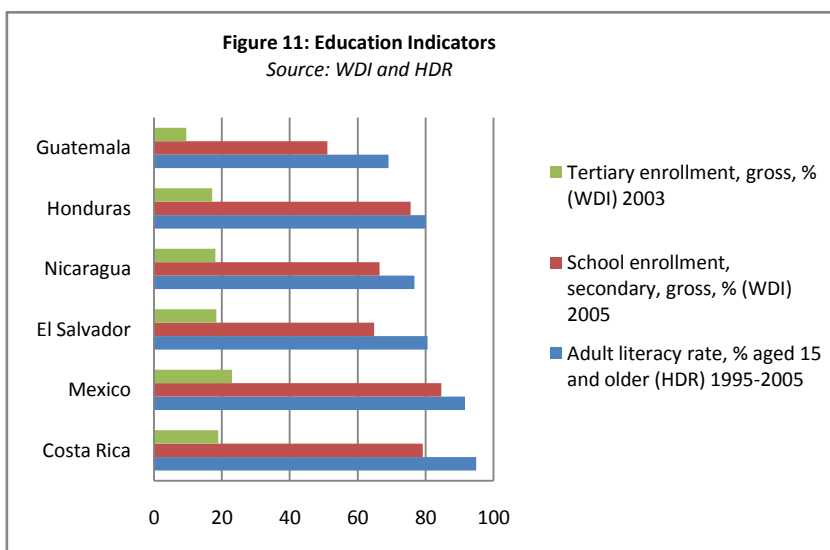
not surprising that informality

and crime are the most important

constraints identified by 21%

and 20% of businesses in

Guatemala respectively.<sup>16</sup>



## 1.2. National Competitiveness Diamond<sup>17</sup>

New global competitiveness index<sup>18</sup>: Guatemala currently ranks somewhere in the mid-range

among the Central American countries in terms of the Global Competitiveness Indices developed

by the Institute for Strategy and Competitiveness (Tables 1a-d). However, a closer look at the

progress made since 2001 reveals a very powerful insight: on two particular dimensions where

Guatemala used to rank the worst in the region, namely on SIPI and MICRO, the country has

improved its ranking more than any other country in the region making it to the mid-range that it

<sup>14</sup> Human Development Report (2007/2008), <http://hdrstats.undp.org/buildtables/>

<sup>15</sup> World Development Indicators Online, <http://ddp-ext.worldbank.org.ezp-prod1.hul.harvard.edu/ext/DDPOQ/member.do?method=getMembers&userid=1&queryId=6>

<sup>16</sup> The World Bank, IFC (2006), *Enterprise Surveys, Guatemala: Country Profile 2006*, <http://www.enterprisesurveys.org>

<sup>17</sup> This analysis is based on Porter, M., E. (1998), *On Competition*, Boston: Harvard Business School Press.

<sup>18</sup> This analysis has extensively relied on Porter M. E., Delgado M., Ketels C., Stern S. (2008), *Moving to a New Global Competitiveness Index*, Global Competitiveness Report 2008/2009, Chapter 1.2., World Economic Forum

is occupying today. On MACRO, Guatemala already was in the mid-range in 2001 and managed to hold on to it. While such improvement is encouraging, it is nevertheless important to recognize the weaknesses that need to be overcome to upgrade the country's competitive position further. This is particularly true for SIPI dimension on which it still ranks 104<sup>th</sup> among 134 countries in 2008. Given that businesses in Guatemala report the third highest percentage of sales loss due to theft, vandalism and robbery in the region;<sup>19</sup> it is the third country with the worst Corruption Perception Index;<sup>20</sup> and it is the most poor and unequal country in the region<sup>21</sup>, the country's overall global competitiveness index is seriously hampered by this dimension.

	<b>Table 1.a. New Global Competitiveness Index (GCI)</b>				
	<b>2001</b>		<b>2008</b>		<b>-/+ means "improvement / deterioration"</b>
	<b>Absolute ranking</b>	<b>Normalized ranking</b>	<b>Absolute ranking</b>	<b>Normalized ranking</b>	
<b>Countries Ranked</b>	74	100	134	100	
Costa Rica	48	65	52	39	-26
Panama	45	61	62	46	-15
El Salvador	47	64	73	54	-9
Guatemala	65	88	91	68	-20
Honduras	70	95	100	75	-20
Nicaragua	72	97	129	96	-1
	<b>Table 1.b. Microeconomic Competitiveness (MICRO)</b>				
	<b>2001</b>		<b>2008</b>		<b>-/+ means "improvement / deterioration"</b>
	<b>Absolute ranking</b>	<b>Normalized ranking</b>	<b>Absolute ranking</b>	<b>Normalized ranking</b>	
<b>Countries Ranked</b>	74	100	134	100	
Costa Rica	43	58	50	37	-21
Panama	47	64	54	40	-23
El Salvador	59	80	82	61	-19
Guatemala	68	92	57	43	-49
Honduras	72	97	92	69	-29
Nicaragua	69	93	116	87	-7

<sup>19</sup> World Development Indicators Online, <http://ddp-ext.worldbank.org.ezp-prod1.hul.harvard.edu/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=6>

<sup>20</sup> Transparency International, *Corruption Perception Index 2008*, [http://www.transparency.org/policy\\_research/surveys\\_indices/cpi/2008](http://www.transparency.org/policy_research/surveys_indices/cpi/2008)

<sup>21</sup> United Nations, *MDG Indicators*, <http://unstats.un.org/unsd/mdg/Data.aspx>

	<b>Table 1.c. Social infrastructure and political institutions (SIPI)</b>				
	<b>2001</b>		<b>2008</b>		<b>-/+ means "improvement / deterioration"</b>
	<b>Absolute ranking</b>	<b>Normalized ranking</b>	<b>Absolute ranking</b>	<b>Normalized ranking</b>	
<b>Countries Ranked</b>	74	100	134	100	
Costa Rica	38	51	44	33	-19
Panama	56	76	77	57	-18
El Salvador	55	74	96	72	-3
Guatemala	74	100	104	78	-22
Honduras	66	89	99	74	-15
Nicaragua	67	91	114	85	-5
	<b>Table 1.d. Macroeconomic Policy (MP)</b>				
	<b>2001</b>		<b>2008</b>		<b>-/+ means "improvement / deterioration"</b>
	<b>Absolute ranking</b>	<b>Normalized ranking</b>	<b>Absolute ranking</b>	<b>Normalized ranking</b>	
<b>Countries Ranked</b>	74	100	134	100	
Costa Rica	64	86	102	76	-10
Panama	28	38	61	46	8
El Salvador	21	28	46	34	6
Guatemala	48	65	86	64	-1
Honduras	63	85	94	70	-15
Nicaragua	69	93	127	95	2

Source: Institute for Strategy and Competitiveness and Team estimates

National Business Environment – Country Diamond: Although Guatemala is well endowed with basic **Factor Conditions**, it does lack some important advanced ones making it the weakest corner of the National Diamond ranked 80<sup>th</sup> among 134 countries in 2008 (Figure 12). Key strengths are good geography, availability and good condition of transport infrastructure, high share of EAP, high remittances and debt inflows. Key weaknesses are limited arable land, poor quality and quantity of education, poor social indicators, and limited technology penetration.<sup>22</sup>

**Context for Strategy and Firm Rivalry** in Guatemala can be characterized as moderate, ranking the country 55<sup>th</sup> among 134 countries in 2008. Key strengths are large private sector,

<sup>22</sup> We will not provide more evidence here, since it was already mentioned in previous sections.

low tax distortions, good cross-border regulations, and high level of regional integration. Key weaknesses are a rigid labor market regulations, high informality, serious concerns about security, low quality of regulatory framework, and low intellectual property protection. In the region, Guatemala has the worst Knowledge Economy Index 2008,<sup>23</sup> and ranks next to the worst in all four dimensions of the Intellectual Property Rights Index 2009.<sup>24</sup> According to the World Bank's Doing Business, exporters need to submit more documents than in any other country of Central America, while it takes 75 days to obtain an operating license, and as much as 12 times of the per capita income to get a construction permit.<sup>25</sup>

While **Related and Supporting Industries** are the strongest corner of the Guatemalan national diamond ranking the nation 55<sup>th</sup> among 134 countries, **Demand Conditions** lag well behind as another weak corner. Key strengths in these dimensions are long history of cooperation among participants of large coffee, sugar cane, and banana clusters, ICT promotion by government, while key weaknesses are deficiency of latest processing technology and lax environmental, quality and safety standards.

