

**Master program in Economic Growth,
Innovation and Spatial Dynamics**

**The development of agricultural food markets in
Costa Rica and the influence of the diffusion of
supermarkets**

Maja Vinde Folkersen
egi11mfo@student.lu.se

Abstract: During the past thirty years the world has witnessed remarkable developments in agricultural markets in various parts of the world along with several obstacles in reducing global poverty rates. Previous research suggests that the inclusion of small-scale producers into agricultural economies is crucial for sustaining growth and reducing poverty. We argue that the agricultural structural transformation of Costa Rica's agrarian economy has been successful in developing linkages and initiatives that are conducive for growth, market expansion and competitiveness. Nonetheless, we maintain that several obstacles remain in completing the transformation in agriculture seeing as a substantial part of the agricultural population is disconnected to the dynamic agricultural food markets in the country. We contrast the developments in agricultural food markets in Costa Rica with the diffusion of supermarkets in the country and suggest that the most effective drivers of change are likely to be those possessing local knowledge.

Key words: agricultural structural transformation, market integration, economic growth, inclusion of small-scale farmers, poverty reduction, institutions

EKHR72

Master thesis, second year (15 credits ECTS)

Aug 2013

Supervisor: Christer Gunnarsson

Examiner: Patrick Svensson

Table of contents

- 1. Introduction** _____ p. 4
 - 1.1 Research Question _____ p. 4
 - 1.2 Introduction to subject _____ p. 4
 - 1.3 Research Problem _____ p. 6
 - 1.4 Scope and objective of thesis _____ p. 7
 - 1.5 Outline of thesis _____ p. 8
- 2. Theory** _____ p. 9
 - 2.1 Previous research** _____ p. 9
 - 2.1.1 The role of institutions in driving economic growth and development _ p. 9
 - 2.1.2 Agricultural food markets in Latin America _____ p. 10
 - 2.1.3 Increasing market integration and competition _____ p. 11
 - 2.1.4 Implications of previous research _____ p. 12
 - 2.2 Theoretical approach** _____ p. 13
 - 2.2.1 Theoretical framework and concepts _____ p. 13
- 3. Methodology** _____ p. 15
 - 3.1 The macro-economic aspects of an agricultural structural transformation ___ p. 15
 - 3.2 The micro-economic aspects of an agricultural structural transformation ___ p. 15
 - 3.3 Exploratory approach _____ p. 16
- 4. Data** _____ p. 16
 - 4.1 Source material _____ p. 18
 - 4.2 Limitations of research _____ p. 19
- 5. Market integration in Latin American agricultural markets** _____ p. 20
 - 5.1 Historical overview** _____ p. 20
 - 5.1.1 Market integration, competition and spatial dynamics in Latin America 20
 - 5.1.2 Integrating markets and the inclusion of small-scale producers ____ p. 22
 - 5.2 Crucial findings in market integration mechanisms** _____p. 23
 - 5.2.1 Impediments for small-scale producers in the developing world ____ p. 23
 - 5.2.2 Identified success factors in agricultural development _____ p. 23
- 6. Agricultural food markets in Costa Rica** _____ p. 25
 - 6.1 Living standards and inequality _____ p. 25
 - 6.2 Economic growth, life expectancy and stability _____ p. 26
 - 6.3 Government objectives _____ p. 27

6.4 Demographic changes and labour market dynamics _____	p. 29
6.5 Agricultural food markets and its sub-sectors _____	p. 31
6.5.1 Coffee _____	p. 31
6.5.2 Chayote _____	p. 32
6.5.3 Cattle production and beef supply chains _____	p. 33
6.5.4 Cooperatives _____	p. 35
6.5.5 Organizational initiatives – EARTH University _____	p. 36
6.5.6 The emergence of supermarkets in Costa Rica _____	p. 38
7. Concluding analysis _____	p. 40
7.1 The drivers of the diffusion of supermarkets _____	p. 40
7.2 The drivers of the development of agricultural food markets _____	p. 40
7.3 The challenge of connecting the poor to growth _____	p. 41
7.4 The micro-economic aspects of sustainable growth _____	p. 42
7.5 The ambiguous effects of institutional settings on equity and welfare _____	p. 45
7.6 Future prospects of the agricultural structural transformation _____	p. 47
8. Main findings _____	p. 48
Reference list _____	p. 49
Appendix A _____	p. 53

Table 1: Indicators of macroeconomic volatility in the world, 1970-1992

Table 2: GINI indicators for Central America, 1991-2010

Graph 3: GDP per capita PPP (constant 2005 international \$) Central America, 1980-2011

Table 4: Annual % GDP growth 1980-2011 for Central America

Graph 5: Annual % GDP growth for Costa Rica, Nicaragua and Panama, 1980-2011

Graph 6: Life expectancy at birth (total years) Central America and Sweden, 1980-2011

Figure 7: Poverty headcount at national headline (% of pop.) in Costa Rica 1992-2011

Figure 8: GDP composition per sector in 2010

Table 9: Employment shares in agriculture, services and industry, 1992-2011

Table 10: The distribution of agricultural land cultivated in Costa Rica, 1993 and 2002

1. Introduction

1.1 Research Question: What has driven the development of agricultural food markets in Costa Rica from the 1980s till present, and how has the diffusion of supermarkets affected these developments?

1.2 Introduction to subject

The ideas put forward on what makes a country's economy grow and prosper have been continually developed, ever since the theories about the wealth of nations proposed by Adam Smith (1775) saw the light of day. Along with globalization and the continuously increasing integration of the global market economy, all countries in the world – be they developed, developing or less developed – face challenges in adapting and responding to the changes that inevitably arise with continuing product specialization, advanced technology and competition in today's world of globalization. On the one hand, a wide range of opportunities emerges with the advancement in technological innovation and production processes in the global economy. These opportunities could – potentially – possess unlimited scope for growth and development, regardless of location, country or culture. On the other hand, there are several obstacles faced in continuously adapting to globalization, responding to changes in international markets and staying competitive. These challenges were further underlined with the negative consequences of the Global Financial Crisis in 2008. Achieving sustainable growth is thus at the heart of the interest for all countries in the world – industrialized as well as poor ones.

For the countries in the world that are not characterized as “industrialized” - i.e. developing and less developed – productivity growth in the agricultural sector is especially important. Given that 80% of the world's poor (those living of less than US\$1 a day) base their income on agriculture, either directly or indirectly, it is of critical importance to find means of increasing and sustaining productivity growth in agriculture (Timmer, 2005; *UN millennium goals*, n.d.). Hence, it is clear that the starting point for reducing poverty and enhancing economic growth in poor countries' economies is to increase productivity growth in their agricultural sectors (Timmer, 2003&2005). However, several obstacles remain to be overcome. Small farms in developing countries are especially vulnerable to changes in food production systems and new requirements to technology, given their limited access to information and financial credit – and poor infrastructure. Although globalization and free

trade open up numerous opportunities for growth and development, small farms often face difficulties in reaping the benefits of these opportunities due to exclusion and/or disconnection to crucial links in the food retail systems (Farina&Reardon, 2000; Timmer, 2005). Thus, the inclusion of small farmers into the agricultural food markets is essential for growth and poverty reduction. More specifically, small farms need to become connected to larger segments of the agricultural markets for the pathway out of poverty to be feasible (Akkus&Timmer, 2008). This is, of course, much easier said than done, seeing as agricultural markets are unique and differ from one another in size, concentration and resource possibilities.

Despite the difficulty of connecting small farms in developing countries to the larger agricultural food markets, and finally to the international agricultural markets, interesting developments have taken place within the past 20 years or so in Latin America. In the larger economies, such as Brazil and Mexico, the diffusion of supermarkets have resulted in a continuous transformation of processes, changes in production and the emergence of niche markets in agriculture. Notwithstanding the number of farms that have faced exclusion in the wake of market liberalization, the structural transformation of agricultural food markets have also produced many positive results. These include, but are not limited to, improved opportunities for networking and collaboration between farms, significant reductions in production costs, increased productivity growth and differentiation in agricultural products (Reardon&Berdegúe, 2002; Reardon et al. 2003). In a research study on the diffusion of supermarkets in Latin America in 2000, Reardon&Berdegúe (2002) found a positive correlation between the diffusion of supermarkets and the structural transformation of agricultural food production. The most successful countries were identified as “the leading 6”: Argentina, Brazil, Chile, Colombia, Costa Rica and Mexico. In 2000, these countries constituted 86% of the income in Latin America and 74% of its population (Reardon&Berdegúe, 2002). In terms of population and geographical size, Costa Rica remains the smallest country out of those six. 50% of Costa Rica’s food retail was conducted by supermarkets in 2000, and the country had the highest number of supermarkets as a share of its population (Reardon&Berdegúe, 2002). Moreover, Costa Rica has been one of the most stable economies in Central America, and also one of the countries experiencing positive economic growth over a longer time period.

This leaves researches and economists with the impression that there could be specific mechanisms in Costa Rica’s agricultural economy, that have made the country differ in its

economic development path from other countries. Given that the country is not yet characterized as “industrialized”, but still as a developing country, it is plausible that a significant proportion of its economic growth over the past 30 or 20 years can be contributed to productivity growth in its agricultural sector, the diffusion of supermarkets or other factors related to globalization and the liberalization of markets. Societies continue to develop and prosper through different policy tools, institutional reforms, and new opportunities for trade and investment (Shimko, 2008). However, if Costa Rica have adopted *specific* agricultural policies that have proven conducive for productivity growth and development, these could shed light on how other developing countries in Latin America could introduce similar policies or methods.

1.3 Research problem

The complexity of economic development leaves us with many unanswered questions, yet it also opens up a number of insightful perspectives on what *might* contribute to sustaining economic growth and development in agricultural food markets. The developments of the agricultural economies in Latin America offer relevant proposals as to how market forces and trade policies concurrently could strengthen the structural transformation in agriculture. Nonetheless, it is likely that the Latin American region is so diverse that each agricultural economy represents a unique example of economic development, making it even more difficult to determine the effects of specific policies. From a broader perspective, growth and development are in themselves dynamic and flexible in scope and possibilities. There could be specific mechanisms or policies in the structural transformation path of one country that could be transferable to other countries. As mentioned earlier, Akkus&Timmer (2008) suggests that for a successful structural transformation to be possible, policy makers need to make sure that development tools reach the poor part of the population.

1.4 Scope and objective of thesis

This thesis will investigate the development of the agricultural food markets in Costa Rica. Remarkable changes have taken place within the Costa Rican economy within the past 20-30 years. Demographic changes, technical advancement and the wave of globalization have had major impacts on the speed and the scope with which supermarkets have emerged in the country, and on their current dominance in the food retail sector. The market integration process of specific agricultural sub-sectors in Costa Rica's agricultural economy will be assessed. Especially, the agricultural food markets within Costa Rica and Central America have been faced with continuous challenges in keeping up with the ongoing changes in local and foreign markets. Although many organizational, institutional and financial initiatives have successfully managed to embrace the numerous changes within the agricultural economy, many obstacles remain in completing the agricultural structural transformation, and make the effects of it conducive for equity, sustainable growth and development. The ambiguity of whether policies have enhanced sustainable growth or not in agricultural sectors will be reflected upon in the analysis, as will the role of institutions in responding to changes in foreign and domestic markets. Finally, we will discuss the difficulty of arriving at a set of future prospects for developing Costa Rica's agricultural markets, given the many influencing actors and mechanisms that concurrently drive the transformation.

Costa Rica has continuously received attention and praise for its approach to environmental problems, its stable and peaceful democracy and social development programs. Therefore, this thesis will attempt to identify whether or not the aforementioned variables distinguish Costa Rica from other Latin American countries and discuss how these have affected the country's growth and development. Comparisons to other Latin American countries will be made to illustrate similarities and differences between Costa Rica and remaining Latin America. However, it is beyond the scope of this thesis to assess the Costa Rican structural transformation from a perspective of OECD countries, or industrialized countries in general. The reason for this is that it is considerably more relevant to illustrate how Costa Rica's agricultural developments corresponds with, or differs from, its Latin American neighbours, whereas the growth and development paths of OECD countries have been substantially different. Nonetheless, comparisons to developed countries will be made when appropriate and relevant to the arguments and ideas presented. More specifically, these comparisons will be made in order to illustrate the scope of the differences in developmental variables – or the lack hereof – between Costa Rica and an industrialized country.

1.5 Outline of thesis

First, we will discuss the role of institutions in driving and affecting growth and development. This will be done by assessing the nature of the developments in agricultural food markets in Latin America. We will present reflections upon the implications of the results of previous research studies on agricultural transformation and discuss how these might, potentially, relate to the case of Costa Rica's development of its agricultural markets.

Second, we will present the theories by Timmer (2005, 2006) and Rodrik (2000) that will form the theoretical framework for conducting the analysis of the macro-economic aspects of the structural transformation in agricultural markets in Costa Rica. Third, we will present the different sources of data and scholarly articles that will form the basis of our analysis and the limitations and possibilities for bias in the thesis will be discussed. Fourth, we will set up a theoretical model for the macro-economic analysis, using the theories presented in section 2. Then, we will set up an exploratory approach for conducting the micro-economic analysis of various agricultural projects and institutional initiatives, using the main proposal of the research study conducted by Berdegué et al. (2008)

Fifth, we will initiate the empirical analysis with a short assessment of the Latin America region's growth and financial instability. Then, the main findings of the research study by Chiriboga (2007) will be discussed in order to shed light on the effects that demographic changes have on economic growth and structural economic changes. The impediments and success criteria for successful agricultural development will be presented.

A thorough analysis of Costa Rica's economic growth history and changes in its demographic characteristics from 1980s till present will be conducted. We will compare and contrast these to the remaining Central American countries, and discuss the merits and shortcomings of Costa Rica's current economic and social situation. The governmental objectives and policies will be assessed, along with the demographic transition that Costa Rica has undergone within the past 30 years or so. Various sub-sectors and actors in the agricultural markets will be analysed, and we will discuss these developments in relation to supermarket diffusion.

Sixth, we will arrive at the discussion of how the agricultural food markets in Costa Rica have developed the way they have, what initially off-set these changes, and what have been the major drivers of the structural transformation in agricultural food markets. We will apply the exploratory model of Berdegué et al. (2008) to the economic, developmental and social

aspects of the transition in Costa Rican agriculture, and finally arrive at a number of perspectives on its future prospects. The thesis will end with a conclusion of our main findings.

2 Theory

2.1 Previous research

2.1.1 The role of institutions in driving economic growth and development

The institutions that structure economic interactions and investment opportunities have long been a discussed topic. North et al. (2006) argue that the institutions that shape human interactions are the key to understanding differences in the development paths between societies. Rodrik (2000) maintains that an economically developed and socially well-functioning society is one in which institutions create the most socially and economically beneficial conditions for its citizens. A society which is developed in economic and social terms is one that 1) is governed by institutions ensuring a solid and stable foundation for trade and competition 2) has a reliable legal system, and 3) has participatory and proactive institutions that continuously seek to improve the incentives for investment (Acemoglu et al., 2004; Gundlach, 2002; Rodrik, 2000). As noted by Acemoglu et al. (2004 p. 53), Pirenne (1937) and Hicks (1969) proposed that the ultimate driving force for strengthening and sustaining long-run growth and development is likely to be **the expansion of markets**. Shimko (2008) supports this view by emphasizing that countries with positive and sustainable economic growth are those whose markets are participating in the global economy and are continuously adapting to globalization. From these perspectives, it becomes clear that the sustainability aspect of economic development is partly depending on the endogenous factor of institutions. Easterly (2001), as noted by Gundlach (2002), strengthen this proposal by arguing that the **incentives** for investment that institutions create form the *sine qua non* of successful economic growth and development. For this reason, market integration is of critical importance in economic growth and development. Thus, we will shortly discuss what have created incentives for investment and what has strengthened the integration of agricultural food markets in Latin America, and what have been the weaknesses and shortcomings of these developments.

2.1.2 Agricultural food markets in Latin America

Since the early 1990s, major changes have taken place in agricultural food markets in Latin America due to globalization and liberalization of markets. Mercosur is a free trade union in South America, which in 2000 consisted of Argentina, Brazil, Paraguay and Uruguay – and Chile as an associate member (Farina&Reardon, 2000). From the early 1990s a demographic transition was initiated in most of Latin America, with large parts of the Latin American population gradually moving from rural to urban areas, an increasing number of women started participating in the labour force and income share per person increased. Furthermore, the liberalization of markets considerably affected agricultural food markets in the region, their structure and their production dynamics. According to Farina&Reardon (2000), these changes suddenly required governments to develop new strategies to improve the terms of trade for FDI and competition in their agricultural sectors. On the one hand, multinational firms strengthened agricultural markets and competition through FDI, continuous improvements in product quality and larger product diversity (Dirven, 2001). On the other hand, the inflow of FDI posed significant threats to local small-scale producers in various agricultural sub-sectors, such as the dairy industry, and these had to develop new business strategies to stay competitive in the market (Dirven, 2001; Farina&Reardon, 2000). Although the responses of South American governments to the rapid inflows of foreign investments have been regarded as inadequate, many private agricultural markets managed to develop their own responses to the changes and thus stay competitive. As such, incentives to developing products, markets and strategies further fuelled productivity growth (Dirven, 2001; Farina&Reardon, 2000). Nonetheless, Dirven (2001) and Timmer (2005) point to a number of **major** challenges in increasing productivity growth in agriculture and making agricultural markets competitive in the long run: 1) making small farms in developing countries staying competitive and 2) successfully connecting these to larger market segments – and finally to the global agricultural economy.

2.1.3 Increasing market integration and competition

Berdegúe et al. (2008) conducted a major research study about innovation and market development in agricultural sectors, including many Latin American countries, but not Costa Rica. Out of all the agricultural market projects studied only the case of a large Mexican avocado cluster was found to have been entirely successful from a long-term development perspective. The reason for this was that Berdegúe et al. (2008) identified four dimensions of

sustainability that had to be in place to fully integrate small-scale agricultural producers into the economy: 1) institutional, 2) organizational, 3) financial and 4) attitudinal. Whether or not these dimensions of sustainability are actually required to make the inclusion of small agricultural producers into the agricultural economy successful will be investigated and discussed later. Nonetheless, Berdegué et al. (2008) proposed a number of more specific suggestions as to what constitutes a sustainable and successful process of integrating small- and medium size agricultural producers into the agricultural economy of developing countries. On the negative side, Berdegué et al. (2008) maintained that NGOs and donor agencies should refrain from interfering in the practical sides of designing development strategies for agricultural projects as these – very often – lack the required technical and local knowledge needed to make the projects successful in the long run. Also, the inclusion of small farms can only be sustainable if the project is economically profitable for both (or all) parts. On the positive side, Berdegué et al. (2008) emphasized that governments and economic institutions possess the potential to effectively affect markets through policies and financial sector schemes, but that different agents in the economy need to participate and be proactive for the participation of institutions to turn out beneficial and sustainable. Dirven (2001) found that the most competitive and growing dairy clusters in Latin America were the ones where local businesses and local governments participated actively in strengthening the development of their specific dairy clusters. As such, Dirven (2001) concluded that **vertical market integration** and **strategic cooperation between agents** in agricultural markets were crucial in making the overall structural transformation economically profitable *and* sustainable.

2.1.4 Implications of previous research

The main conclusion of the research study by Berdegué et al. (2008) illustrates the importance of Dirven's (2001) proposal about the participation of agents in agricultural markets: the biggest challenge for sustainable productivity growth in agricultural markets is finding out **how** private markets and public sectors can best complement each other during the transformation process. Obviously, there is no simple solution to this dilemma as private markets and public sectors differ considerably from one another within and between countries in Latin America (Akkus&Timmer, 2008). Nevertheless, we will investigate how the agricultural food markets in Costa Rica have been integrated into its domestic economy, and discuss how this process has been affected by the participation of, and the cooperation between, public sectors and private markets. Also, we will attempt to identify if specific agricultural or trade policies have contributed to competition in food retail sectors, affected the inclusion of small farms and increased market integration further. Farina&Reardon (2000) and Akkus&Timmer (2008) advocate a more responsive and active role of governments in promoting the structural transformation process through specific trade- and agricultural policies. The vertical market integration of medium- and small-scale producers in the agricultural economy could therefore turn out to be an important foundation for economic development and productivity growth in agricultural food markets. And lastly, the role of institutions at various levels in the domestic economy could be crucial as well.

2.2 Theoretical Approach

2.2.1 Theoretical Framework and Concepts

C Peter Timmer (2005, 2006): *The structural transformation of agriculture in a historical perspective and the process of change in economic development:*

Timmer emphasizes the importance of a government's role in facilitating a more successful structural transformation of its agricultural economy. Governments possess the ability to support this transformation through the investment in human capital and the facilitation of more effective use of technology and innovation in agriculture. The emphasis of Timmer's approach is not so much on the acquisition of technological equipment, but rather on *the internal process of generating human capital and knowledge creation within the economy*. Notwithstanding Timmer's emphasis on the transformation process that underpins economic development, he points to several challenges that need to be overcome. Effectively integrating agricultural producers of various sizes into a competitive domestic economy in an equitable, profitable and sustainable manner is easier said than done. The liberalization of markets continuously threatens to exclude, or disconnect, small farms from the larger agricultural market segments that form the main parts of food retail systems. In addition, some agricultural policies turn out to favour the farmers that are already competitive, and undermine those that are not. In other words, the structural transition in agriculture could in some cases be indirectly harming poor farmers – thus contributing to poverty rather than reducing it. Therefore, the two major challenges are: 1) how to connect the small farms to the major segments in the agricultural food markets and 2) effectively integrate them into a competitive agricultural economy, in a way that reduces poverty and contributes to overall economic growth.

Dani Rodrik (2000) 'Institutions for high-quality growth – what they are and how to acquire them':

According to Rodrik, participatory institutions are more likely to improve an economy's ability to adequately respond to changes in financial markets and trade environments. Rodrik (2000) maintains that "superior institutions" (p. 23)

are better capable of adapting to local conditions through local knowledge and policy tools. Rodrik points to a number of factors that are likely to create better conditions for growth. These are 1) private initiatives and entrepreneurial activity to improve competition, 2) participatory institutions providing an adequate foundation for a functional market economy, such as a reliable legal system and property rights and 3) social insurance.

The aspects on economic growth and institutional governance presented by Timmer (2005, 2006) and Rodrik (2000) could help illustrate how Costa Rican institutions have created incentives for entrepreneurial activity and investment. If policies have improved the terms of trade, it would be crucial to assess how these have affected equity, growth and development in the country. Furthermore, the concepts by Timmer (2005, 2006) and Rodrik (2000) on what drives and enhances growth and development will be applied in our analysis. More specifically, the problem areas in reducing poverty, identified by Timmer, are critical areas of economic development that needs to be put into perspective in order to decide whether or not Costa Rica has been successful in connecting the growth of its agricultural markets to its poor population. Thus, the theoretical framework and presented concepts will be used to identify problem areas and crucial focal points in the concluding analysis – and contrast these to the developments in Costa Rica's agricultural food markets.

3. Methodology

3.1 The macro-economic aspects of an agricultural structural transformation

The theories by Timmer (2005&2006) on the process of structural change in agriculture will form the basis of the macroeconomic analysis. Timmer mainly focuses on three aspects of the structural transformation process:

- 1) The government's role in facilitating a better transformation process through policies, reforms and programmes.
- 2) The generation of human capital and knowledge creation within agricultural food markets through new technology and innovation
- 3) The integration of agricultural producers of various sizes into the economy

3.2 The micro-economic aspects of an agricultural structural transformation

Berdegúe et al. (2008) identified four dimensions of sustainability necessary for the integration of small-scale producers into the economy to be fully successful. The research study by Berdegúe et al. (2008) provides a model for sustainability and development that is suitable to apply to the microeconomic aspects of developing agricultural food markets. Given that several research studies and academic articles in the field of economic growth and development have pointed towards the inclusion of small-scale producers into the agricultural economy as a key foundation for sustainable developments the model by Berdegúe et al. (2008) could be of interest for answering the research question of this thesis. Although it is difficult to arrive at a specific agricultural development model that can be applied to any agricultural economy in the developing world, it is likely that an assessment of the relevance of the four aspects of sustainability can contribute to the current knowledge of how agricultural food markets can strengthen and sustain productivity growth. The four dimensions of sustainability that Berdegúe et al. (2008) identified were:

- 1) Institutional sustainability
- 2) Organizational sustainability
- 3) Financial sustainability
- 4) Attitudinal sustainability

However, the fourth aspects of “attitudinal sustainability” will not be applied to our analysis of Costa Rica’s agricultural food markets. The reason for this is that the aspect is very vague and not thoroughly explained in the research study by Berdegué et al. (2008). It is difficult to succinctly determine the meaning thereof, along with the extent of “attitudinal sustainability” in various development projects. To avoid confusion and ambiguous concepts we will leave out the fourth aspect and only focus on the first three.

3.3 Exploratory approach

First, the thesis will adopt the three aspects outlined by Timmer (2005&2006) in order to assess the **macro-economic** aspect of the development of agricultural food markets in Costa Rica. This will be done by applying the following three problem areas to the analysis:

- 1) What has the Costa Rican government’s role been in facilitating and affecting the developing of crucial linkages in the agricultural markets? Have policies, land reforms etc. supported or halted the formation of linkages?
- 2) How have small- and medium size agricultural farmers been integrated into the economy, and what are the future prospects for including small-scale farmers into the economy?
- 3) Have the drivers of growth been endogenous or exogenous?

The thesis will discuss the merits and challenges of integrating the small- and medium size agricultural producers into the Costa Rican economy. Specifically, the thesis will try to identify if the integration have made small-scale producers in agriculture more productive and competitive, and if the integration have contributed to economic growth and development in the agricultural sector. To put the results of this integration into perspective, we will apply Rodrik’s (2000) theory on what constitutes an economically developed and socially well-functioning society. This will be done by discussing Rodrik’s (2000) focus on socially and economically beneficial conditions and relate these to the current, macro-economic conditions of the Costa Rican population that base their income on agriculture.

Second, we will turn our attention to the discussion of the **micro-economic** aspects of the integration of agricultural food markets in Costa Rica. The first three dimensions of sustainability that Berdegué et al. (2008) maintained were necessary for the integration of small-scale producers into the economy to be fully successful will be applied to Costa Rica's agricultural market developments. However, the limitation of the proposal by Berdegué et al. (2008) is that they do not specify what "institutional sustainability" or "organizational sustainability" actually entails. Nonetheless, there could be a logic reason for this: institutional sustainability might depend on the institutional context of a given country, i.e. institutional sustainability in the Mexican avocado cluster might entail entirely different settings than institutional sustainability in the Costa Rican agricultural economy. We will therefore attempt to apply the three dimensions of sustainability that Berdegué et al. (2008) proposed to a Costa Rican agricultural context, and discuss what these – potentially – entail for agricultural developments and productivity growth.

More specifically, we will discuss:

- a) Whether or not the three dimensions of institutional, organization and financial sustainability have been successfully achieved in the inclusion of small- and medium-size farmers in Costa Rica
- b) Whether or not these dimensions are actually required for the integration of agricultural markets to be successful
- c) What the three aspects, essentially, entail for agricultural productivity growth and competition in a context of developing agricultural food markets.

In order to be able to discuss the development of Costa Rica's agricultural food markets in relation to other Latin American economies, it is first necessary to build a short but succinct picture of the region's market integration, competition and institutional variables. We will therefore discuss the development of Latin America's markets and institutions within the past 20-30 years to give an idea of what have characterized the region's strengths and weaknesses in economic and financial terms. Moreover, we will investigate the agricultural food market developments of specific Latin American countries. By doing so we will be able to compare these developments with those of Costa Rica, and discuss how and why the country is an outlier in terms of growth, development and competition in its agricultural food sector. However, we emphasize that it is difficult to compare the developments in Costa Rican agricultural food markets with those of other countries as there is limited literature on the very

same developments for other countries. There are sharp contrast between a cluster – such as the Mexican avocado cluster, identified by Berdegué (2008) – and a country in terms of agricultural food markets. Therefore, comparisons will be made when deemed appropriate; otherwise the Costa Rican agricultural structural transformation and its evolving food markets will be assessed as a unique case.

4. Data

4.1 Source Material

To assess the diffusion of supermarkets in relation to the integration of small- and medium size agricultural producers, we will use the research study conducted by Chiriboga (2007), *‘Comercialización y Pequeños Productores – estudio elaborado para FIDAMÉRICA’* (‘Merchandising and small producers – study prepared for FIDAMÉRICA’) to shed light on what constitute impediments for integrating small producers in agriculture, and discuss what have characterized those that were successfully integrated. The research study investigated the success, failure, merits and shortcomings of various agricultural development projects in Latin America. In addition, the model presented by Berdegué et al. (2008) on sustainable agricultural development will be applied to Costa Rica’s agricultural developments in order to build an exploratory model for the analysis. The thesis will discuss the main findings of Chiriboga’s (2007) research study prior to conducting the empirical analysis of the development of agricultural food markets in Costa Rica. This will be done to set up an explorative model of the success factors, major impediments and general challenges for linking small farms to competitive agricultural food markets, and discuss how these might enhance the overall market integration and competition in food retail in Costa Rica’s economy.