Institutions for Collaboration: As already mentioned, one of the key strengths of Guatemala is the abundance of various Institutions for Collaboration (IFCs) established at both national and regional levels to promote the advantages of cooperation in development. Some of the most important IFCs are: The National Competitiveness Program (PRONACOM) initially launched in 1999 and re-launched in 2004 as a result of a regional initiative that seeks to create a platform in Central America where productivity, investment, and international trade can take place on competitive terms with the most developed regions of the world; AGEXPORT, a non-lucrative

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<sup>23</sup> The World Bank, *Knowledge Assessment Methodology 2008 Report*, [http://info.worldbank.org/etools/kam2/KAM\\_page5.asp](http://info.worldbank.org/etools/kam2/KAM_page5.asp)

<sup>24</sup> Dedigama A. S. (2008), *International Property Rights Index 2009 Report*, Property Rights Alliance, <http://www.internationalpropertyrightsindex.org/>

<sup>25</sup> The World Bank, *Doing Business 2009: Country Profile Guatemala*, <http://www.doingbusiness.org/>

private entity created in 1982 with the main objective as promotion and development of non-traditional product exports; INVEST IN GUATEMALA a public/private investment promotion agency that supports foreign investors through the provision of detailed information on business opportunities that Guatemala offers, as well as specific advice by sectors; SIECA, an institution aimed at technical and administrative assessment of regional integration initiatives; INTECAP (The National Institute for Technical Training); plus a vast number of government agencies and bilateral and multilateral chambers of commerce, etc. Various sectors participate in these programs on the basis of joint funding.<sup>26</sup>

National Competitiveness Program and Donor Contribution: PRONACOM addresses actions and policies that will improve conditions for productive investments, supports the competitiveness enhancing policies, provides follow-up assistance, and supports human development and productivity (PRONACOM 2005). The first three years of the program's efforts are supported almost entirely by the US\$20 million World Bank loan.<sup>27</sup> The World Bank's total investment portfolio is \$564 million, and includes focus on improving business environment, expanding social investment, strengthening the competitiveness of rural productive supply chains, and assisting the public entities in capacity building efforts.

USAID has also played an important role in promoting and funding cross-cutting programmatic initiatives to support goals of the CAFTA-DR's implementation and improving Guatemala's performance on the Millennium Challenge Corporation (MCC) indicators. More specifically, USAID has provided extensive support to PRONACOM for the development of the

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<sup>26</sup> KPMG (2007), *Invest in Guatemala*, PRONACOM

<sup>27</sup> USAID (2008), *Optimizing Economic Growth and Poverty Reduction Benefits of CAFTA-DR: Accelerating Trade-Led Agricultural Diversification*, Volume II, Section 6, pp. 86-119

competitiveness agenda, and to the Rural Development Cabinet for the preparation of Integrated Rural Development Policy.

The Inter-American Development Bank (IDB) has also been active in the areas of supporting productive activities in tourism and agriculture through both large and small scale programs targeting small producer groups by providing grants, training and technical assistance.

### 1.3 Country Recommendations

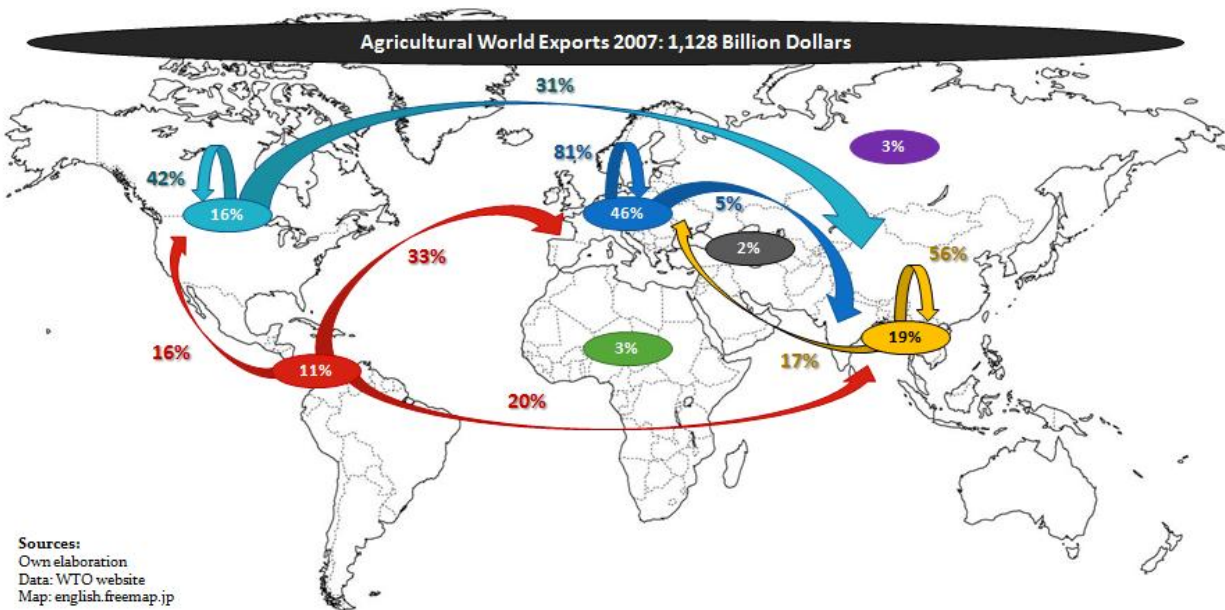
The following tables summarize our nine recommendations for the country level. They include an assessment of the issue's priority, the corner of the country diamond that they are related to, the overall ranking among the country's recommendations, the policy or measure to be implemented, and its requirements for design and execution.

Level of Analysis: Country	Diamond Corner: Context for FS&R	Priority: High	Policy Ranking: 1 of 9
<b>Issue Identified: Low regulatory quality</b>			
<b>Recommendation:</b>	Establish a task force to undertake a thorough review of Doing Business 2009 to lift the remaining bottlenecks such as those relating to a time to obtain operating licence, the number of documents needed to export a product. Implement CSI initiative together with the US Government to promote sanitary inspections in Guatemala before products leave the country.		
<b>Actors Responsible:</b>	Ministry of Economy, Ministry of Agriculture and Ministry of External Relations.		
<b>Resources Needed:</b>	This may not require substantial resources, as some of these measures are of legislative or normative nature, so just an amendment in the legal framework might work.		
<b>Feasibility:</b>	Will require personal commitment from the President to take this Initiative forward.		
<b>Estimated timeframe:</b>	1-year timeframe.		
Level of Analysis: Country	Diamond Corner: Factor Conditions	Priority: High	Policy Ranking: 2 of 9
<b>Issue Identified: Limited access to capital</b>			
<b>Recommendation:</b>	Land titles can be used as collateral to obtain loans from the banks, so it is important to expand the Land Registry and regulate property rights in the rural area.		
<b>Actors Responsible:</b>	Ministry of Economy, Ministry of Finance and Ministry of Agriculture.		
<b>Resources Needed:</b>	Funding to do a photographic measurement of land to establish property rights and give registry titles.		
<b>Feasibility:</b>	Difficult to implement. Will require personal commitment from the President to take this Initiative forward.		
<b>Estimated timeframe:</b>	5-year timeframe.		
Level of Analysis: Country	Diamond Corner: Context for FS&R	Priority: High	Policy Ranking: 3 of 9
<b>Issue Identified: High informal sector</b>			
<b>Recommendation:</b>	Improve tax administration procedures, initiate an online tax system and gradually switch to risk-based tax audit system. Introduce micro credit schemes to small farm owners that will require formal guidelines and procedures to benefit from such credit.		
<b>Actors Responsible:</b>	Minister of Finance.		
<b>Resources Needed:</b>	To improve tax administration, Government will need to undertake substantial training, and also to provide for right incentives it might need to consider raising the salaries of tax inspectors. In addition, Government may set aside a special fund to finance microlending, while also promoting microlending among private banks.		
<b>Feasibility:</b>	Moderately difficult to implement, will require sometime to transfrom the tax system.		
<b>Estimated timeframe:</b>	3-year timeframe.		