With regard to figures and graphs, data will be derived from the World Bank’s databank, and from the research studies relevant for Costa Rica – i.e. Bertsch (2006) and ‘Country Profile – Costa Rica’ (2011). With regard to the more discussant and qualitative parts of the thesis, various research studies and the PhD dissertation by Balsevich (2006) will be used to form the analysis of the developments. The limitation of this is that only a limited number of research studies have been conducted about the specific agricultural sub-sectors in Costa Rica, and the mechanisms that drive the development of these. However, we will attempt to form a critical analysis of the agricultural food markets in Costa Rica by means of incorporating our own

critical view points on these research studies, and discuss their main findings. Lastly, relevant webpages – such as the official government page of Costa Rica and its ministry of foreign relations – will be used to examine policies and institutional settings.

The author of this thesis conducted a personal visit to the agricultural science university “EARTH University” (*Universidad EARTH – official website*, 2013) in the Limón region of Costa Rica in July 2012. This was done to further investigate the practical sides of the development projects that seek to integrate small-scale farmers into a larger production framework of the food retail system, and to be able to discuss the inclusion process along with the merits and obstacles of this with various professionals. The author of this thesis visited various sites, production- and research facilities of the university. Several professionals of EARTH University were interviewed, however only the interviews with two professionals will be referred to in this thesis: 1) Gerardo Mirabelli, vice president of development and 2) Fabian Campos, responsible for community projects at the community development program of the university.

4.2 Limitations of research

Unfortunately, the amount of literature that exists on agricultural food markets in Costa Rica is rather limited. Some figures derived from The World Bank Databank (2013) were only available from the year 1990 onwards, whereas some were available from the year 1980. In addition, many of the scholarly articles that were found on the subject were conducted by the same authors - i.e. Thomas Reardon, C Peter Timmer and J. A. Berdegué – and some of the authors even refer to one another’s literature. This could create a certain degree of bias in our analysis, although articles of other authors were also found. However, we hope that the additional sources along with the personal visit to EARTH University will help add quality, depth and new ideas to the research problem. Lastly, the fact that development of agricultural food markets in developing countries is a very ongoing process, it is possible that new and different developments in the Costa Rican and Latin American agricultural economies have emerged. For obvious reasons, we are not able to include these. Notwithstanding these limitations, we hope to shed light on the future prospects, opportunities and challenges for Costa Rica’s agricultural economy. We encourage other researchers to conduct further research in the field of agricultural competition, development and growth in the emerging markets in Latin America.

5. Market integration in Latin American agricultural markets

5.1 Historical overview

5.1.1 Market integration, competition and spatial dynamics in Latin America

One of the factors that significantly separate Latin America from most other regions in the world is the volatility in its economic and financial environment. Apart from Africa and the Middle-East, Latin America is the region in the world that has experienced the most volatility in terms of financial uncertainty, macroeconomic instability and economic recessions in the past 40 years (Hausmann&Gavin, 1996). Over the period 1970-1992, Latin America experienced an average annual inflation rate with a standard deviation of 463.5, in comparison with 88.7 in Sub-Saharan Africa (2nd highest) and 3.9 in the industrial countries (Appendix A, table 1). Moreover, the average annual monetary growth of Latin America had a standard deviation of 211.1 over the period 1970-1992, in comparison with 93.7 in Sub-Saharan Africa (2nd highest) and 5.6 in the industrial countries (Appendix A, table 1). This volatility can be partly explained by the debt crisis of the 1970s and 1980s that were exacerbated by the global oil crisis – however, the debt crisis affected Latin America the most seeing as many countries in the region were unable to pay back foreign debt (Shimko, 2008). As Hausmann&Gavin (1996) argues, the most likely reason for the severity of monetary volatility and financial instability in Latin America is inadequate financial management and failure to adequately respond to changes in the financial environments.

Interestingly, Hausmann&Gavin (1996) maintain that the macroeconomic volatility in Latin America has severely impeded trade, investment and capital flows in the region. While this might have been the case prior to 1996, where the article was published, the development of trade in the region has prospered since then. Crucial factors affecting economic growth and competition are likely to have been the liberalization of markets, spurred competition and the inflow of FDI. Markets became more diverse and open to trade as foreign investors found sufficient incentive to expand their businesses to developing countries. These aspects set aside, it is also important to keep in mind that Latin America in itself is a very diverse region in terms of geography, size and resources. Therefore, the terms of trade differ substantially from country to country, although globalization and the liberalization of markets are likely to have affected all countries in the region.

According to Reardon et al. (2003) there are specific variables on both the demand- and the supply side that have driven the diffusion of supermarkets in Latin America. These variables also apply to other developing countries in Asia and Africa, and are largely affected by the liberalization of markets, increased market integration and the adoption of technological innovations that have followed from the wave of globalization. We will shortly identify the variables on the demand- and the supply sides, and discuss the mechanisms in the markets that have affected the diffusion of supermarkets.

On the **demand side**, **demographic changes** such as 1) urbanization, 2) growth in relative wealth per person, and 3) the entry of women into the workforce outside the homes have led to changes in consumption patterns. The demographic changes have created several incentives for consumers to concentrate their purchases of groceries and other consumer products in one place, and further increased expenditure on these goods (Chiriboga, 2007; Reardon&Berdegué, 2002; Reardon et al., 2003). Furthermore, the **technical changes** such as 1) the emergence of supermarkets leading to lower product prices, 2) improved infrastructure through better transportation and 3) the acquisition of refrigerators further affected the changes in consumer behaviour (Reardon et al. 2003). As such, it appears that the demographic transition in many Latin American countries along with the advancement in technology have laid the foundation for the demand side of the diffusion of supermarkets.

In contrast, the **supply side** of supermarket diffusion appears to have been driven by the **increase in global market integration**: 1) increased incentives for supermarkets in developed countries to outsource to developing countries due to fierce competition in the home market for major supermarket chains, 2) FDI and the policies designed to make markets easier to entry in the developing world during the 1990s and onwards (Reardon et al. 2003). Along with the emergence of IT and more advanced means of communicating and sharing information, the practices for managing and improving supermarkets became gradually more and more advanced. This allowed the supermarket chains to target wider consumer groups of people in the developing world – more specifically the poor part of the population and their changing consumer needs (Chiriboga, 2007; Reardon et al. 2003). Obviously, the changes on the supply side were, in large part, fuelled by the opening of international financial markets, lower barriers to trade and the continuous increase in competition that led to outsourcing of

production and a considerable increase in FDI to developing countries from the early 1990s (Chiriboga, 2007; Reardon et al. 2003).

Despite the aforementioned mechanisms on the supply- and the demand side that fuelled and sustained the diffusion of supermarkets in Latin America, it is less obvious what initially *offset* the diffusion of supermarkets. Was it the demographic transition, the increase in living standards and the urbanization in Latin America that simply created enough incentives for supermarkets to expand to the region? Or, was it the changes in the international trading environment along with the liberalization of markets that suddenly made foreign investors able to identify opportunities to invest and expand economic activities? More specifically, were the mechanisms off-setting the diffusion of supermarkets endogenous or exogenous? We will attempt to discuss these aspects later on in our analysis of the development of agricultural food markets in Costa Rica, and contrast these to the agricultural food market transition in Latin America as a whole. First, we will investigate general patterns of market integration in the agricultural food economies in previous research studies in Latin America and other developing countries.

5.1.2 Integrating markets and the inclusion of small-scale producers

In his research study about market integration in developing countries and the inclusion of small-scale farmers into the agricultural food markets, Chiriboga (2007) arrived at a set of success factors for integrating small-scale farmers into the larger segments of the agricultural markets, as well as a set of general impediments for such integration to take place. Although not all of the success factors were necessarily required for a project to become sustainable or economically profitable, they nonetheless reflected relevant aspects of profit maximization, competition and productivity growth in agricultural food markets. Also, the set of impediments underline the critical importance of creating linkages and developing the organizational capability to effectively govern agricultural food markets.

5.2 Crucial findings in market integration mechanisms

5.2.1 Impediments for small-scale producers in the developing world

Apart from the major threat for farmers to face exclusion from the larger agricultural market segments, several other impediments to complete and sustainable inclusion remain (Chiriboga, 2007; Berdegué et al. 2008; Dirven, 2001; Farina&Reardon, 2000; Timmer, 2005). One of the most fundamental impediments for small farms to become effectively integrated in the agricultural food markets was – according to the research study by Chiriboga (2007) – poor infrastructure making transportation difficult and costly, and problematic to obtain crucial information. Once small farmers had been integrated into the agricultural food markets they still faced the continuing threat of being outcompeted from the market by monopolies or multinational firms that dominated the food retail system. Also, the continuous improvements in product quality, increasing product variety and new technology in the food retail systems made it difficult for small farms with limited resources to stay competitive (Chiriboga, 2007). Once infrastructure is poor enough to create larger distances between small farms and the larger market segments in relative and normative terms, it becomes easier for the subsequent exacerbating mechanisms to put small farmers at a further disadvantage. Especially, the failure to comply with product requirements (hygiene, quality, timeliness of delivery etc.) is considered to considerably aggravate the competitive position of small farms and hamper future prospects for sustainable inclusion.

5.2.2 Identified success factors in agricultural development

First, Chiriboga (2007) outline that **leadership** was the key to development, regardless of the size and nature of the agricultural production given that leaders can act as promoters of change and development. Second, the **organization** of agricultural production(s) was critically important as an organization, in itself, facilitates collaboration, information and knowledge exchange, networking and the forming of linkages to other farms and/or different agents in the markets. The most important type of organization was cooperatives as it was founded by small farms and built on local knowledge, contacts and collaboration. Third, the **forming of linkages** within and between local agricultural communities was crucial, and obviously reinforced the building of the previously discussed *organization*. Furthermore, the forming of linkages and networks may help diminish the dependence on external information

agents and thus help smaller agricultural communities become more independent and competitive in relation to larger segments in the domestic agricultural market. Both the organizational aspect and the forming of linkages in agricultural food production, Chiriboga (2007) argued, were proved to reduce the number of links between agricultural producers and the final sale in supermarkets and/or smaller retailers. Ultimately, these aspects could turn out to reduce costs of production and transportation, ease the process from initial producer to final consumer and significantly increasing profits. As such, small farmers were much more likely to become productive, competitive and sustainable when the aforementioned aspects were formed and working efficiently.

The *ultimate key factor* for success was the merchandising of products and the linkages created to dynamic markets. Together, these mechanisms concurrently increased the number of opportunities for expanding production, advancing products, specializing and keeping up with the requirements in the competitive food retail markets – hence resulting in competitive market dynamisms for many producers of various sizes in agriculture (Chiriboga, 2007).

6. Agricultural food markets in Costa Rica

In terms of geography, size and politics Costa Rica distinguishes itself from most other countries in both Central and South America. The abolishing of its army in the late 1940s is likely to have had many direct and indirect effects on growth and development opportunities in Costa Rica – both economically and socially. When comparing to other Central American countries, Costa Rica appear to be ahead in terms of economic development and living standards, although the country still faces significant challenges in the wake of increased competition from foreign countries. First, we will make a short and succinct overview of Costa Rica’s demographic and economic figures within the past 20-30 years and compare these to the remaining Central American countries and one developed country – Sweden – to get an idea of how Costa Rica has developed relative to the region it is situated in. Second, we will assess the more specific details of the country’s governmental settings, labour dynamics and demographic changes to build a picture of Costa Rica’s developmental history up until present. Third, we will conduct a thorough analysis of specific sub-sectors in the agricultural economy to determine how and why the developments of these have been influenced by the diffusion of supermarkets in the country.

6.1 Living standards and inequality

In Central America, the living standards have been improved within the last 30 years, however to different extents from country to country. According to The World Bank Databank (2013), the GINI indicator measures the extent to which the distribution of wealth among individuals within a country deviates from a perfectly equal distribution. In other words, a perfectly equal country has a GINI indicator of 0 whereas a country with total inequality has a GINI indicator of 100. It is important to note that no country in the world has a GINI indicator of 0 – not even the country that is considered to be the most “equal”. However, it is crucial to compare the GINI indicator of Costa Rica with that of its Central American neighbours, simply to get an idea of the degree of inequality. The GINI indicators for Central America and Sweden from 1991 – 2010 are outlined in table 2 (Appendix A). We have included Sweden in the analysis in order to compare Costa Rica and the remaining countries in Central America with an industrialized country with a high level of equality in economic terms. Unfortunately, it was only possible to find the GINI indicator from 2000 for Sweden, measuring 25 GINI units. Nonetheless, this is sufficient to discuss the Central

American GINI indicators and contrasting these to an industrialized and economically “equal” country.

As can be seen in table 2 (Appendix A), the GINI indicators for Costa Rica over the period 1991-2009 were relatively steady, between 45 and 50.9, nevertheless with higher inequality in 2009 (50.7) than in 1991 (46.7). In comparison with the remaining Central American countries, Nicaragua had the lowest GINI indicator of 40.5 in the 2005, and Belize and Honduras the highest rate of inequality: 61.3 in 1994 for Belize, and 61.3 in 2008 for Honduras. In comparison with Sweden’s 25 all of the Central American countries have relatively high rates of inequality (table 2, Appendix A). It is, however, crucial to remember that even though Nicaragua had the lowest rate of inequality in 2005, this does not mean that the average Nicaraguan resident is better off in economic terms than Costa Rica which has a higher rate of economic inequality. It simply means that, in financial terms, the wealth is more equally distributed in Nicaragua but the Costa Ricans may still be better off in economic terms, given their significantly higher GDP per capita PPP, which will be discussed next.