<b>Level of Analysis:</b> Country	<b>Diamond Corner:</b> Context for FS&R	<b>Priority:</b> High	<b>Policy Ranking:</b> 4 of 9
<b>Issue Identified:</b> Low security			
<b>Recommendation:</b>	Launch a comprehensive CITISTAT or a Balanced Scorecard Models to introduce a sense of responsibility and accountability in the police.		
<b>Actors Responsible:</b>	Ministry of Interior.		
<b>Resources Needed:</b>	Government may need to fund extensive training and the cost of the consultants to assist with implementation.		
<b>Feasibility:</b>	This is relatively difficult to implement and it takes a well coordinated effort from the Minister of Interior and the head of the security services.		
<b>Estimated timeframe:</b>	3-year timeframe.		
<b>Level of Analysis:</b> Country	<b>Diamond Corner:</b> Factor Conditions	<b>Priority:</b> High	<b>Policy Ranking:</b> 5 of 9
<b>Issue Identified:</b> Low quality of education			
<b>Recommendation:</b>	Prioritize, increase the public expenditure on education, specifically to increase the primary enrollment among poor children to match the rate of enrollment of non-poor children.		
<b>Actors Responsible:</b>	Minsiter of Finance, Minister of Education.		
<b>Resources Needed:</b>	This intaitive will require increasing budgetary expenditure on education from 1.7% of the GDP to benchmark with Costa Rica which has 21.8% of GDP.		
<b>Feasibility:</b>	This initiative is achievable but will require commitment form the actors responsible following a clear strategy of developing the sector.		
<b>Estimated timeframe:</b>	This plan is a 10-year plan to develop the education sector in Guatemala.		
<b>Level of Analysis:</b> Country	<b>Diamond Corner:</b> Factor Conditions	<b>Priority:</b> Medium	<b>Policy Ranking:</b> 6 of 9
<b>Issue Identified:</b> Low skilled labor			
<b>Recommendation:</b>	Establish a more specialized training programs in local vocational schools that prepare a more skilled workforce that is also better integrated, uses science-based quality control systems and technologies, and is linked with inputs and services to stimulate improved jobs and wage growth.		
<b>Actors Responsible:</b>	Minster of Education, Minister of Labor, Minister of Agriculture.		
<b>Resources Needed:</b>	This intaitive will require the attainment of international grants, from UNDP, USAID for example.		
<b>Feasibility:</b>	This initiative is achievable but will require a clear strategy of developing the skilled labor market.		
<b>Estimated timeframe:</b>	3-year timeframe.		
<b>Level of Analysis:</b> Country	<b>Diamond Corner:</b> Context for FS&R	<b>Priority:</b> Medium	<b>Policy Ranking:</b> 7 of 9
<b>Issue Identified:</b> High non-wage benefits and firing costs.			
<b>Recommendation:</b>	Relax high firing costs by lowering non-wage benefits in order to prevent incentives, especially in agriculture. This is one of the key reasons contributing to high informality in Guatemala. There is a growing tendency that employers shift from issuing permanent contracts to avoid paying non-wage benefits and being liable for high firing costs.		
<b>Actors Responsible:</b>	Minster of Finance & Labor		
<b>Resources Needed:</b>	Government may take up on more resources to compensate unions for high non-wage benefits, which is now being paid by the employers.		
<b>Feasibility:</b>	Relatively easy to implement, will require agreement with the unions to comply with these new regulation.		
<b>Estimated timeframe:</b>	Five year phased plan for implementation.		
<b>Level of Analysis:</b> Country	<b>Diamond Corner:</b> Context for FS&R	<b>Priority:</b> Medium	<b>Policy Ranking:</b> 8 of 9
<b>Issue Identified:</b> Weak investor & intellectual property protection framework			
<b>Recommendation:</b>	The president to ask the congress to initiate the law in 6 months period.		
<b>Actors Responsible:</b>	Ministry of Interior, Ministry of Economy.		
<b>Resources Needed:</b>	This will require a substantial capacity building for the regulatory agencies to be able to implement the law.		
<b>Feasibility:</b>	Will require personal commitment from the President to take this Intiative forward.		
<b>Estimated timeframe:</b>	3-year time period.		
<b>Level of Analysis:</b> Country	<b>Diamond Corner:</b> Related and SI	<b>Priority:</b> Medium	<b>Policy Ranking:</b> 9 of 9
<b>Issue Identified:</b> Deficiency of latest technologies & process machinery			
<b>Recommendation:</b>	Improve the capacity of National Research Institutes. Coordinate efforts of domestic businesses investing in innovation with each other as well as promote collaboration of domestic businesses with foreign investors that invest heavily in innovation and new technologies to ensure economies of scale through institutions such as ICTA, CONGCOOP, ASIES and REDOMAGRI.		
<b>Actors Responsible:</b>	President, AGEXPORT, SEGEPLAN, MINECO.		
<b>Resources Needed:</b>	Minimal resources needed, mostly of logistical nature. This is because, Government does not provide any direct subsidies, or tax exemptions, but rather work with private sector and IFCs to promote the technology penetration.		
<b>Feasibility:</b>	Moderately difficult to implement. Will require personal commitment from the President to take this Intiative forward.		
<b>Estimated timeframe:</b>	3-year timeframe.		

## 2. Agricultural Products Market

**Why is agriculture so crucial?** Agriculture involves 50% of the world's labor force; it represents 50% of the world's assets and accounts for 40% of consumer's purchases.<sup>28</sup> It is perceived as the initial required step to reduce poverty and hunger in developing countries. A failure to act on agriculture traps countries into poverty, hunger and economic underdevelopment. Last year we saw severe riots around the world due to higher food prices exacerbated by scarcity. There is enough food for everybody in the world; the problem is that food is not found where it is needed or people do not have the income to buy it. One of the millennium development goals is to reduce by half the proportion of people suffering from hunger by 2015. This makes agriculture one of the most important aspects to focus in the near future, not only for local growth but for the opportunities it provides to the global context.

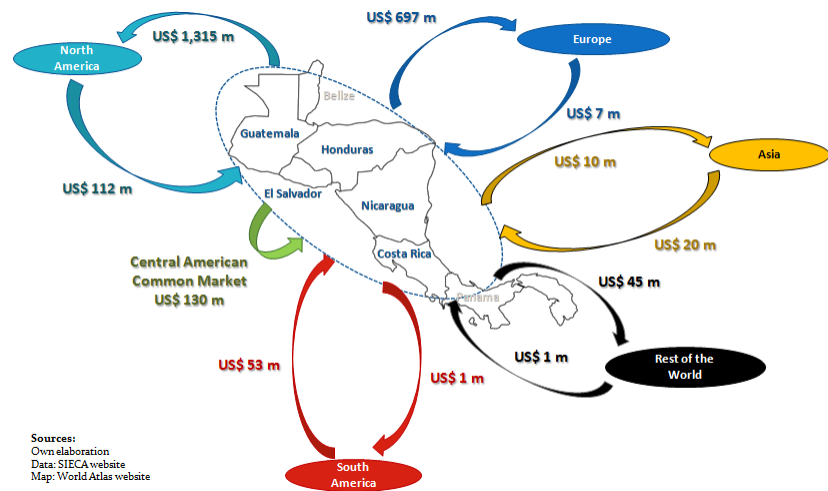


<sup>28</sup> BGP 204M Food Policy and Agribusiness Spring 2009 syllabus

The total global agricultural exports represent approximately 1 trillion dollars annually. Of this amount, only 11% comes from Central and South America while 16% of the region's production goes to North America, mainly to the US.

It is a common practice to identify Central America as the physical isthmus between Mexico and Colombia. For research matters we will use only the Central American Common Market (CACM) countries in this study (Guatemala, Honduras, Costa Rica, El Salvador, and Nicaragua), due to the availability of statistics through SIECA.

Non Traditional Agricultural Exports (NTAE) are crops which have not previously been central in a country's export history; they are identified as a way to reduce dependency on the few

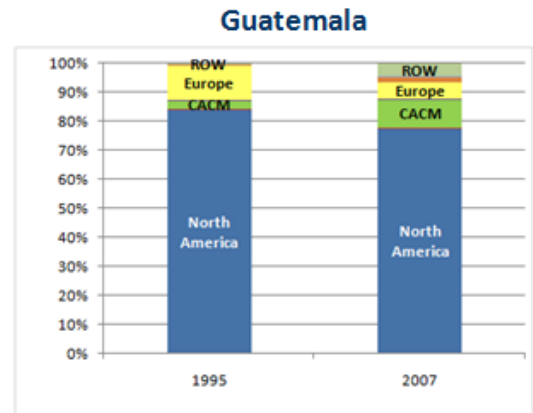


traditional crops, and try to reach new markets.