Together with Panama, Costa Rica ranks among the highest in Central America in terms of average income per person, adjusted for purchasing power parity. This is measured by GDP per capita PPP, constant 2005 international \$, in order to control for inflation and to have the year 2005 as a bench mark. GDP per capita PPP, constant 2005 international \$, is shown in Graph 3 (Appendix A) for the Central American countries, time period 1980 – 2010. It is clear that Nicaragua, Honduras and Guatemala have maintained the same level of wealth for person in the time period and that El Salvador and Belize have increased their average wealth per person in purchasing power terms, mainly from the 1990s and onwards. Costa Rica and Panama were the two countries in Central America with the highest wealth per person over the period 1980-2011, and considerably higher than the remaining five. Furthermore, Panama overtook Costa Rica after 2007, and its GDP per capita PPP soared to \$ 13,765 in 2011, whereas Costa Rica’s was \$10,735 in 2011. The remaining five countries in Central America had a GDP per capita PPP (constant 2005 international \$) of \$3500 - \$6,000, which is remarkably lower than Costa Rica and Panama (Graph 3, appendix A).

6.2 Economic growth, life expectancy and stability

With regard to the economic growth – measured as annual percentage GDP growth – of the Central American countries, the economy of Costa Rica has been one of the least volatile in the region. Costa Rica has faced only minor economic recessions during the period 1980 –

2011, and maintained positive growth rates for the period 1983 – 2008 – a period of 26 years. Most of the Central American countries have experienced positive growth rates for the period 1980-2011, and some even two-digit growth rates (Appendix A, table 4). When comparing Costa Rica with its neighbouring countries, Panama and Nicaragua, it appears that Costa Rica has been relatively stable. Panama and Nicaragua both faced steep downturns in their economic growth rates between 1986 and 1989, with -13 % and -12%, respectively (Graph 5, Appendix A),.

With regard to life expectancy, Central America has experienced significant improvements since 1980. The difference between Sweden, a developed country, and the four least developed countries in Central America has narrowed considerably in the past 30 years. In 1980, the life expectancy for Honduras, Nicaragua, Guatemala and El Salvador was approximately 57 years, but increased to approximately 72 years in 2011 – an increase of 26% (Appendix A, graph 6). Sweden increased its life expectancy from 75.7 years in 1980 to 81.5 years in 2010 – an increase of 7.6%. Costa Rica increased its life expectancy from 72.5 years in 1980 to 79.3 years in 2011 – an increase of 9.4% - and thus only 2.2 years lower than that of Sweden. Furthermore, Costa Rica was the country with the highest life expectancy in Latin America throughout the period 1980 – 2011 (Appendix A, graph 6). In sum, it appears that Costa Rica has increased its living standards, its life expectancy and its relative wealth per person in terms of purchasing power parity. Costa Rica still has a somewhat high figure in terms of inequality, albeit not as high as most other countries in Latin America. Next, we will take a closer look at the governmental and financial institutions that has underpinned the Costa Rican economy, and discuss whether or not these could have impacted its economy, stability and wealth.

6.3 Government objectives

There could be several reasons why Costa Rica has been a relatively stable economy in the past 30 years, with annual GDP growth that has mostly been positive. First, Costa Rica abolished its army in 1949, and was the only country in Central America that managed to stay neutral in the political turmoil of the 1980s in the region (Alvarado&Charmel, 2002; *Uppsala Conflict Data Program (UCDP) Costa Rica, 2002*). Also, Costa Rica has long been a peaceful democracy in contrast to its neighbouring countries (*Costa Rica, 2002*). One of the main objectives of the Costa Rican government has, for many years, been to strengthen its relations with foreign countries through trade - and also to focus on human rights and peaceful

relations. Furthermore, the Costa Rican government has been especially focused on sustainability and the environment, and as such it has sought to implement policies domestically to enhance agricultural methods and lead economic activities in the direction of sustainability – financial as well as environmental. These efforts have been further supported by the participation of NGOs and Costa Rica's openness to international collaboration (*Ministerio de Relaciones Exteriores y culto de Costa Rica*, 2013). The economic growth rates and the economic development of Costa Rica have been faster than most of its Central American neighbors (*Country Profile – Costa Rica*, 2011). This indicates that the role of governments in facilitating and strengthening the transformation process in the economy could be of utmost importance.

With regard to market dynamics, the government principles in Costa Rica seem to have affected its trade policies. The government has sought to implement these principles in several ways. First, the emphasis on a fair distribution of coffee incomes has been the ultimate starting point for forming the methods of paying coffee farmers – coffee is the most grown agricultural product in terms of areas cultivated in Costa Rica (Bertsch, 2006; Wollni&Zeller, 2007). Second, the government has proactively supported the development of non-traditional export products. These efforts have strengthened the competitive position of the local farmers that were already experienced in non-traditional export products, such as the chayote – the 'vegetable pear' (Saenz&Ruben, 2004). Third, the national rural development institute - 'Instituto de Desarrollo Agrario' – seeks to organize smaller agricultural producers in a way that improves productivity and makes product delivery to food retailers faster and better organized. Farmers are able to receive financial credit which makes them better capable of acquiring new technology, improving production methods and expanding their businesses (Saenz&Ruben, 2004). Furthermore, the Costa Rican government has sought to promote exports and invest in education, in contrast to other Central American countries that have used their financial resources on military (Alvarado&Charmel, 2002). Hence there are many indicators that the institutions in Costa Rica has succeeded in creating favorable conditions for investment and entrepreneurial activity, as Rodrik (2000) claims are conducive for growth.

Furthermore, the participatory role of institutions that Rodrik (2000) emphasizes appears to be the case of the dynamic markets in Costa Rica. Nevertheless, Rodrik (2000) also claimed that socially beneficial conditions are as necessary as economically beneficial conditions to create welfare and growth for a country's citizens. This social aspect of Costa is yet uncertain at this stage in our analysis, but we shall return to it in the discussion part. It is possible that

institutions can effectively underpin investment activities, entrepreneurial and favorable terms of trade but neglect Rodrik's aspect of social insurance – thus leaving us with a somewhat ambiguous impression on Costa Rica's agricultural structural transformation in relation to equitable growth. It is obviously difficult to decide whether the policies and principles implemented by the Costa Rican government has actually yielded higher productivity, more efficient integration of small-scale farmers and higher economic growth.

In the case of Costa Rica, the transformation refers to the development of its agricultural food markets and the transformation of its food retail sector. Timmer (2005) underlined the importance of continuously generating knowledge and strengthening the transformation process through the acquisition of human capital. By building strong relations – or even “linkages” – to actors in foreign countries, it is plausible that the Costa Rican government has invested its efforts intelligibly and sustainably. It could even be argued that the abolition of its army more than 60 years ago laid the foundation for building and maintaining strong relationships with other countries, as well as engaging in knowledge exchange through those relationships. Thus, the liberalization of markets, which was initiated in the early 1990s is likely to have smoothed the transformation process by building relations of economic and political character with foreign countries and foreign actors. Notwithstanding this advantage, it only refers to the macro-economic aspect of Costa Rica's economic development and growth. It does not take into consideration how and why regions or communities within the country might differ substantially in the extent to which they are a part of the market integration, growth and development.

6.4 Demographic changes and labor market dynamics

A significant challenge remains in reducing poverty in Costa Rica. Despite economic growth, agricultural development and participation in international trade in the past 20-30 years, Costa Rica appears to be struggling in reducing the percentage of its population living below the national poverty headline. During the 1990s the percentage of the population living below the national poverty headline fell from 33.1% to 23.1% in 2000 (Figure 7, Appendix A). However, the percentage of the population living below the national poverty headline gradually fell to 19% in 2007 but increased to 24.8% in 2011. As such, the percentage of the population living below the national poverty headline was higher in the year 2011 than in most of the years in the period 1992-2011 (Figure 7, Appendix A). It appears that Costa Rica

has managed to embrace growth and trade expansion but is yet to overcome the task of connecting the poor part of its population to its economic growth.

In the period 1992-2009, the percentage of the total workforce employed in agriculture fell from 24% in 1992 to 14% in 2011, which is a 42% decrease in a 17-year time period (Figure 9, Appendix A). In the period 1992-2011 the percentage of the population living in rural areas fell from 45% in 1992 to 37% in 2011, which is a 17% reduction in a 19 year time period (The World Bank Databank, 2013). These figures support our earlier assumption about the demographic changes in Latin America, with people moving from rural to urban areas. However, it is interesting to note that the proportion of the workforce employed in agriculture fell more drastically (42%) than the proportion of the population living in rural areas (17%). The figures indicate that although people continue living in rural areas they do not necessarily gain their living by means of agriculture – at least not officially. This could either be because agricultural production in itself is becoming more efficient, requiring less labour to complete the tasks. The large decline in agricultural employment relative to the decline in people living in rural areas could also indicate that fewer jobs are available in agriculture. Hence, small-scale agricultural producers are pushed out of their agricultural business, but remain living in rural areas with no jobs available. Either the proportion of the workforce that leave the agricultural industry find employment in services or industry, or they simply become unemployed – thus contributing to poverty.

The demographic transition in Costa Rica could also indicate that urbanization has yielded higher demand for labour with specific skills in services, transport and the public sector in urban areas. From 1980 to 2012, the percentage of the population residing in rural areas fell from 57% in 1980 to 35% of the total population in 2012 – likewise, the urban population increased from 43% in 1980 to 65% of the total population in 2012 (The World Bank Databank, 2013). Moreover, the ratio of female to male labor participation increased from 39% in 1990 to 59% in 2011 (The World Bank Databank, 2013). With regard to employment in the country's various industries, significant changes have taken place in the composition of employment in industry, services and agriculture. In the period 1992-2011, the percentage of total employment working in agriculture fell from 24% in 1992 to 14% in 2011, whereas the percentage of total employment working in the service sector increased from 49% in 1992 to 66% in 2011, and industry employed 26% of the workforce in 1992, and 20% in 2011 (Figure 9, Appendix A). As such, it is plausible that the demographic changes, by means of urbanization and the increase of women participating in the work force gradually imposed

effects on the composition of the labor market, agricultural production schemes and food retail. We will discuss the effects of urbanization and increasing living standards on the agricultural food markets in more detail in the discussion section.

6.5 Agricultural food markets and its sub-sectors

In 2010, the GDP composition of sectors in Costa Rica was as follows: Agriculture 6%, Industry 23% and Services 71% (figure 8, Appendix A). Bananas, pineapples and coffee account for nearly half of the exports in agriculture; followed by palm oil, melons and sugar cane. (*Country Profile – Costa Rica*, 2011). Coffee remains the most important agricultural crop in terms of size of agricultural land cultivated (Bertsch, 2006; *Costa Rica*, 2002). In 2002, 113,130 hectares were cultivated for coffee production out of a total of 434,524 hectares dedicated to agricultural crop production, which means that 26% of the total area cultivated in Costa Rica is dedicated to the production of coffee beans (Table 10, Appendix A). After coffee, rice and sugar cane are the second and third most important agricultural crops, respectively, in terms of the size of agricultural land cultivated. Next, we will investigate the expansion of a number of sub-sectors in Costa Rican agriculture and discuss how and why these have been successfully developed despite competition, over-supply and so forth.

6.5.1 Coffee

Coffee farmers in most parts of the world have faced serious challenges in staying competitive and making profits in recent years. One of the reasons for this is the over-supply of coffee relative to demand globally, and the following decline in coffee prices worldwide. Nonetheless, several possibilities for re-gaining competitiveness and profits have unfolded as the demand for coffee – especially from the Western world – is becoming more diverse and focused on specific features in coffee such as fair trade, organic production and gourmet quality. Hence, specializing in any or several of these three features has opened a window of opportunity for engaging in specialization and differentiation for coffee farmers. Wollni&Zeller (2007) identify this opportunity as the emergence of “specialty markets” (p. 243). Wollni&Zeller (2007) conducted a research study in Costa Rica in which they investigated whether coffee farmers benefitted from participating in the specialty market

segments and coffee cooperatives. They found that the participation of coffee farmers in specialty market segments (organic, fair trade, gourmet) made farmers receive higher prices than farmers producing “regular” coffee – therefore, product differentiation was found to be beneficial from an economic and a competitive point of view. Furthermore, Wollni&Zeller (2007) found that the participation in cooperatives (not to be mistaken with market segments) increased the probability of 1) coffee farmers participating in specialty market segments and 2) coffee farmers receiving a higher price for their coffee due to the enhanced bargaining power that small-scale coffee farmers achieve through the participation in cooperatives.

6.5.2 Chayote

From 1993 to 2002, there have been considerable increases in the number of hectares dedicated for specific types of agricultural crop production. The vegetable pear, “chayote” saw a 152% increase in the size of agricultural land cultivated for its production from 1993 to 2002, whereas pineapple increased 121% and oil palm 59% (Table 10, Appendix A). The Costa Rican government has specifically sought to enhance the production of non-traditional agricultural products in order to differentiate production and gain a stronger competitive position relative to other Latin American countries. One of these non-traditional agricultural products is the chayote vegetable. In 2004, 80% of the chayote vegetables grown in Costa Rica were exported to foreign markets (Bertsch, 2006). Bertsch (2006) argues that chayote exports have increased due to several reasons. First, the establishment of linkages between agricultural chayote producers and national and international brokers, through packers and processors, have turned out to create links to the dynamic international market. The crucial function of the packers and the processors ensure that quantities of chayote are large enough to be exported to foreign markets – thus ensuring that small-scale chayote growers can participate once the connection to the packer is established. Second, the financial institutions in Costa Rica have given farmers access to credit, market information and technical assistance which have considerably improved the financial as well as the competitive position of farmers with smaller-scale production. Third, the small-scale producers often possess land with better soils and are more experienced with the cultivation of chayote. Fourth, family labour means that the small-scale producers are less vulnerable to the availability of additional labour during harvest seasons (Bertsch, 2006). Furthermore, it appears that the target of specific non-

traditional agricultural products by the Costa Rican government have facilitated a competitive position in the field of that particular sub-sector relative to foreign markets.