These five countries export annually to North America approximately 1.3 billion dollars worth of NTAE's, which for the area represent agricultural products excluding traditional export crops like coffee, bananas, and sugar cane. These include melons, snow peas, broccoli, etc., which are all new to the countries' export scheme.

There is diversity in the destination of the products exported in the region. There is a flow of exports and imports among the countries in the region, as well as other parts of the world besides the North American Market. Most of the countries in the region have maintained a similar

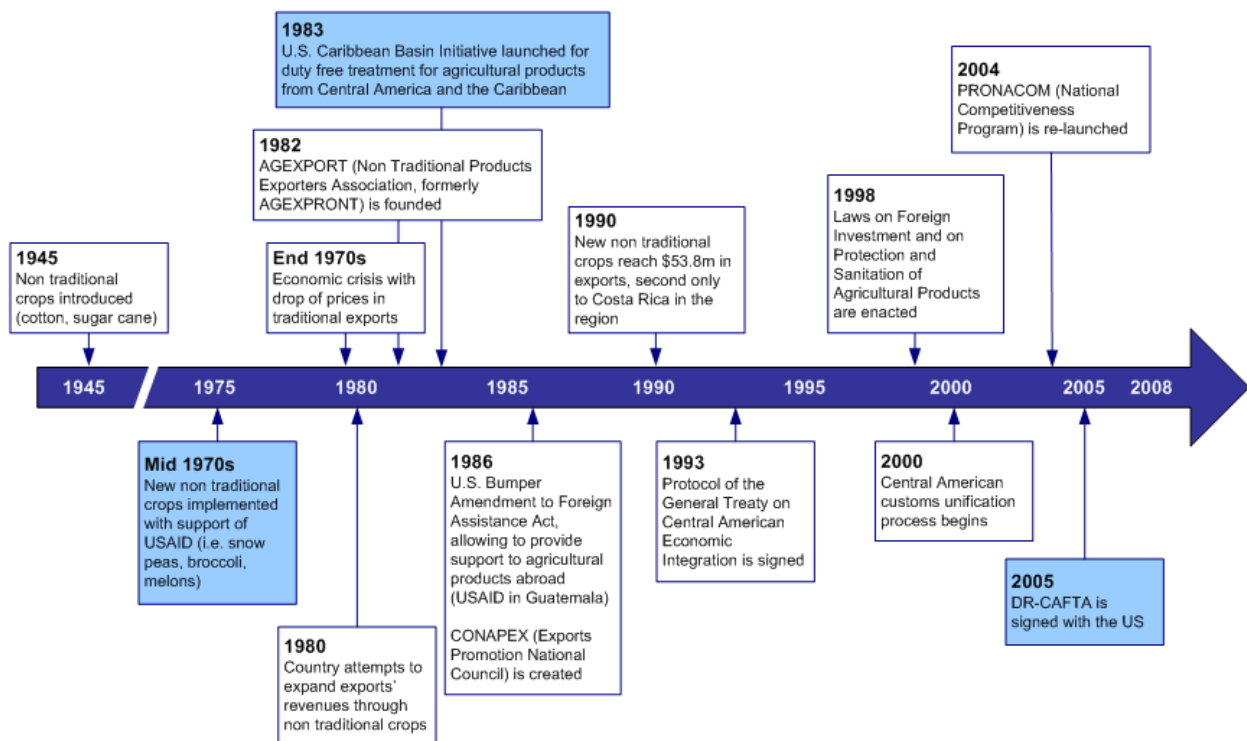
destination for their NTAE's. Guatemala has diversified more the destination of its agricultural products expanding to the CACM market, as well as the rest of the world. Still North America (US market) accounts for more than 75% of its exports, making it crucial to satisfy their requirements.



Source: SIECA reports

### 3. The Fresh Produce Cluster

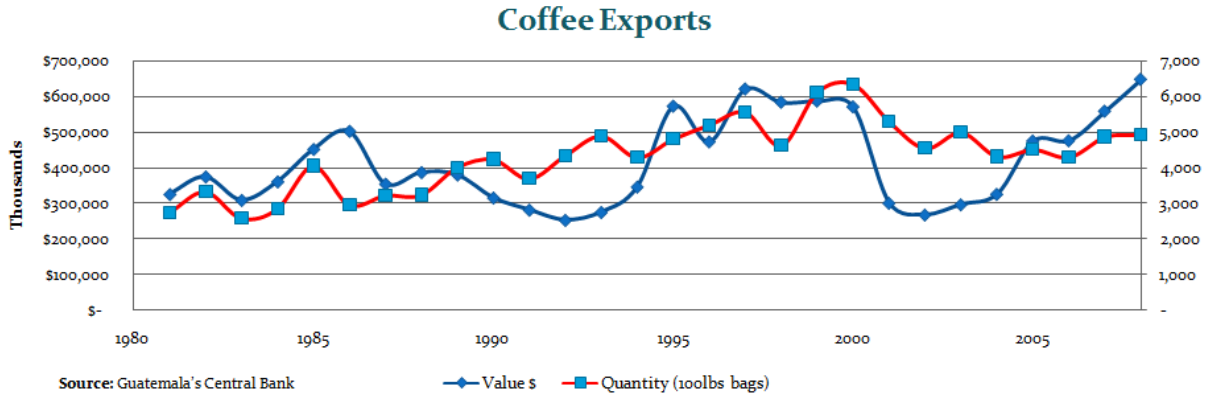
#### 3.1 Historical performance and evolution



Source: Own elaboration

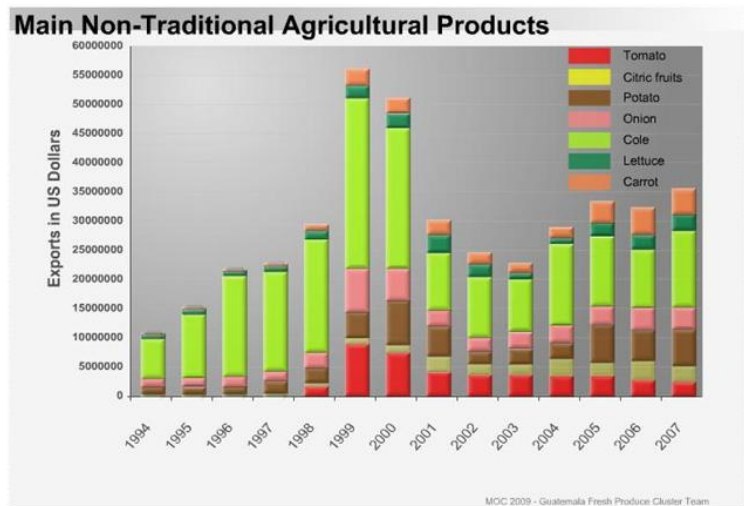
Commodities may see an increase in productivity and volume, and still have a gap in real income. For example, in Guatemala the impact of a "coffee crisis" is relevant because of its

economic importance. The magnitude of the price drop has caused such an adverse economic and social impact that it led to declining incomes, increasing unemployment, and rural poverty.<sup>29</sup>



Because of the high risk of the dependence on commodities, and since agriculture has been the backbone of Guatemala's economy, in the post World War II period traditional crops of coffee and bananas were supplemented by the non-traditionalists of that era (cotton, beef, and sugar cane).