6.5.3 Cattle production and beef supply chains

In his PhD dissertation Balsevich (2006) specifically investigated how cattle producers in Costa Rica (and Nicaragua) could gain access to dynamic food markets, and how this in turn would affect their production schemes as well as possibilities for expanding their businesses. Balsevich (2006) discussed the influences of institutional settings on the transformation of the agricultural food markets, along with reflections on the positive and negative consequences of institutional change. Balsevich adopted a market integration approach to his analysis, and focused on the vertical coordination of production and marketing, as well as on the market channels that the beef supply chains were a part of. The four agents that Balsevich identified in the beef supply chain in Costa Rica were: 1) supermarkets, 2) wholesaler, 3) processor and 4) producer that concurrently formed three linkage points. In comparing Costa Rican beef supply chains with those of Nicaragua, the Costa Rican supply chains and their market channels were organized, structured and concentrated in a more effective way than those of Nicaragua. First, 80% of the amount of cattle for beef production in Costa Rica was handled by three major processors, in contrast to several small- or medium processors in Nicaragua. Second, the Costa Rican government has implemented high requirements for safety which has made the number of small rural plants decrease considerably. Third, economies of scale has given larger processing plants a competitive advantage over smaller processing plants. Finally, food safety standards are much more homogenous in Costa Rica than in Nicaragua where smaller processing plants located in remote and rural areas make it more difficult to enforce safety standards (Balsevich, 2006 p. 75) All in all, it appears that the Costa Rican government has implemented standards that were effective in ensuring quality and timely delivery of cattle relative to that of Nicaragua

However, these developments have also resulted in smaller cattle producers and/or processors being driven out of business, or losing competitiveness relative to larger processing plants (Balsevich, 2006). Nonetheless, the emergence of auctions for cattle sale in Costa Rica have proven beneficial for suppliers as well as buyers: farmers of various sizes bring their cattle (whether it is three or 50 creatures) to the auctions where cattle are sold to processors and transported to the subsequent agent in the beef supply chain. The Costa Rican government has

imposed very specific rules and regulations for the cattle auctions such as health and sanitary conditions, minimum weight of each cattle creature and price transparency throughout the auction (Balsevich, 2006).

As such, the cattle auctions in Costa Rica play the role of **linking** smaller cattle producers to important agents in the beef supply chain, such as processors and wholesalers. Furthermore, it has decreased the threat for smaller cattle producers of being excluded, or disconnected to the dynamic food markets due to higher transportation costs faced by these. The role of the auctions become critically important in linking dynamic food markets to the smaller-scale farmers (= linking growth to the poor) as the cattle auction markets function as entry point to the larger segments of the agricultural food markets for small cattle producers. These might, otherwise, have been excluded from the food markets, or faced significant challenges in creating a connection to processors, or similar agents in the beef supply chain.

Beef supply chain in Costa Rica

(Entry point) Auction markets -----→ Processors -----→ Supermarkets

Source: Balsevich (2006)

Balsevich (2006) outline the merits and shortcomings of the changes in the mechanisms that form the beef supply chains in Costa Rica. On the one hand, he points to several obstacles that have been overcome as a result of the more effectively organized and structured cattle sales, such as year-round market that offers competitive prices and enforcement of quality standards. On the other hand, Balsevich (2006) points to the higher quality standards as posing a threat to cattle producers that fail to comply with these, and therefore exclude farmers. Although Balsevich (2006) underlines a valid negative effect of the agricultural market development, the exclusion of specific, uncompetitive farmers might, in the long run, hinder additional negative effects to spill-over to the larger segments of the cattle industry in Costa Rica. Despite the fact that exclusion of farmers constitutes a challenge to integrating small-holders into the dynamic agricultural food markets, there could be several reasons why the exclusion – in this specific case – has certain positive aspects. First, the entry and exit of producers in the cattle industry, or any other industry, is a natural process of strengthening competitiveness and enhancing market dynamics. Producers come and producers go, and the forces of the competitive market drive out those farmers that do not comply with the required

standards. Second, if cattle producers that do not comply with health and sanitary requirements are allowed to sell their cattle to the domestic food markets, or even the international food markets, this could have severe and negative effects on the cattle production in Costa Rica. Selling cattle meat that fails to comply with health and sanitary requirements to domestic and international markets could significantly increase the risk of disease and/or unsatisfied consumers. This would worsen the reputation of Costa Rica's meat exports, which would substantially worsen the future prospects of meat exports and the overall competitiveness of the country. For these reasons, the one negative consequence of higher quality requirements and more effective enforcements of health and sanitary requirements have several positive effects for the meat industry in Costa Rica.

6.5.4 Cooperatives

Cooperatives in the agricultural food markets have long existed in Costa Rica, and continue to develop as markets expand, change in structure and new mechanisms affect both supply and demand. Cárdenas&Mora (2012) argue that the formation of cooperatives has become a synonym to democratic values and fair procedures in the agricultural food markets in Costa Rica. In Costa Rica alone, 700,000 people are active members – “cooperativistas” – in cooperatives; equivalent to 15% of the entire Costa Rican population (Cárdenas&Mora, 2012). The national institute for cooperative development (INFOCOOP) is the organizational institution in Costa Rica that provides technical assistance, promotion and financial advice to cooperatives, which has proven especially helpful in remote agricultural areas where farmers would have otherwise faced significant difficulties in getting *continuing* access to electricity, information and up-to-date agricultural market information. The national council of cooperatives (CONACOOOP) seeks to integrate the cooperative movements into the various agricultural food sub-sectors, thus striving to integrate agricultural producers of various sizes and scales into the dynamic agricultural market (Cárdena&Mora, 2012). In this way, two independent institutions handle different aspects of agricultural market integration. Furthermore, the emergence of organic agricultural products was off-set by initiatives by small-scale producers in many parts of Costa Rica in the early 1990s, supposedly as a response to the ongoing difficulty of staying competitive in agriculture, relative to other agricultural producers nationally – but certainly also relative to agricultural producers in foreign countries (Bertsch, 2006). As a response to these initiatives, the Costa Rican

government introduced new laws for labeling products “certified organic” in the year of 1995 along with guidelines to achieve organic agricultural production (Bertsch, 2006).

Despite the advantageous of the emergence of cooperatives, Wollni&Zeller (2007) question whether it is desirable to make all coffee growers to specialize in specific quality coffees (e.g. fair trade, organic or gourmet) or if it would be more effective to let market forces drive the least productive coffee farmers out of business and thereafter specialize in other agricultural products. Obviously, for a strategy to be sustainable it needs to be sustainable from a competitive *and* economic point of view, and not only from an equitable perspective. Furthermore, the identification of new production possibilities for smallholders could turn out to be the ultimate factor that makes small-scale farmers grow and prosper in the long run, such as in the case of chayote (vegetable pear) production of small farmers. Wollni&Zeller (2007) maintain that cooperatives can support this process, and help to identify whether the current supply of specific agricultural products corresponds to demand. Moreover, Saenz&Ruben (2004) argue that institutions possess the ability to strengthen the incentives to invest in agricultural sub-sectors by making financial credit available for agricultural producers, regardless of size or diversity of their production, and make it easier for these to obtain technical assistance and market information. The attention to market dynamics and efforts to continuously adjust to these are indeed critical aspects that market institutions and cooperatives can seek to enhance.

6.5.5 Organizational initiatives – EARTH University

During a personal visit to EARTH University in Guácimo, Limón region of Costa Rica, the acting vice president of development of EARTH University, Gerardo Mirabelli (Mirabelli, G. 2012, pers. Comm. 24 July) explained the university’s engagement in striving to build links between the agricultural food markets and the small-scale producers. The university’s work in this field can mainly be described as an “organizational initiative”. Although the organizational work in itself is highly complex and involves many different actors in the small agricultural communities of the Limón region, the overall objective of the organizational efforts is to integrate as many small farmers into the larger dynamic agricultural market as possible; to increase productivity and enhance agricultural innovation (Mirabelli, G. 2012, pers. Comm. 24 July). One example of this was the production of milk: many small-scale farmers in Costa Rica are engaged in the milk production, but are facing difficulties in staying

competitive and increasing productivity in the wake of larger-scale farmers. The community projects were explained by Fabian Campos, responsible for community projects at the community development program of the university. EARTH seeks to engage these small, disadvantaged farmers in a larger production framework and help them develop tools to become more competitive and productive (Campos, F. 2012, pers. Comm. 24 July). The geographical distance between some small farmers and comprehensive infrastructure makes the participation in larger market segments extra difficult. EARTH strives to build bridges between small-scale farmers, remote agricultural communities and the larger dynamic markets. Hence, the university acts as a dynamic linkage point in the integration process of small-scale farmers.

Among many objectives, EARTH seeks to organize and make more effective the production of milk by concentrating cattle for milk production in medium- to large communities, and increase productivity growth in the agricultural production of banana, pineapple etc. in other smaller communities. In this way, it is possible to develop production schemes that are more effective in terms of increasing the scale of production and controlling product quality – but also in terms of developing new methods for building stronger agricultural communities that possess the tools to increase productivity growth, develop new products and adjust to changes in the agricultural dynamic markets (Campos, F. 2012, pers. Comm. 24 July). So far, the small-scale farmers have been open to new changes and developments which puts the organizational initiative of EARTH University in an advantageous position in terms of connecting the poor to growth. By combining agricultural production with agricultural research facilities, students and lecturers at the university collaborate in research studies that pursue to develop new methods of increasing productivity, quality and efficiency in the production (Mirabelli, G. 2012, pers. Comm. 24 July). Lastly, the university has developed agreements with wholesalers that buy the agricultural products and sell them to the larger supermarket chains in the country. Moreover, a considerable proportion of the university's banana production is exported to foreign markets (Mirabelli, G. 2012, pers. Comm. 24 July).

All in all, EARTH University has contributed remarkably to the integration of small-scale producers in agriculture, and they are continuously developing new methods, processes and linkages to crucial agents in the food retail markets. Therefore, their role in the structural transformation of the agricultural food markets could appear to be very important for productivity growth and competition in the future – and the three first aspects of sustainability, outlined by Berdegué et al. (2008). The organizational initiative of EARTH

could be argued to fulfill the second and third requirements for completing the structural transformation process in agriculture, proposed by Timmer (2005&2006). Timmer maintains that the generation of human capital – in this case by means of generating knowledge, innovation and links within and between agricultural communities – is critically important in making the structural change in agriculture sustainable. Timmer also emphasizes the inclusion and integration of small-scale producers into the agricultural economy in making as many agricultural producers competitive as possible. In other words, Timmer indirectly dismisses the assumption that “one tide lifts all boats”, but instead focuses on the inclusion of the poor into a larger, dynamic market framework as a requirement for poverty alleviation in the long run. In addition, the organizational integration projects by EARTH underline the importance of the vertical market integration and strategic cooperation between agents in agricultural sub-sectors, proposed by Dirven (2001). Although the full effects of EARTH’s agricultural integration programs are yet to be seen, the prospects of it are very promising – socially, economically and competitively.

6.5.6 The emergence of supermarkets in Costa Rica

The diffusion of supermarkets in Costa Rica has been quite remarkable in speed, scope and effects within the last 20-30 years. The supermarket sector itself has developed from a smaller retail segment of minor importance in the 1980s that mainly consisted of cooperatives in the capital of San José, to a major retail segment in the Costa Rican economy dominating 50% of national retail in the early 2000s. The increase in the number of supermarkets was the fastest from 1990 to 1995, where the total number of supermarkets increased from 113 to 211 – an 86.7% increase in only five years (Alvarado&Charmel, 2002). In 2002, the total number of supermarkets in Costa Rica amounted to 227, with the two major supermarket chains, CSU (*‘Corporación de Supermercados Unidos’*) and CCM (*‘Corporación Centroamericana de Mercados’*) owning 97 and 63 of the stores, respectively (Alvarado&Charmel, 2002). To investigate how and why the diffusion of supermarkets in Costa Rica was so rapid and extensive it is crucial to identify the leading drivers in the process. Interestingly, the formation of the largest supermarket chain, CSU, commenced in 1960 and was financed with domestic capital. It was neither a result of FDI coming into Costa Rica nor was it financed with foreign capital. In 2002, CSU owned four different supermarket chains that each target different

groups of consumers by means of varying product ranges, prices and quality – i.e. ‘Palí’ for lower-income consumers, and ‘Hipermás’ for medium-income consumers (Alvarado&Charmel, 2002). Although CSU was formed in Costa Rica it also operates supermarkets in Nicaragua and Honduras, totaling 130 supermarkets in 2002, and it is now under strategic management of the Central American Retail Holding group (CARCHO) which develops marketing plans, business strategies to respond to changes in the market.

According to Reardon&Berdegué (2002), the wholesaler *Hortifruti* in Costa Rica have managed to create contacts to 500 fruit and vegetable farmers, 80% of them being defined as ‘small’ producers in agriculture. Thus, Hortifruti have contributed to integrating a larger number of farmers into the larger market that might otherwise face exclusion. It is plausible that both the supply- and the demand sides will benefit substantially from these changes if an increasing proportion of the agricultural farmers in Costa Rica is integrated into the markets. Similarly, the social and economic aspects of economic growth and development are likely to strengthen one another along these changes. Supermarkets will be able to reduce costs, improve product quality and management tools. Collaboration and networking between small-scale producers can help make the production become more homogenous, and live up to quality and delivery requirements (Reardon&Berdegué, 2002).

In sum, supermarket chains possess the possibility to create beneficial links to overseas food markets, potentially creating linkages all the way from the small-scale agricultural producers in domestic agricultural markets to the foreign buyers of agricultural food products. According to Reardon&Berdegué (2002), the agricultural food markets in Latin America that have managed to embrace the forces of globalization and respond to the changes that the diffusion of supermarkets have incurred are the most successful ones. Moreover, these agricultural food markets have experienced remarkable growth and development. Contrary, the exclusion of small farmers is – by and large – a result of a failure to respond to these changes in time, hence making it even more difficult for the excluded small farmers to “get back in the game” once they are excluded and disconnected from crucial supply chains. Therefore, (Reardon&Berdegué, 2002) advocates policy design that allows institutions to respond in time to changes in the agricultural food markets.

7. Concluding analysis

7.1 The drivers of the diffusion of supermarkets

The liberalization of markets in Latin America and the rest of the world from the early 1990s have resulted in continuous changes in the structure of agricultural markets. The inflow of FDI to countries in Latin America is likely to have contributed considerably to growth and development, and especially to the diffusion of supermarkets. Interestingly, the transformation of the food retail markets from small- or medium stores to supermarket chains was not off-set by the FDI boom in 1990s. It was already initiated in the 1980s where mergers and acquisitions (M&A) in Mexico, Argentina, Brazil and Chile started to affect food retail and contribute to the emergence of supermarkets. M&As continued in the 1990s, were FDI gradually started to take over foreign investments in Latin America (Reardon&Berdegué, 2002). For Costa Rica, a few of the currently leading supermarket chains were founded already in the 1960s, but the rapid diffusion of these was not initiated until the 1980s. It is yet unclear whether FDI or national capital laid the foundation for the growth of supermarket chains, and it is plausible that it was a combination of the two. Cordero (2000) maintains that the formation of capital in Costa Rica in the 1970s and the 1980s came from foreign sources, and not from the national savings which makes the drivers of supermarket dispersion even more ambiguous. It is, however, likely that a combination of national and foreign capital, made the diffusion of supermarkets feasible. Nevertheless, the current supermarket chains in Costa Rica and Central America are owned and directed by investors from the Central American region – not by actors from the industrialized world. The forces that have driven the diffusion of supermarkets in Latin America is therefore likely to have been a combination of endogenous and exogenous factors, albeit the dominance of it today is endogenous.