The Fresh Produce cluster originated in the mid 1970s as a new group of NTAE's (tomatoes, citric fruits, potatoes, onions, snow, peas, etc.), and it was introduced with the support of USAID.<sup>30</sup>

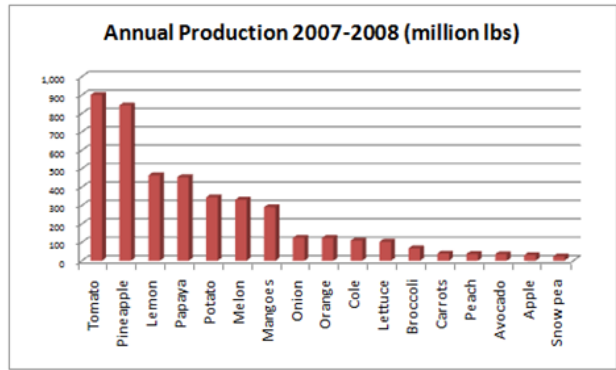


Source: SIECA

<sup>29</sup> FAO <http://www.fao.org/docrep/006/y5117e/y5117e03.htm>

<sup>30</sup> Ted report <http://www1.american.edu/TED/snowpea.htm#sec1>

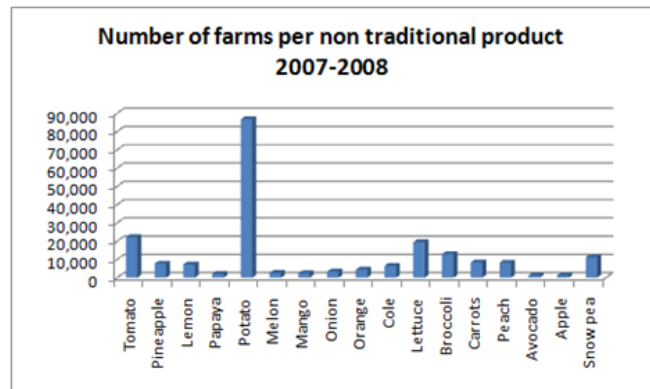
At the end of the 1970s an economic crisis caused the drop in international prices for traditional exports. The new NTAE's expanded as a way to increase farmer's income, reduce inequality and expand export earnings. Because these new crops are normally cultivated in



Source: National Statistics Institute (INE)

phases and on different land plots at different times during the year, the risk of losses from international price drops is reduced in comparison to more traditional export crops.

The World Bank promoted NTAE's through funding for cultivation in rural areas during the mid-1980s.<sup>31</sup> Guatemala's participation in the Caribbean Basin Initiative (CBI), which granted it duty free access to the U.S. market for most goods, was crucial for expanding



Source: National Statistics Institute (INE);

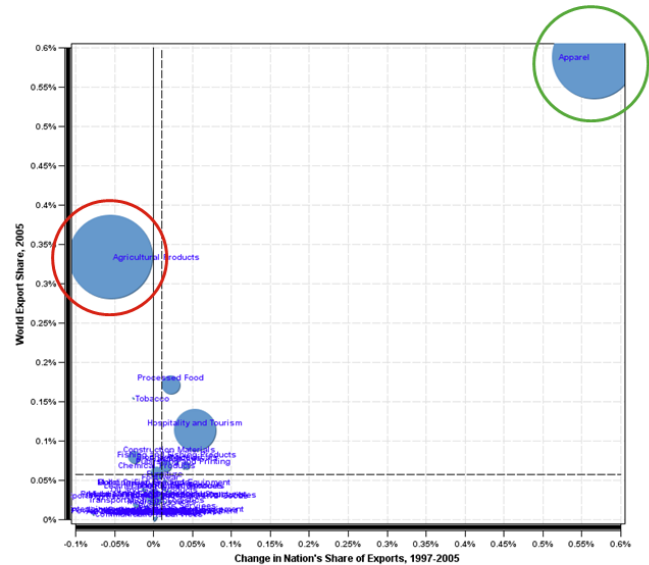
exports, which created opportunities particularly to its small-scale farmers. These advantages initially included greater returns to producers and the ability of small land owners to be competitive in cultivation. During this time it was established the initial productive base in fresh and processed products. By the year 2000, this sector generated 40,900 full-time higher paying jobs in land preparation, production, harvesting, and industrial food processing. The sub-sector

<sup>31</sup> Ted CASE Studies

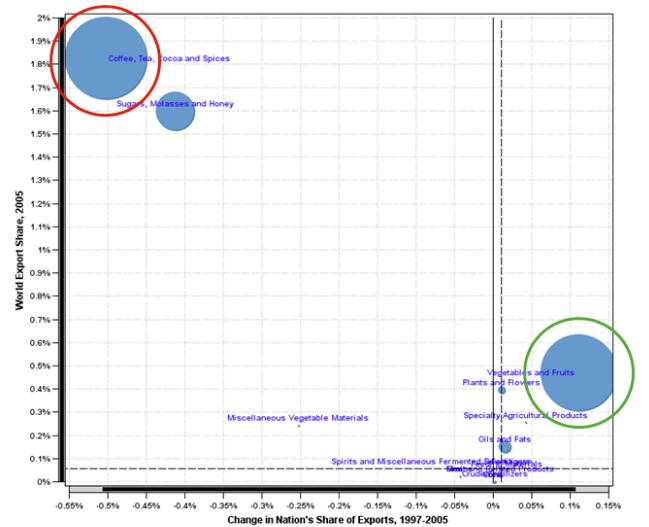
generates 4% of all agriculture production-related jobs and shows potential for sizeable expansion.<sup>32</sup>

We see a reduction of the whole agricultural products cluster in Guatemala as a share of the world exports. However at the sub-cluster level of agricultural products there are various product lines in the fresh and packaged fruits and vegetables that show significant potential for export growth and competitiveness. Organic products are one niche market where the Fresh Produce Cluster may have successes, as it is happening with other more traditional crops like coffee.

CAFTA-DR offsets increased opportunities in the US markets beyond those opened by CBI. After CAFTA-DR's implementation, NTAE's to the US have been growing at a rate of 17%.<sup>33</sup> Snow peas and other NTAE's have created local employment directly on farms, and indirectly through forward and backward linkages through the value chain and multiplier effects resulting from increased income spent locally.<sup>34</sup>



Sources: International Cluster Competitiveness Program – Institute for Strategy and Competitiveness  
FAO Statistical Yearbook 2004 – Guatemala's Country Profile



Source: International Cluster Competitiveness Program – Institute for Strategy and Competitiveness

<sup>32</sup> USAID (2008), *Optimizing Economic Growth and Poverty Reduction Benefits of CAFTA-DR: Accelerating Trade-Led Agricultural Diversification*

<sup>33</sup> USAID (2008), *Optimizing Economic Growth and Poverty Reduction Benefits of CAFTA-DR: Accelerating Trade-Led Agricultural Diversification*

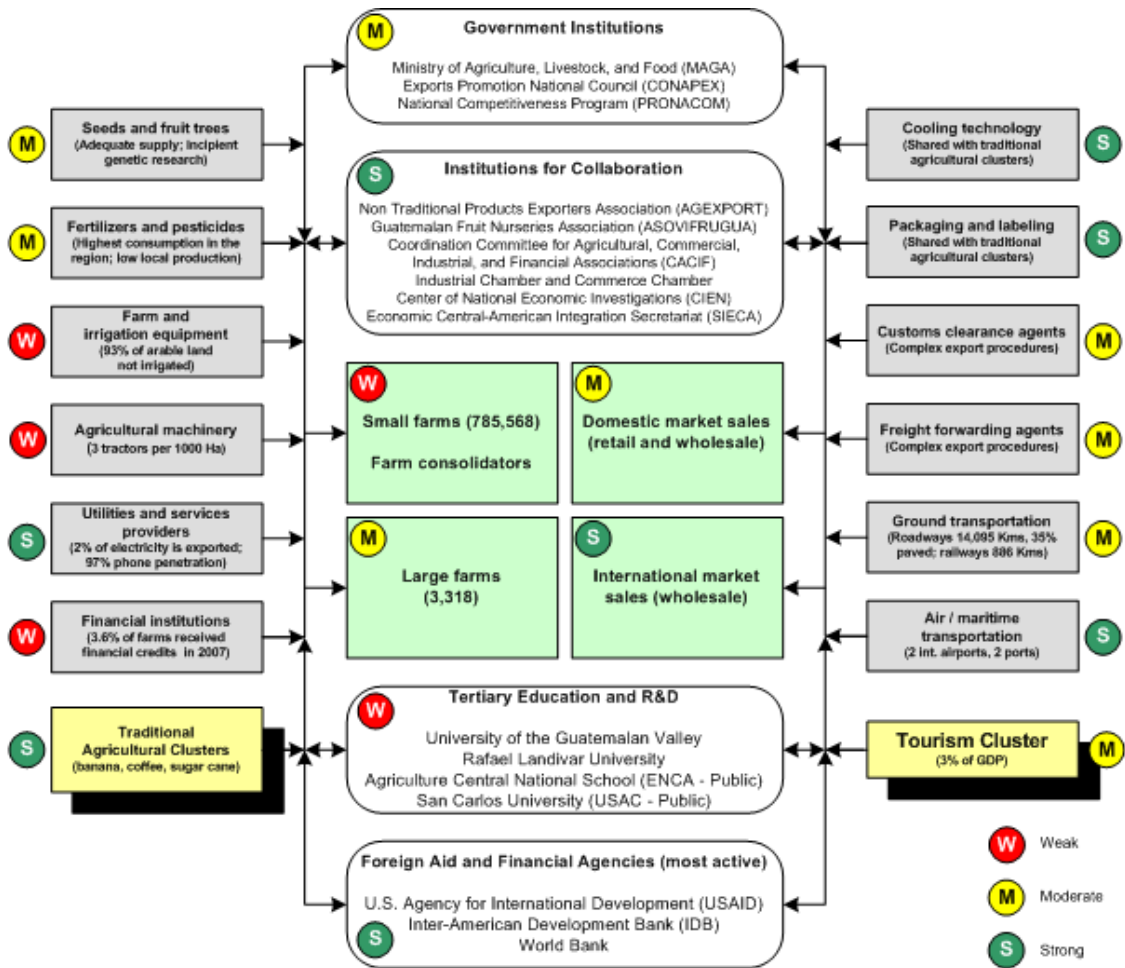
<sup>34</sup> TED CASE STUDIES <http://www1.american.edu/TED/snowpea.htm#sec1>