7.2 The drivers of the development of agricultural food markets

Undoubtedly, the diffusion of supermarkets in Costa Rica has had profound effects on the restructuring of agricultural sub-sectors in the country, and the speed with which these transformed themselves. The combination of endogenous and the exogenous factors is likely to have concurrently formed the transformation of agricultural food markets from smaller, remote and less specialized to more specialized, better organized and concentrated in fewer locations. First, the demographic changes in Costa Rica appear to have constituted the most

considerable effect on the organization and concentration of agricultural food production. The urbanization, continuous increase in living standards and women entering the workforce from the 1980s till present have led to substantial changes in consumer behavior, type of goods purchased and location of purchase. Clearly, the change on the demand-side of food and retail purchases has created significant incentives to engage in the advancement, specialization, improvement and concentration of food retail by means of supermarket creation. Without the demographic changes in Costa Rica the “wave” of supermarket diffusion would most likely have been considerably less significant. Second, the changes on the supply-side of supermarket diffusion further fuelled the dissemination of supermarkets in speed and scope. It is, however, crucial to note that the changes on the supply-side succeeded the changes on the demand-side, as the demographic changes began a decade or two earlier than the liberalization of markets. The openness to FDI and foreign investment and the emergence of more advanced technology (refrigerators, procurement systems and advancement in supermarket management) in the 1990s spurred both competition and growth in food retail. Especially, the competitive forces of FDI flowing into Costa Rica’s agricultural food market sector is likely to have had considerable effects on various aspects of the transformation process in the agricultural markets. The institutional policies seeking to encourage the specialization in non-traditional agricultural products and the specialization in specific agricultural sub-sectors – such as coffee – are results of increased competition. Moreover, spurred competition required supply chains to become better organized, comply with the requirements of foreign buyers and respond to changes in foreign markets. All in all, the endogenous forces of demographic changes in Costa Rica laid the foundation for the emergence of more specialized, concentrated and more organized food markets. These developments were enhanced and affected by the wave of globalization and its exogenous forces of FDI, trade liberalization and spurred competition.

7.3 The challenge of connecting the poor to growth

Despite the many economic and developmental benefits reaped from the growing importance of supermarkets and the increasing concentration of food retail, several drawbacks remain. First, there are the current negative consequences of supermarket chains growing in size, importance and dominance in the Costa Rican food retail sector. The increased importance of specialization and differentiation within agricultural sub-sectors, such as coffee production

and non-traditional agricultural products, leave many small-scale farmers at a competitively disadvantageous edge. Although many farmers manage to adapt to the changes that the structural transformation of the agricultural economy generates, many other farmers fail to do so. The earlier discussed difficulty of obtaining information about the changing market dynamisms, or poor infrastructure in general, further exacerbates the competitive positions of the small-scale farmers. A certain proportion of those farmers “left behind” could be argued to constitute a logical proportion of businesses that exit a competitively dynamic market. In other words, small-scale farmers located in rural and remote locations somehow need to become connected and integrated to the national and dynamic market in order to make the structural transformation of the agricultural economy successful *and* sustainable.

7.4 The microeconomic aspects of sustainably growth

This is where the micro-economic aspects of institutional, organizational and financial sustainability in agricultural development and growth, presented by Berdegué et al. (2008) come into the picture.

The first aspect outlined by Berdegué et al. (2008) was **institutional sustainability**. In this regard, it appears that the Costa Rican economy, as well as its agricultural food markets, is underpinned by financial, governmental and economic institutions that seek to strengthen competitiveness, enhance growth and create the necessary *incentives* for growth, investment and development, as suggested by Easterly (Gundlach, 2002). Moreover, Costa Rica appears to be a forerunner in the aspect of institutional sustainability – at least in comparison with its Latin American neighbours. In view of the monetary volatility that characterized the Latin American region in the 1980s and 1990s, Costa Rica has implemented adequate monetary and financial policies to keep its economic growth stable and avoid major recessions, contrary to the region it is situated in. As such, Rodrik’s (2000) emphasis on participatory and responsive institutions applies to the Costa Rican institutional framework. Rodrik maintains that participatory institutions that adapt to economic changes as well as local differences will produce better economic results, which for the most part applies to Costa Rica’s agricultural economy.

However, it appears that several challenges remain for institutional sustainability to be complete. While it is beyond the scope of this thesis to discuss in depth and detail the social problems in Costa Rica, some of these undoubtedly spill-over to the economic and developmental prospects of its agricultural structural transformation. As suggested by Timmer (2005, 2006), some of the biggest challenges in ensuring an economically and socially sustainable structural transformation process in agriculture is connecting growth to the poor by means of effectively integrating small-scale agricultural producers into the economy. Given the earlier discussed aspects of the integration of agricultural markets and producers, this leaves us with a somewhat ambiguous perspective of the future of Costa Rica's agricultural structural transformation. On the one hand, a significant proportion of small-scale producers has managed to increase their competitive position by means of local knowledge, specialization and differentiation of their agricultural products. Some of these are even becoming competitive components of a promising agricultural economy, such as the communities operating under the supervision of EARTH University, the chayote producers and the specialty- coffee producers. On the other hand, another significant proportion of small-scale producers are left out of this promising growth equation.

Therefore, the **organizational sustainability** as outlined by Berdegué et al. (2008) appears ambiguous in the Costa Rican case of the agricultural transformation. Most certainly, the aforementioned organizational initiatives by EARTH and cooperative institutions are likely to prove sustainable from economic and social view points in the long run, given the supervision; managerial and technical expertise that support these. The critical question is, however, how far these initiatives will reach in developmental, economic and social terms in the long run. All the small-scale producers that are disconnected to those initiatives are clearly neither a part of organizational nor financial sustainability. Thus, the future prospects of developing agricultural food markets are likely to favor those already included in the dynamic food markets – whether small-, medium- or large-scale – whilst those that are disconnected will make poverty statistics increase and constitute a challenge to Costa Rica's long-term growth and stability, as suggested by Timmer (2005, 2006). The farmers that are excluded from the dynamic markets are likely to impose challenges for the competitive market economy in several ways. First, there are the obvious drawbacks of increasing poverty and the social problems that these will impose on society and the economy. Second, completion of the structural transformation process of Costa Rica's agricultural food markets is likely to be delayed as a result of the proportion of the Costa Rican population that does not reap the

benefits of its growth and development. Third, the farmers that could have been connected to the agricultural market dynamics – and thus contributed to the growth and development – constitute a major growth opportunity foregone for the Costa Rican society and economy. In other words, society as well as the economy misses out on potential contributors to growth, development and competition in failing to connect the growth to the poor. This is the main problem Timmer (2005, 2006) addresses in his assessment of why and how countries face continuing obstacles in making their agricultural structural transformation successful and sustainable. We will argue that this problem is most certainly the case for Costa Rica albeit its manifold advances in other aspects of agricultural food production and competitive advantages.

The third aspect of sustainability outlined by Berdegué et al. (2008) is **financial sustainability**. In terms of the marketing perspectives of developing and promoting its agricultural food markets relative to foreign markets, it appears that Costa Rica has managed to attract FDI, and further specialization through product differentiation. The external perspective of effectively adjusting to the requirements of foreign buyers and keeping up with globalization's changing demands to product quality, safety, hygiene and so forth seems to be advancing in financially sustainable manners. Although many of the Costa Rican government principles underline fair and equitable aspects of business management in the agricultural economy, it appears that the emphasis has been more focused on peaceful relation building, democracy, sustainability and human rights to build and maintain a positive image for foreign investors and collaborators. A very long way down the development path, Costa Rica is thus in an advantageous position in comparison with other Central American countries, which has already had positive spill-over effects for its economy and competitive position in the world – which in turn has created numerous incentives to invest in the country for national as well as foreign investors. So far, Costa Rica got the aspects of marketing, product development and PR right, which has resulted in many economic and competitive benefits. Nonetheless, there is a possibility that the magnitude of the aforementioned success could have been greater in scope and effects had a larger proportion of the population been included in the growth path.

Berdegué et al. (2008) could, with good reason, have added an additional aspect of sustainability to the four they deemed necessary for agricultural development projects to be fully successful: **social sustainability**. The 'loss' of the proportion of farmers that live in poor or competitively unfavorable conditions is likely to have limited the scope for making the agricultural economy grow and prosper given these farmers' limited connection to the

dynamic markets. The internal perspective of making market dynamics adaptable to various local conditions in Costa Rica's agricultural markets has thus only been partially successful. The disconnection of poor farmers is likely to have been partly caused – and aggravated – by the development path of some successful agricultural farmers that dominated productivity and competition from an early start. The socially unfavorable conditions are now a reality for a continuously increasing share of the Costa Rican population. The rate of inequality is high, and almost 25% of the population lived below the national poverty line in 2011. These figures are high, even compared to the remaining Central American countries, and they have been increasing during the past 10-20 years.

7.5 The ambiguous effects of institutional settings on equity and welfare

Part of the reason for the inequality and the rise in poverty levels is likely to be found in the set of government policies that distribute land and resources to farmers. First, Cordero (2000) claims that the Act establishing the budget authority gives the Costa Rican government the liberty to utilize the surpluses generated by the state-owned enterprises. This creates a certain degree of bias in the competitive market dynamics seeing as capital is prevented from accumulating in these sectors. Cordero (2000) maintains that the markets would become more competitive and equitable in the absence of this Act. Second, Bertsch (2006) argues that the Costa Rican government's policies on land distribution and the dispersion of resources are inequitable – and even discriminatory against poor farmers. Thus, the integration of poor and small-scale farmers into the economy has – according to Bertsch (2006) – failed due to the fact that laws and legislation, by and large, empower the farmers that are already in a competitive and economically strong position in the agricultural economy but neglects those that are not. Although problematic to identify the exact reason for poverty and inequality issues, the policies that govern the distribution of wealth and resources (land) are probable causes.

Bertsch (2006) presents valid and relevant critique in terms of addressing the socioeconomic challenges that Costa Rica faces in including small-scale farmers into the economy. On the one hand, the disconnection of small farmers constitutes an obstacle for the overall agricultural transformation to become fully complete – both in economic and developmental terms. On the other hand, the institutions that underpin the agricultural markets only affect production, growth and development to limited extents. The view points of Bertsch (2006)

somehow lose credibility when considering the cooperative movements in the country, the well-functioning of the beef supply chains and the organizational initiative of EARTH University. The institutions INFOCOOP and CONACOOOP have been conducive for a socially and economically beneficial structural transformation within the agrarian economy of Costa Rica. The participation of these institutions in the structural transformation in agriculture appears to have been rewarding for the participating small-scale farmers, the remote communities – and even for the competitive dynamics of finance, productivity growth and management. It is therefore plausible that Bertsch (2006) have identified a significant drawback in the institutional policies that govern the distribution of wealth, but that he has failed to take into consideration the more advantageous institutional initiatives and development programs.

The organizational initiatives of EARTH University in the Limón region of Costa have considerably contributed to several aspects of sustainable development and growth. First, the organization of small-scale producers that reside in remote local communities has functioned as a crucial linkage point for these in becoming connected to growth, as necessary according to Timmer (2005, 2006). Second, the concentration of small-scale farmers' production increases the size of the output and makes it easier to transfer to the next link in the supply chains, e.g. the wholesale agents. Third, the continuous research in horticulture and agricultural methods at EARTH University is likely to yield significant beneficial outcomes for small-scale farmers, sustainability, productivity growth and competitiveness – now and in the future. Lastly, the infrastructure within the university makes it possible to obtain crucial market information, which would otherwise have been difficult for the small- and medium farmers. As such, EARTH University facilitates information sharing and knowledge exchange as well as it continuously adapts to the changing requirements in the dynamic markets – national as well as international. Notwithstanding these positive aspects of a promising organizational initiative in agriculture, the full effects of the inclusion of small communities into the markets are yet to be experienced. Given that it takes time to effectively concentrate production of small-scale producers in one location, identify product opportunities and obstacles as well as allocating resources efficiently, the full time-span of the integration program at EARTH is predicted to be between ten and twenty years (Mirabelli, G. 2012, pers. Comm. 24 July). In other words, the total outcome is yet to be seen.

7.6 Future prospects of the agricultural structural transformation

In the wake of our analysis of the continuous changes taking place in Costa Rica's agricultural food markets, the critical question is what impacts these changes will have on the economy, both in the short and in the long term. In many ways, it appears that Costa Rica is a forerunner in terms of economic growth, development and competition in its agricultural economy relative to the Central American region. The openness to foreign trade, cooperation with foreign actors in trade and development and a focus on economic and political stability seems to have supported the country – at least in terms of attracting investment and maintaining political peace and a stable economy. Notwithstanding the many advantages in economic and developmental regards, several obstacles remain. The rate of economic inequality is high, even compared to remaining Central America, and Costa Rica faces continuing difficulties in minimising its poverty rate. In terms of agricultural food farmers, the aspects of inequality, poverty and growth appear somewhat ambiguous. The lack of statistical figures as to how many agricultural farmers are fully integrated in the dynamic agricultural economy leaves us with a number of questions that are difficult to succinctly answer. On the one hand, the process of the agricultural structural transformation is – currently – still progressing, developing and transforming the economy. Therefore, the full effects of it are yet to be seen. On the other hand, the participation of various agents, actors and institutions at regional and local levels are promising aspects of the transformation process. The use of local knowledge and competitive advantages by EARTH University as well as chayote, coffee and beef producers in making products and agricultural sub-sectors more competitive and productive all appear conducive for sustainable and equitable growth. Furthermore, the process of vertically integrating markets and activating crucial actors in the agricultural food markets by cooperative movements and the wholesaler Hortifruti indicates that action at various levels of the agricultural economy is needed to enhance the transformation process and make it sustainable – both in economic and social terms.

In view of the institutional initiatives that have shaped and affected the integration of agricultural producers of various sizes, these are likely to have had a more critical impact on the structural transformation than the governmental principles and legislations that merely lay the foundation for the economic environment. Furthermore, the actors in the private sector - such as supermarkets and wholesalers –have contributed significantly to the restructuring of the agricultural food economy, ranging from agricultural food production schemes to the linkages that form the new dynamic food markets. In sum, the emphasis of Chiriboga (2007)

on leadership, organization and the forming of linkages most certainly applies to these emerging structures in the Costa Rican agricultural economy. This leaves us with the conclusion that a new transformation of the agricultural markets, its structure and leading actors is indeed taking place in the country, and that this transformation is far from over yet.