## **3.2 Cluster Map and Cluster Diamond**

### **3.2.1 Cluster Map**

Production is characterized by a large number of small farms. Contrarily to what happens in more developed markets, they frequently bypass other actors in the Value Chain such as farmer consolidators and small retailers to have direct access to final customers like households through traditional rural-type small markets. This is affecting the cluster's overall efficiency and performance since they impact the potential gains of economies of scale in production and transport, as well as reducing the negotiation power at the time of setting prices through the chain. The cluster map details the main actors that intervene in the fresh produce cluster. According to their characteristics, each one has been qualified as strong, moderate, or weak.

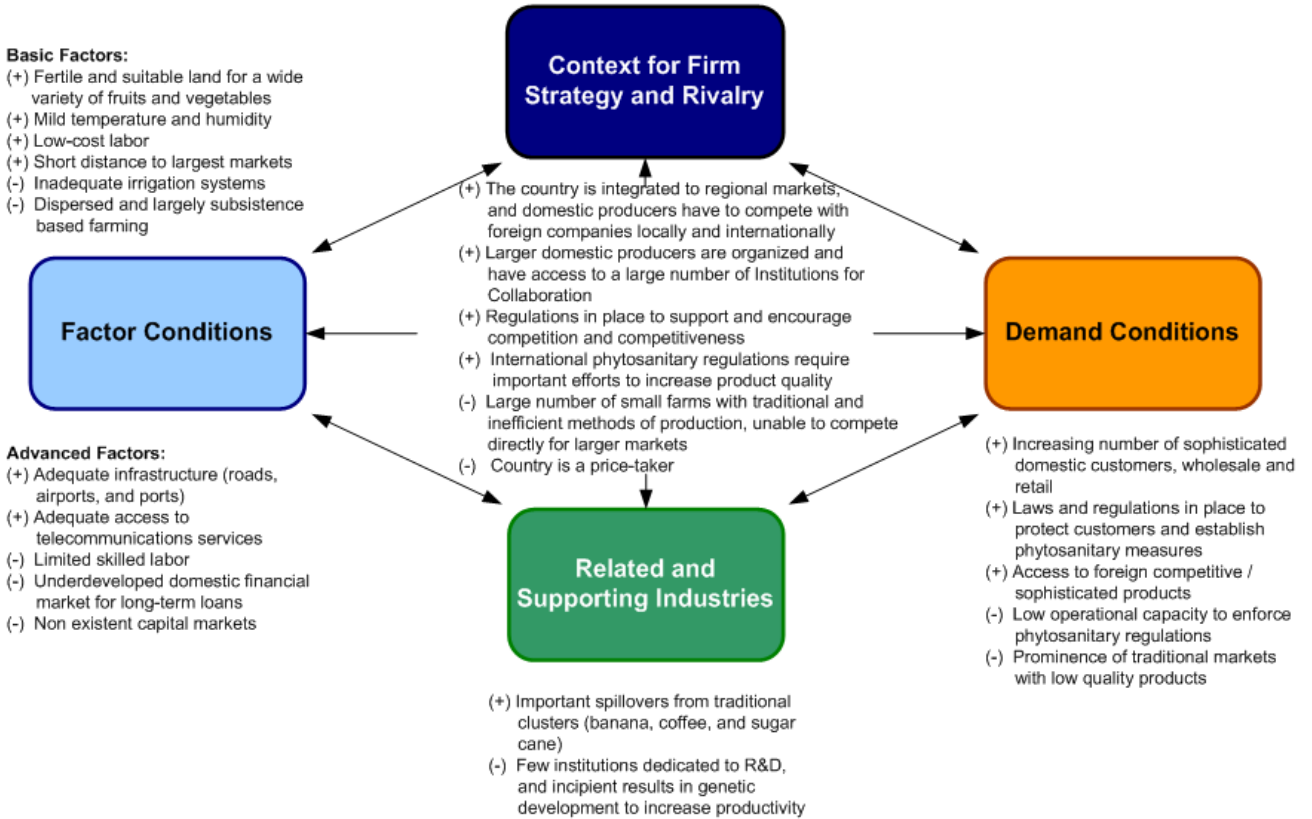
The cluster is heavily dominated by small farms, while a small number of large farms concentrate almost entirely the production for exports. Among the weak components we identified the low penetration of farm and irrigation equipment, insufficient availability of agricultural machinery, a small number of farms with access to credit, and a reduced number of academic institutions with tertiary education and R&D in agriculture. The strong aspects are the wholesale international market sales business, the good penetration of utilities and services, the support of the traditional agricultural clusters (banana, coffee, and sugar cane), the large number and variety of institutions for collaboration, the important role of supporting international aid agencies, the expertise in cooling technology and packing, and an adequately developed infrastructure of air and maritime transportation.



Sources: Own elaboration, based on Prof. Michael Porter's "On Competition."  
 Data: National Statistics Institute (INE); CIA World Factbook; FAO Statistical Yearbook 2004; interviews with SIECA and exporters.

### 3.2.2 Cluster Diamond

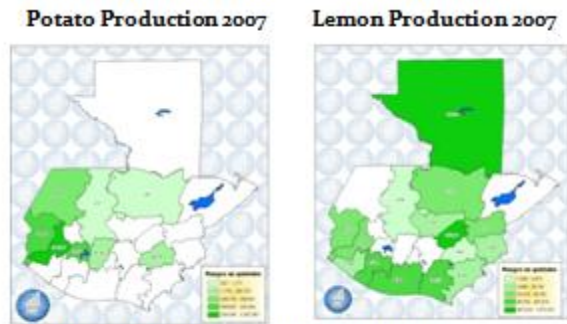
The Cluster Diamond assessment allows us to conclude that while Factor Conditions (FC) and Context for Firm Strategy and Rivalry (CFSR) have a moderate strength Related and Supporting Industries (RSI) and Demand Conditions (DC) are weak.



Source: Own elaboration, based on Prof. Michael Porter's "On Competition"

**Factor Conditions (FC): FC in the fresh**

produce cluster are moderate. Basic factors are in general positive: Guatemala has 19 ecosystems and 350 microclimates (USAID 2008) that allow to grow a wide variety of fruits and vegetables all year around, with



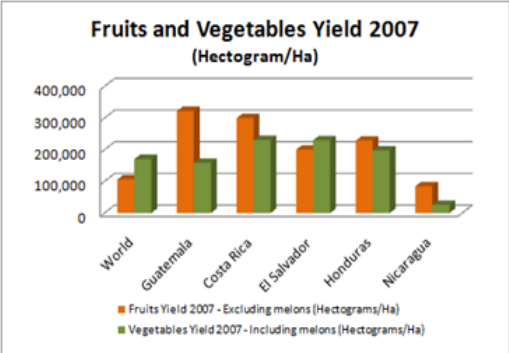
Source: National Statistics Institute (INE)

different concentrations of certain products in each region; the formal agriculture monthly wages (Ministry of Labor) varied from US\$257 in 2002 to US\$323 in 2006, allowing to hire experienced workers at low costs, although this is only a temporal competitive advantage that will be lost when the cluster reaches a higher productivity, improving the worker's quality of living; and there is a short distance to the US (2.5 hours to Miami by air and one week by sea),