The future prospects of the structural transformation depends, by and large, upon the extent to which organizational initiatives, integration projects and actors in the private sectors can reach the poor, small-scale farmers that reside in remote locations of the country and manage to effectively integrate these into the larger agricultural markets. So far, many of the current developments within the agrarian economy appear promising from economic, developmental and social perspectives. Supermarket chains possess the potential to facilitate this integration process, which is already witnessed with several of its new production and wholesaler arrangements. Nonetheless, the full magnitude of the influence of supermarket diffusion is to be experienced in the future.

8. Main findings

A restructuring of production schemes is currently taking place within the agricultural food markets in Costa Rica, along with the creation of new linkages and increased concentration of production to fewer locations. Several organizational initiatives emerge that appear conducive for sustainable growth, enhanced competition and poverty reduction. The full effects of these changes on the social, developmental and economic aspects of the agricultural structural transformation appear promising yet somewhat ambiguous. Whether or not organizational initiatives, cooperatives and influential institutions will manage to reach out to a proportion of the poor population that is significant enough to effectively decrease poverty and inequality remains uncertain. Many favourable aspects and new opportunities are currently emerging in the agricultural sub-sectors, which indicate considerable scope for growth and development in the agricultural food markets in Costa Rica. The active and responsive approach to changes in foreign markets appears conducive for growth; yet the social issues of poverty and inequality, nationally, should not be overlooked. Essentially, new and innovative processes of integrating small-scale farmers into the dynamic agricultural economy could function as the crucial starting point for reducing poverty in the long run. In view of the successful initiatives at local and regional level in Costa Rica, it is highly likely that the most effective drivers of change

are to be found in actors and institutions possessing local knowledge. Eventually, these drivers are critically important for completing the agricultural structural transformation process. In conclusion, we are yet to experience the magnitude of the effects of initiatives at the local, regional and national level on productivity growth, competition and poverty reduction in the future agrarian economy of Costa Rica.

Reference list

- Acemoglu, D., Johnson, S. & Robinson, J. 2004, 'Institutions as the fundamental cause of long-run growth', *National Bureau of Economic Research*, working paper 10481
- Akkus, S. & Timmer, C. P. 2008, 'The Structural transformation as a pathway out of poverty: analytics, empirics and politics', Working Paper number 150, July 2008, *Center for Global Development*
- Alvarado, I. & Charmel, K. 2002, 'The Rapid rise of supermarkets in Costa Rica: impact on horticultural markets', *Development Policy Review*, vol. 20, issue 4, pp. 473-485
- Balsewich, F. 2006, *Essay on producers' participation in, access to, and response to the changing nature of dynamic domestic markets in Nicaragua and Costa Rica*. Ph.D. thesis, Michigan State University
- Berdegúe, J. A., Biénabe, E. & Peppelenbos, L. 2008, *Keys to inclusion of small-scale producers in dynamic markets – Innovative practice in connecting small-scale producers with dynamic markets*, Regoverning Markets Innovative Practice series, IIED, London
- Bertsch, F. 2006, 'El recurso tierra en Costa Rica', *Agronomía Costarricense*, no. 30, vol. 1, pp. 133-156
- Cárdenas, G. D. & Mora, A. 2012, 'Visión panorámica del sector cooperativo en Costa Rica – Una larga historia del sector', *Organización Internacional del Trabajo 2012*
- Chiriboga, M. 2007, 'Comercialización y Pequeños Productores – estudio elaborado para FIDAMÉRICA', *FIDAMÉRICA*, Quito
- Cordero, J. A. P. 2000, 'El crecimiento económico y la inversion: el caso de Costa Rica', *Serie Reformas Económicas*, no. 52
- Costa Rica, 2002, URL: <http://www.fao.org/docrep/005/Y4632E/y4632e0a.htm> (accessed 23 April 2013)
- Country Profile – Costa Rica, 2011, URL: <http://www.new-ag.info/en/country/profile.php?a=1901> (accessed 23 April 2013)
- Dirven, M. 2001, 'Dairy clusters in Latin America in the context of globalization', *International Food and Agribusiness Management Review*, no. 2, vol. 3/4, pp. 301-313

Farina, E. M. M. Q. & Reardon, T. 2000, 'Agrifood grades and standards in the extended Mercosur: their role in the changing agrifood system', *American Journal of Agricultural Economics*, December 2000

Gundlach, E. 2002, (Book review of) Easterly, W. 2001, 'The elusive quest for growth: economists' adventures and misadventures in the tropics', *MIT Press*, Cambridge, MA

Hausmann, R. & Gavin, M. 1996, 'Securing stability and growth in a shock prone region: the policy challenge for Latin America', *Inter-American Development Bank*, Working Paper 315, Washington D. C.

Hicks, J. R. 1969, *A theory of economic history*, Oxford University Press, Oxford

Ministerio de Relaciones Exteriores y cultura de Costa Rica, 2013, URL: <http://www.rree.go.cr/?sec=ministerio&cat=politica%20exterior> (accessed 26 May 2013)

North, D. C., Wallis, J. J. & Weingast, B. 2006, 'A Conceptual framework for interpreting recorded human history', Mercatus Center, *George Mason University*, Working Paper 75, 2006 (published also as "Violence and Social orders: A Conceptual framework for interpreting recorded human history", Cambridge 2009)

Pirenne, H. 1937, *Economic and social history of Medieval Europe*, Harcourt, Brace and Company, New York

Reardon, T. & Berdegué, J. 2002, 'The Rapid Rise of Supermarkets in Latin America: Challenges and opportunities for development', *Development Policy Review*, no. 20, vol. 4, pp. 371-388

Reardon, T., Timmer, C. P., Barrett, B. & Berdegué, J. 2003, 'The rise of supermarkets in Africa, Asia and Latin America', *American Journal of Agricultural Economics*, vol. 85, no. 5, Proceedings Issue (Dec 2003), pp. 1140-1146

Rodrik, D. 2000, 'Institutions for high-quality growth: What are they and how to acquire them', Working Paper 7540, *National Bureau of Economic Research*

Saenz, F. & Ruben, R. 2004, 'Export contracts for non-traditional products: Chayote from Costa Rica', *Journal on Chain and Network Science*, no. 4, pp. 139-150

Shimko, K. L. 2008, *International relations – perspectives and controversies*, 2nd edition, Houghton Mifflin Company, Boston

Smith, A. 1776, *An inquiry into the nature and causes of the wealth of nations*, W. Strahan & T. Cadell, London

The World Bank Databank, 2013, URL: <http://databank.worldbank.org> (accessed 14 April 2013)

Timmer, C. P. 2003, 'Biotechnology and food systems in developing countries', *Journal of Nutrition*, vol. 133, pp. 3319-3322

Timmer, C. P. 2005, 'Why it is difficult for the global economy to connect economic growth to the poor: interactions between agriculture and trade', *Harvard Asia-Pacific Review*, vol. 8, no. 2

Timmer, C. P. 2006, 'How countries get rich', *Center for Global Development*, February issue
UN millennium goals, n.d. URL: <http://www.un.org/millenniumgoals/poverty.shtml>
(accessed 6 Jan 2013)

Universidad EARTH – official website, 2013, URL: <http://www.earth.ac.cr/> (accessed 15 Aug 2013)

Uppsala Conflict Data Program (UCDP) Costa Rica, n.d. URL: http://www.ucdp.uu.se/gpdata/gpcountry.php?id=39®ionSelect=4-Central_Americas
(accessed 27 May 2013)

Wollni, M. & Zeller, M. 2007, 'Do farmers benefit from participating in specialty markets and cooperatives? The case of coffee marketing in Costa Rica', *Agricultural Economics*, issue 37, pp. 243-248

Appendix A**Table 1: Indicators of macroeconomic volatility in the world, 1970-1992**

	Latin America & Carib.	Industrial Economies	East Asian "Miracle" Economies	South Asia	East Asia and Pacific	Sub-Saharan Africa	Middle-East and North Africa
Macroeconomic outcomes (<i>standard deviation</i>)							
Change in real exchange rate	13.4	4.8	6.2	N/A	8.9	19.4	5.5
Annual inflation rate	463.5	3.9	6.2	7.9	10.8	88.7	7.0
Policy (<i>standard deviation</i>)							
Fiscal deficit (% of GDP)	4.7	2.4	2.4	4.2	3.5	4.5	8.5
Monetary growth	211.2	5.6	13.6	7.4	13.3	93.7	13.1

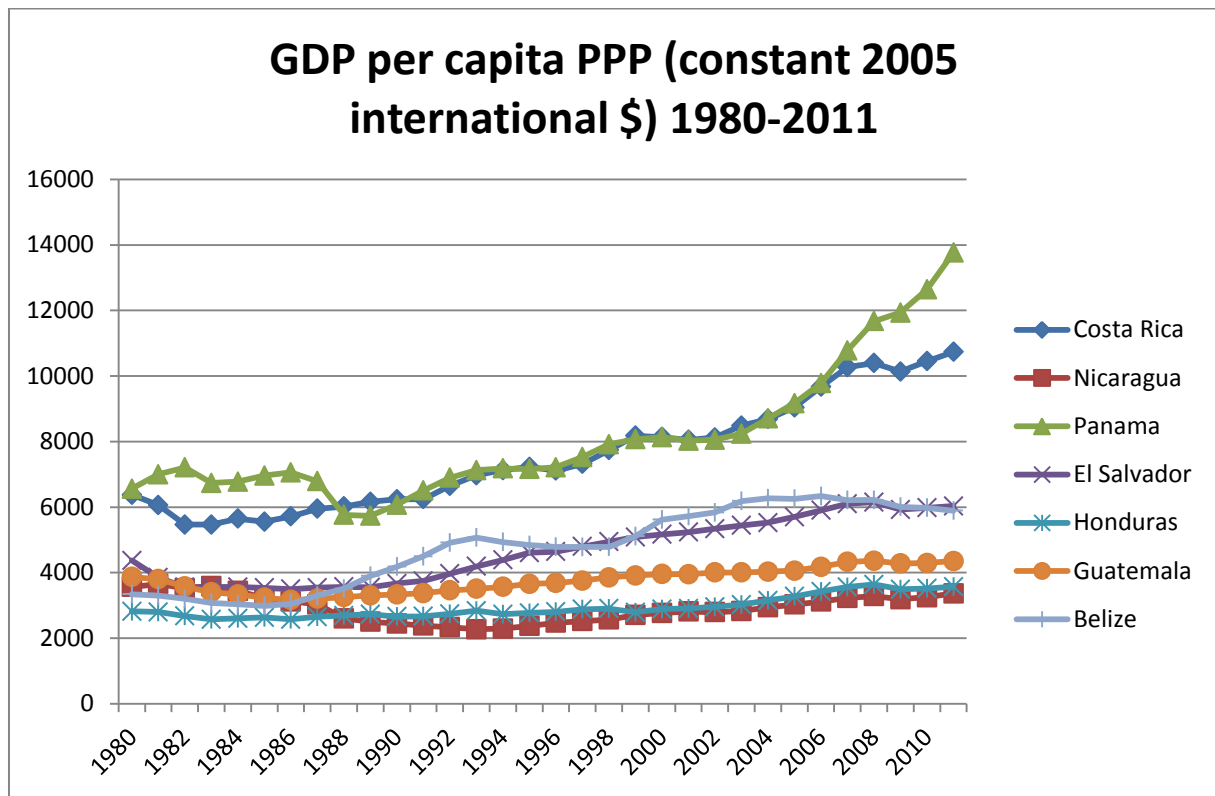
Source: Hausmann&Gavin, 1996 p. 3

Table 2: GINI indicators for Central America and Sweden; 1991-2010

Country	Costa Rica	Nicaragua	Panama	El Salvador	Honduras	Guatemala	Belize	Sweden
1991	46.7		58.2	54	51.9			
1992	45.7				51.83			
1993	46	50.4			53.5		59.9	
1994	46.8				55		61.3	
1995	45.7		57.8	49.9	55.5		59.5	
1996	46.5				55.7		56.9	
1997	45.6						57.3	
1998	45.7	45.2	57.6	54.5	57.4	55.8	55	
1999	47.7			52.2	55.4		53.1	
2000	46.5					54.3		25
2001	50.9	43.1	57.3	53.6	54.5			
2002	50.72		56.64	53.1	58.89	59.19		
2003	49.7		56.3	50.7	58.7	56.1		
2004	48.7		55	49	58.5	54.5		
2005	47.6	40.5	54	50.3	59.7			
2006	49.1		55.1	46.2	57.6	55.9		
2007	49.3			47	56.2			
2008	48.9			46.8	61.3			
2009	50.7		52	48.3	57			
2010			51.9					

Source: The World Bank Databank, 2013

Graph 3: GDP per capita PPP (constant 2005 international \$) for Central America, 1980-2011