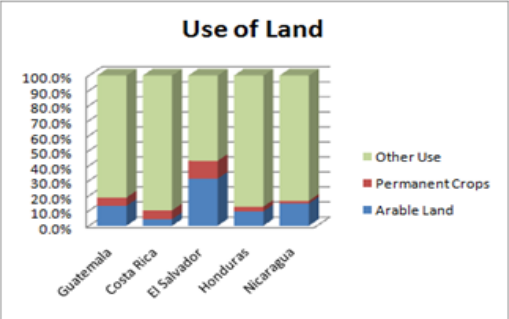
which is a vital advantage in comparison with other countries since it allows Guatemala to deliver agricultural products while they are still fresh; on the negative side, the two most relevant factors identified are the inexistence of adequate irrigation systems, and a majority of small farms dedicated to subsistence farming affecting the overall productivity. Advanced factors are not as strong: the cluster uses an adequate infrastructure of ports (AAPA: rank 25 & 29 in the World), airports (two international and other two in approval), and roads (14,095 Kms, 35% paved); and a good access to telecommunications services (Invest Guatemala: 97% phone penetration, mobile tariffs lowest in the western hemisphere, international LD calls among lowest in the World). Among the negatives, due to the subsistence farming the number of skilled workers is limited, and the domestic financial market is underdeveloped for the long-term loans needed for the cluster (SB Guatemala: 19 commercial banks with 8 offshore banks associated, 17 insurance companies, 15 bonded warehouses (Fiscal), only 24 debt emissions in the Stock Exchange, no equity listings).

Additionally, while fruits' productivity is the highest in the CACM region, and higher than the world's average, the cluster's vegetables productivity is below the region's average and around the world average.

Besides, in comparison to the region, Guatemala has a



Source: FAO Faostat



Source: CIA World Factbook (2005)

competitive use of land, as well as an important potential for new crops.

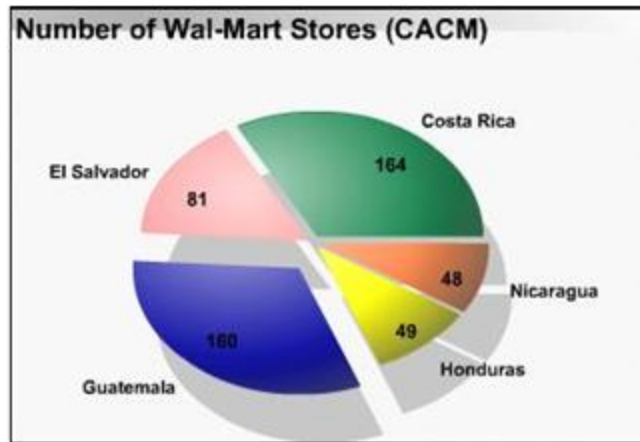
**Context for Firm Strategy and Rivalry (CFSR):** CFSR is also moderate. Guatemala has signed several free trade agreements that increase its openness and competitiveness: the Caribbean Base Initiative (1983), with Chile (1999), with Mexico (2000), the DR-CAFTA (2004), and with Taiwan (2006). The cluster has access to a large number of national and regional Institutions for Collaboration, like the Non Traditional Products Exporters Association (AGEXPORT); the Guatemalan Fruit Nurseries Association (ASOVIFRUGUA); the Coordination Committee for Agricultural, Commercial, Industrial, and Financial Associations (CACIF); the Industrial Chamber and Commerce Chamber; the Center of National Economic Investigations (CIEN), and the Economic Central-American Integration Secretariat (SIECA). Additionally, the Guatemalan government has promoted multiple laws to encourage, help, and promote competition. While the need to comply with international phytosanitary regulations is the best incentive to improve the cluster's products quality, due to the low level of farm consolidation it is more difficult to control this compliance, and the failure of one producer or exporter may block all the country's sales and exports (e.g. FDA ban in spinach from California, E. coli, 2006; FDA ban in cantaloupes from Honduras, salmonella, 2008).

On the negative side, micro-farms (< 0.7 Ha) and sub-family units (< 7 Ha) represent 94.1% of the farm units (USAID 2008), but only 18.6% of total land under cultivation, reducing significantly the possibilities of gaining economies of scale and pricing power; 72% of the poorest population (4.6 million) is rural (USAID 2008); the country has one of the most inequitable land tenure systems in the region (World Bank 2003); and Guatemala is essentially a price-taker, since it only has 0.23% of agricultural world exports (FAO 2004).

## Related and Supporting

### Industries (RSI):

RSI in the cluster are weak. Some positive aspects are that as a supporting traditional cluster, the sugar industry has an ISO 9000-2001 certification; also the banana company Chiquita

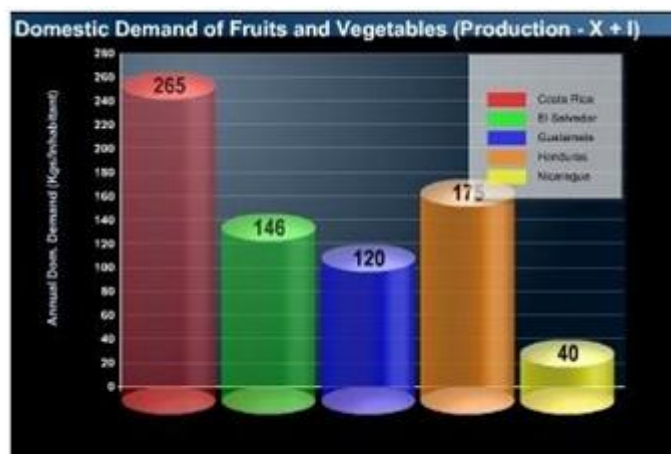


Source: Own elaboration, data from Wal-Mart Central America website

operates a port through a Public-Private Partnership, opening new logistics alternatives for the fresh produce cluster; additionally, another traditional cluster such as coffee exporters, have direct contacts with highly competitive retailers like Starbucks, networks that could also be enhanced to benefit the cluster. RSI is negatively affected by the fact that only four universities have degrees related to agriculture (University of the Guatemalan Valley; Rafael Landivar University; Agriculture Central National School, ENCA, Public; and San Carlos University, USAC, Public), and almost inexistent R&D programs, particularly in non-traditional products; besides, while the traditional clusters of sugar cane and banana have high investments in R&D, those programs are focused only in their products and do not benefit the fresh produce cluster.

### Demand Conditions (DC):

We also qualified DC as weak. Demand's sophistication has been encouraged through the approval of laws to regulate quality and sanitary conditions



Source: Own elaboration, data from FAO Statistical Yearbook

(Decree 36-98); Wal-Mart has a strong presence in the CACM region, and Guatemala is along with Costa Rica its most important market, increasing the competitiveness among the fresh produce cluster members by demanding higher quality products; Wal-Mart also has a “Lending hand for growth” program that encourages the quality improvement in small and medium enterprises; Wal-Mart’s market leader position has motivated other supermarkets to conform the SUCAP alliance to compete with it by increasing their coordination and products’ quality.

DC has not improved yet mainly because the Guatemalan government lacks the operational capacity to implement effective controls over the quality and phytosanitary conditions of the cluster products (USAID); additionally in comparison to the CACM region, Guatemala has a low domestic demand for fruits and vegetables due to the facts previously mentioned regarding the large share of subsistence agriculture farms.

### 3.3 Cluster Recommendations

The following tables summarize our nine recommendations at the cluster level.

Level of Analysis: Cluster	Diamond Corner: Factor Conditions	Priority: High	Policy Ranking: 1 of 9
<b>Issue Identified: Dispersed and largely subsistence based farming (785,568 small farms and only 3,318 large farms)</b>			
<b>Recommendation:</b>	There is a need to change from subsistence agriculture to an agribusiness perspective to reap the benefits of economies of scale, and also increase the cluster's overall performance and productivity.		
<b>Actors Responsible:</b>	Ministry of Agriculture, AGEXPORT, CACIF, small farms representatives, local and rural governments.		
<b>Resources Needed:</b>	Specialized training aimed to small farmers to explain the economic benefits of integration in cooperatives to sell their products (large number, better quality control, higher price negotiation power, access to larger markets). Government financed programs to cover the coordination and transaction expenses to establish the cooperatives.		
<b>Feasibility:</b>	Difficult to implement. A detailed plan of incentives and extensive training programs, as well as meetings, are needed.		
<b>Estimated timeframe:</b>	Medium term plan. Estimated 5-years to reach a significant integration in the cluster.		
<hr/>			
Level of Analysis: Cluster	Diamond Corner: Context for FS&R	Priority: High	Policy Ranking: 2 of 9
<b>Issue Identified: While the more sophisticated international demand requires domestic producers to improve quality and productivity, the market is highly sensitive to individual phytosanitary violations that could result on a ban over the country's total agricultural exports</b>			
<b>Recommendation:</b>	Create a cluster initiative for licensing and permitting exports, to self- regulate the producers’ compliance with quality and standards, and complement the capacity of the Ministry of Agriculture's inspection unit.		
<b>Actors Responsible:</b>	Ministry of Agriculture, Ministry of Foreign Trade, AGEXPORT, small farms representatives.		
<b>Resources Needed:</b>	Identification of operational economic funds, organizational responsibilities, and a detailed execution plan are needed.		
<b>Feasibility:</b>	Medium difficulty. A comprehensive action plan, and inspection procedures and units are needed to execute a sustainable effort.		
<b>Estimated timeframe:</b>	Medium term plan. Estimated 2-years to have private procedures and controls in place.		

<b>Level of Analysis:</b> Cluster	<b>Diamond Corner:</b> Factor Conditions	<b>Priority:</b> High	<b>Policy Ranking:</b> 3 of 9
<b>Issue Identified:</b> Underdeveloped domestic financial market for long-term loans (3.6% of farms received financial credits in 2007)			
<b>Recommendation:</b>	Promote the use of financial services in agriculture. New services need to be developed, such as micro lending with crops as collateral and loan guarantee programs.		
<b>Actors Responsible:</b>	Ministry of Agriculture, banking regulatory agency, microcredit institutions, small farms representatives.		
<b>Resources Needed:</b>	Modifications in the regulatory framework to allow and promote credits using crops as collateral. Effective microcredit programs and products, that benefit directly small farmers.		
<b>Feasibility:</b>	Medium difficulty. Financial institutions might be reluctant due to the loan risk involved; the Government might need to analyze a set of incentives to compensate that risk.		
<b>Estimated timeframe:</b>	Short term plan. Loan programs and products should be operational within a year.		
<b>Level of Analysis:</b> Cluster	<b>Diamond Corner:</b> Factor Conditions	<b>Priority:</b> High	<b>Policy Ranking:</b> 4 of 9
<b>Issue Identified:</b> Inadequate irrigation systems (97% of arable land not irrigated)			
<b>Recommendation:</b>	Create irrigation programs to help an increase in productivity, particularly in the small farming system.		
<b>Actors Responsible:</b>	Ministry of Agriculture, AGEXPORT, private banks, microcredit institutions, small farms representatives, local and rural governments.		
<b>Resources Needed:</b>	Subsidies and medium-term loans to acquire irrigation equipment. Specialized training aimed to small farmers to explain the economic benefits of irrigation for an increase in productivity (higher productivity, better income).		
<b>Feasibility:</b>	Easy to implement. Initial resources could be financed through international donor and development agencies.		
<b>Estimated timeframe:</b>	Initial phase one year. Medium coverage (30% of farms) in 5 years. Large coverage (90% of farms) in 10 years.		
<b>Level of Analysis:</b> Cluster	<b>Diamond Corner:</b> Demand Condit.	<b>Priority:</b> High	<b>Policy Ranking:</b> 5 of 9
<b>Issue Identified:</b> Prominence of traditional markets with low quality products			
<b>Recommendation:</b>	A strong government's enforcement of rules regarding quality and sanitation of the products in the local and rural markets.		
<b>Actors Responsible:</b>	Ministry of Agriculture, local and rural governments, small farms representatives.		
<b>Resources Needed:</b>	Coordination meetings. Establishment of a new supervising body, or use of the current inspectors force from the local governments to train them to execute the inspections in the rural markets.		
<b>Feasibility:</b>	Medium difficulty. A comprehensive action plan, and inspection procedures and units are needed to execute a sustainable effort.		
<b>Estimated timeframe:</b>	Medium term plan. Estimated 2-years to have procedures and controls in place.		
<b>Level of Analysis:</b> Cluster	<b>Diamond Corner:</b> Related and SI	<b>Priority:</b> Medium	<b>Policy Ranking:</b> 6 of 9
<b>Issue Identified:</b> Despite of the large number of Institutions for Collaboration (IFCs), they are focused in the agriculture industry rather than the cluster level.			
<b>Recommendation:</b>	Coordinate specific efforts within the existent IFCs or establish new ones that are specifically dedicated to support the fresh produce cluster.		
<b>Actors Responsible:</b>	Ministry of Agriculture, all related IFCs, fresh produce cluster producers and exporters, small farms representatives.		
<b>Resources Needed:</b>	Government should led coordination meetings to define with all actors the common set of priorities and goals for the cluster.		
<b>Feasibility:</b>	Easy to implement. Government needs to negotiate a timetable of meetings.		
<b>Estimated timeframe:</b>	Short term plan. New IFCs or specific committees within the existent IFCs should be operational within a year.		
<b>Level of Analysis:</b> Cluster	<b>Diamond Corner:</b> Context for FS&R	<b>Priority:</b> Medium	<b>Policy Ranking:</b> 7 of 9
<b>Issue Identified:</b> Guatemala is essentially a price taker (0.23% of agricultural World exports)			
<b>Recommendation:</b>	To increase the country's World market share, is necessary to define a vision for the cluster (e.g. becoming the leader in the region for non-traditional agricultural products in 5 years) and a strategy for branding and marketing the cluster's products ("Fresh from Guatemala"). Currently, cluster's actors are not properly organized to aim to a common long-term goal (focussed mostly in individual competitiveness).		
<b>Actors Responsible:</b>	Ministry of Agriculture, Ministry of Foreign Trade, AGEXPORT.		
<b>Resources Needed:</b>	A coordination plan is needed to define a long-term strategic plan for the cluster, including the economic resources that should be provided by both the government and the private sector to implement an effective marketing plan and communication strategy.		
<b>Feasibility:</b>	Medium difficulty. Private sector needs to understand the importance of this issue, and the Government has to commit budget allocations.		
<b>Estimated timeframe:</b>	Medium term plan. Estimated 5-years to establish an internationally recognizable reputation and identity for the cluster.		
<b>Level of Analysis:</b> Cluster	<b>Diamond Corner:</b> Related and SI	<b>Priority:</b> Medium	<b>Policy Ranking:</b> 8 of 9
<b>Issue Identified:</b> Low R&D in the fresh produce cluster. Incipient results in genetic development to increase productivity.			
<b>Recommendation:</b>	Expand the existing R&D programs that are financed and led by the traditional agricultural cluster (coffee, banana, and sugar cane) to cover the non-traditional agricultural products.		
<b>Actors Responsible:</b>	Ministry of Agriculture, AGEXPORT, traditional clusters representatives.		
<b>Resources Needed:</b>	Develop a set of incentives and compensation to the traditional clusters' members to use their R&D programs and facilities. Jointly efforts should be design for future research that present shared benefits.		
<b>Feasibility:</b>	Easy to implement. Since there is no competition involved, and a higher productivity at the fresh produce cluster benefits all actors, only the government's coordination and support is needed.		
<b>Estimated timeframe:</b>	Short term plan. Common R&D programs should be operational within a year.		
<b>Level of Analysis:</b> Cluster	<b>Diamond Corner:</b> Demand Condit.	<b>Priority:</b> Medium	<b>Policy Ranking:</b> 9 of 9
<b>Issue Identified:</b> Low operational capacity to enforce phytosanitary regulations			
<b>Recommendation:</b>	Start certification programs that stress food quality, environmental friendly processes, organic production, and fair trade, that will attain differentiation for the cluster allowing to establish a direct relationship with foreign buyers.		
<b>Actors Responsible:</b>	Ministry of Agriculture, Ministry of Foreign Trade, local and rural governments, AGEXPORT.		
<b>Resources Needed:</b>	A coordination plan is needed to define the best policies to be implemented at all levels of governments, as well as the private initiatives that would help to address effectively this issue. The government has also to assign budget allocations.		
<b>Feasibility:</b>	Very difficult. Currently there is no an efficient coordination between the Government and the private sector to implement this plan in the short-term.		
<b>Estimated timeframe:</b>	Medium term plan. Estimated 5-years to have all policies in place.		

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