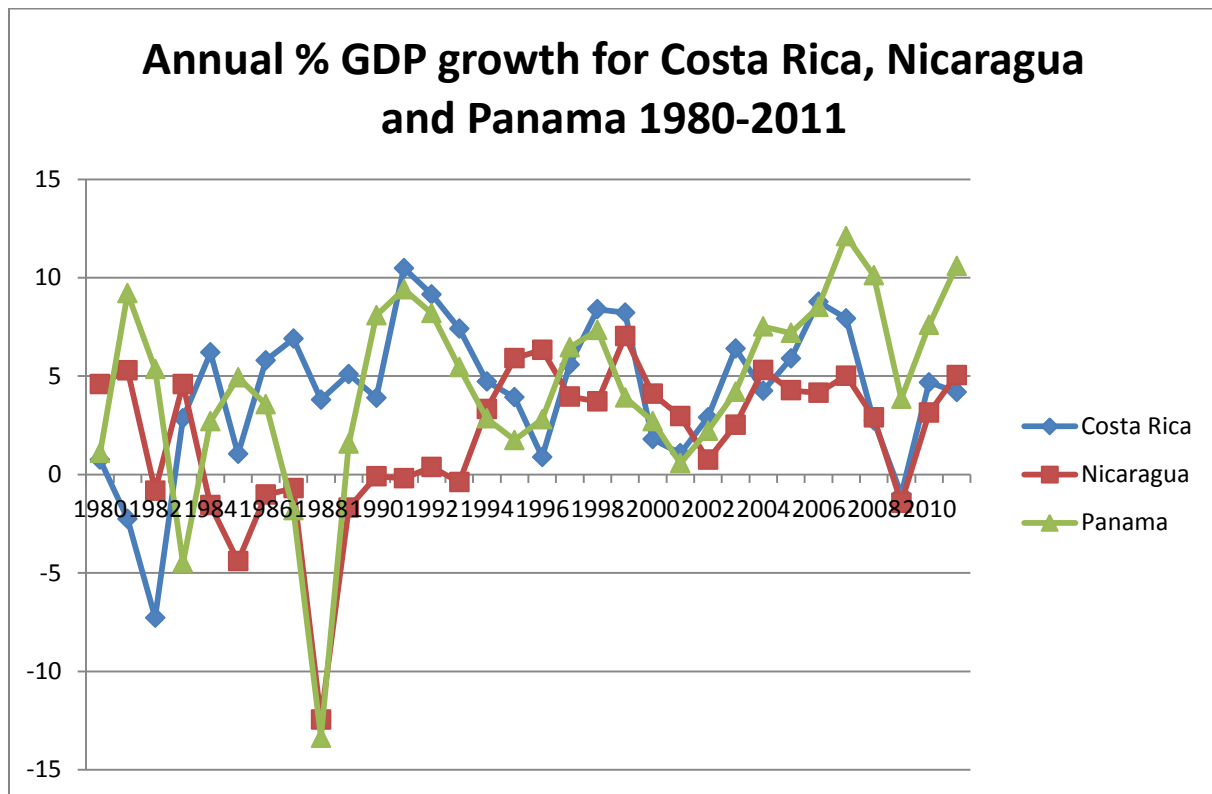
Source: The World Bank Databank, 2013

Table 4: Annual % GDP Growth 1980-2011 for Central America

	Costa Rica	Nicaragua	Panama	El Salvador	Honduras	Guatemala	Belize
1980	0,75	4,6	1,09	-11,77	0,66	3,75	1,29
1981	-2,26	5,3	9,21	-10,45	2,53	0,64	-0,28
1982	-7,28	-0,82	5,35	-6,3	-1,39	-3,53	-0,28
1983	2,86	4,6	-4,49	1,53	-0,92	-2,57	-2,11
1984	6,2	-1,56	2,7	1,33	4,34	0,49	1,95
1985	1,04	-4,408	4,94	0,62	4,18	-0,61	1,07
1986	5,8	-1,02	3,56	0,18	0,72	0,14	4,57
1987	6,9	-0,7	-1,81	2,5	6,03	3,54	11,22
1988	3,8	-12,45	-13,38	1,88	4,61	3,89	9,24
1989	5,1	-1,69	1,56	0,96	4,32	3,94	13,09
1990	3,9	-0,09	8,09	4,83	0,09	3,1	10,63
1991	10,49	-0,19	9,41	3,57	3,25	3,65	10,49
1992	9,15	0,385	8,2	7,54	5,62	4,83	12,04
1993	7,41	-0,39	5,45	7,37	6,23	3,92	6,27
1994	4,72	3,33	2,85	6,05	-1,3	4,03	0,15
1995	3,92	5,91	1,75	6,39	4,06	4,94	0,64
1996	0,88	6,34	2,81	1,71	3,6	2,96	1,43
1997	5,57	3,96	6,46	4,24	4,99	4,36	3,55
1998	8,39	3,71	7,34	3,75	2,9	4,99	3,74
1999	8,22	7,03	3,91	3,45	-1,89	3,84	8,78
2000	1,80	4,1	2,71	2,15	5,75	3,61	13,04
2001	1,07	2,96	0,57	1,71	2,72	2,33	4,96
2002	2,90	0,75	2,22	2,34	3,75	3,87	5,1
2003	6,40	2,52	4,2	2,3	4,55	2,53	9,32
2004	4,25	5,31	7,52	1,85	6,23	3,15	4,62
2005	5,88	4,28	7,19	3,56	6,05	3,26	3,03
2006	8,77	4,15	8,52	3,91	6,57	5,38	4,65
2007	7,93	5,02	12,11	3,84	6,18	6,3	1,34
2008	2,73	2,9	10,12	1,27	4,23	3,28	3,49
2009	-1,01	-1,44	3,85	-3,13	-2,13	0,52	0
2010	4,67	3,14	7,6	1,36	2,77	2,91	2,9
2011	4,19	5,05	10,6	1,47	3,62	3,86	1,93

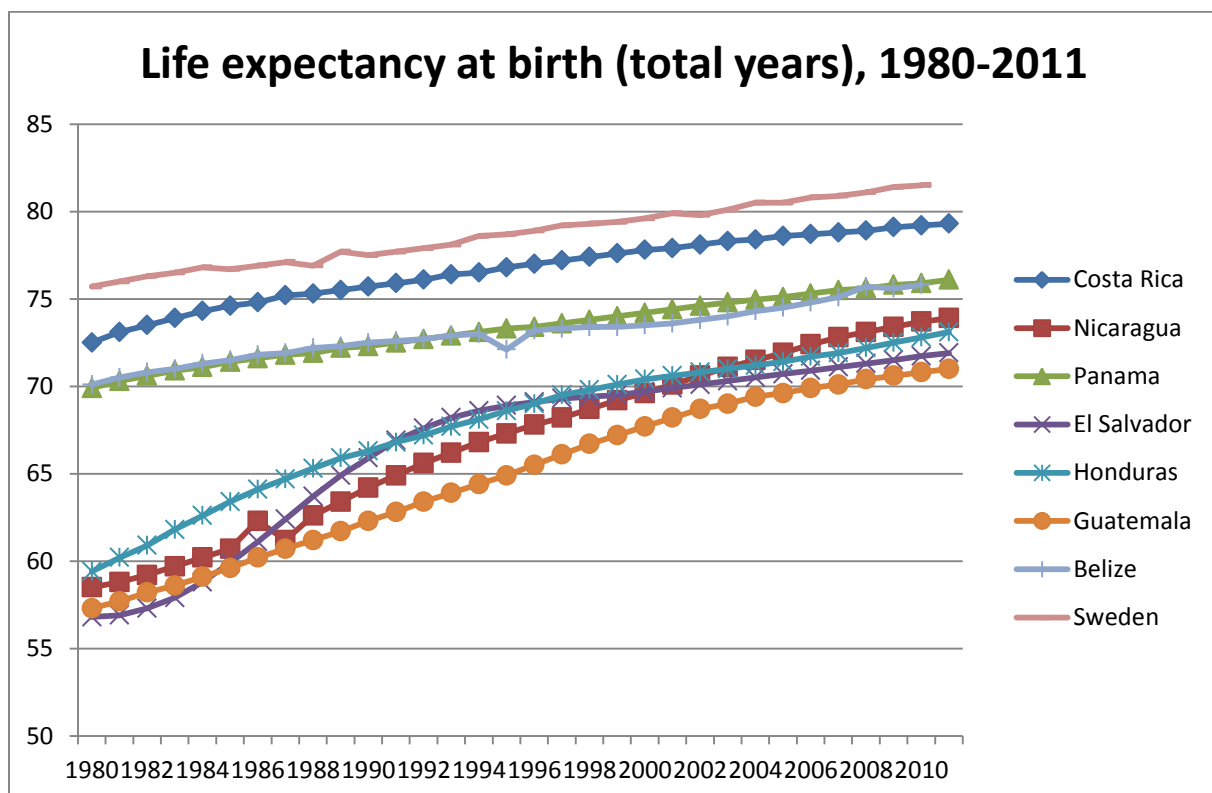
Source: The World Bank Databank, 2013

Graph 5: Annual % GDP growth for Costa Rica, Nicaragua and Panama, 1980-2011



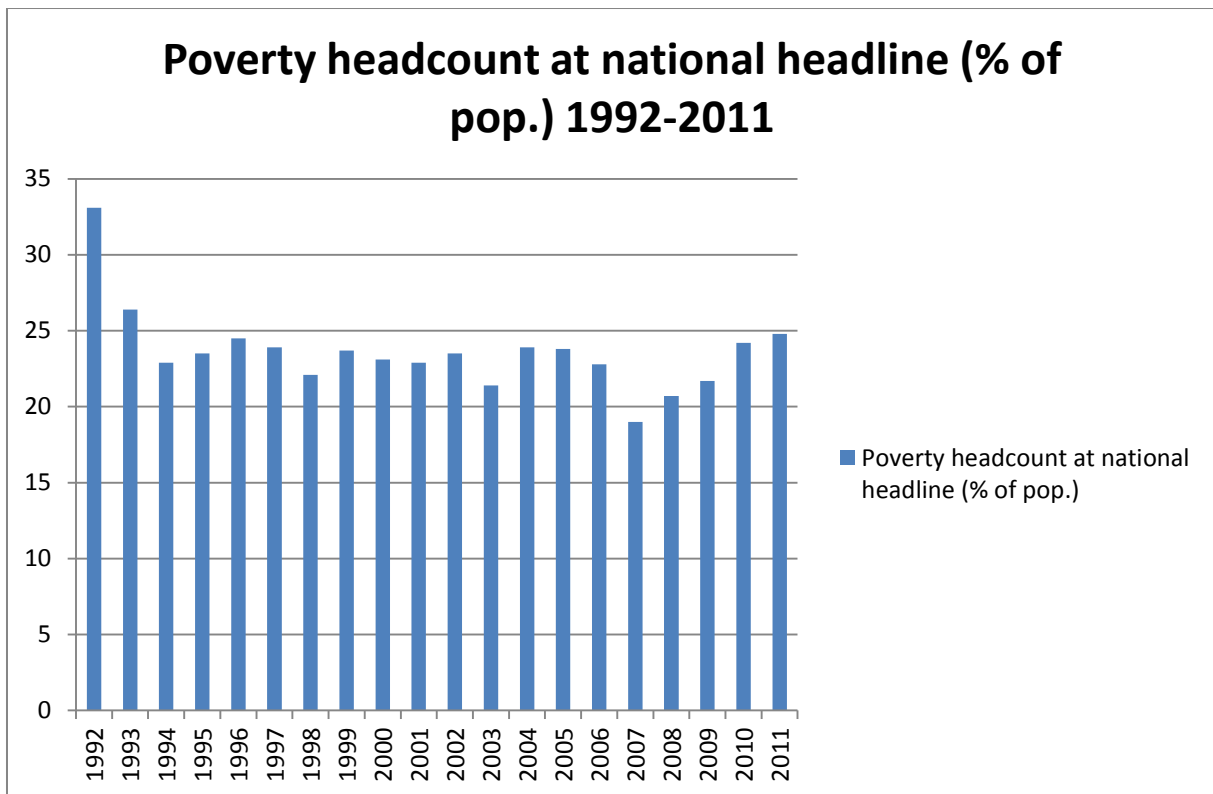
Source: The World Bank Databank, 2013

Graph 6: Life expectancy at birth (total years) for Central America and Sweden, 1980-2011



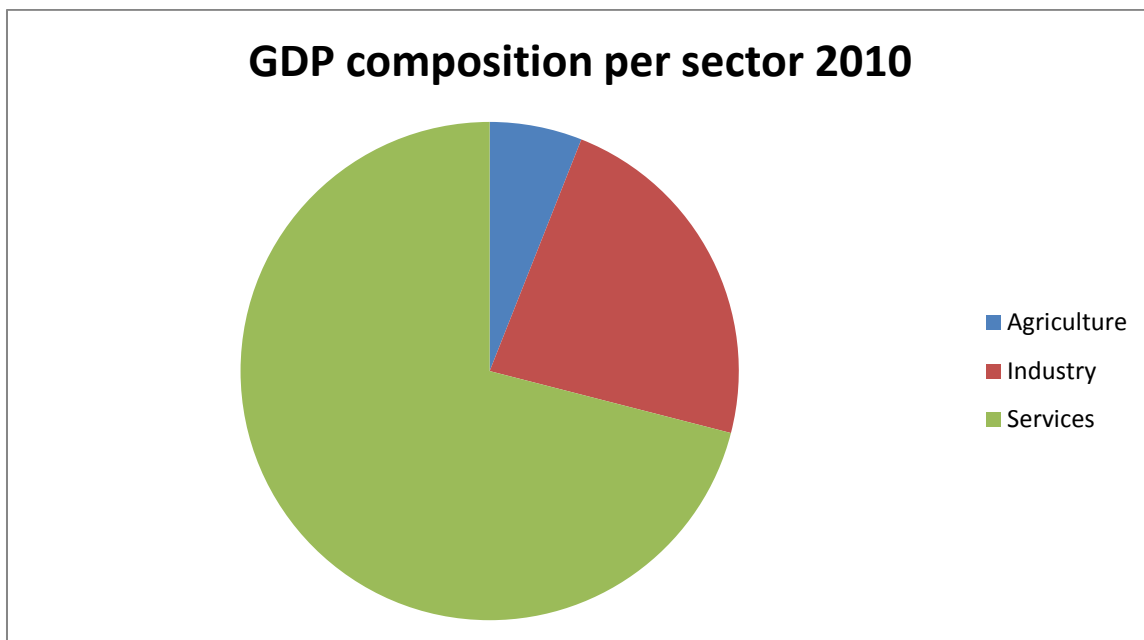
Source: The World Bank Databank, 2013

Figure 7: Poverty headcount at national headline (% of pop.) in Costa Rica 1992-2011



Source: *The World Bank Databank, 2013*

Figure 8: GDP composition per sector in Costa Rica in 2010: Agriculture 6%, Industry 23% and Services 71%



Source: *Country Profile – Costa Rica, 2011*

Table 9: Employment shares in Costa Rica; agriculture, services and industry 1992-2011

	Employment in agriculture (% of total)	Employment in services (% of total)	Employment in industry (% of total)
1992	24	49	26
1993	23	51	26
1994	21	52	26
1995	22	54	24
1996	22	54	23
1997	21	55	24
1998	20	56	23
1999	20	57	23
2000	20	57	22
2001	16	57	23
2002	16	58	23
2003	15	59	22
2004	15	59	22
2005	15	60	22
2006	14	60	22
2007	13	61	22
2008	12	62	22
2009	12	62	22
2010	15	65	20
2011	14	66	20
Change	-42%	+35%	-23%

Source: The World Bank Databank, 2013

Table 10: The distribution of agricultural land cultivated in Costa Rica, 1993 and 2002

	Number of hectares cultivated		
	1993	2002	Difference (%)
Coffee	105000	113130	7,742857143
Sugar cane	38700	47000	21,44702842
Oil palm	26600	42480	59,69924812
Banana	49394	42182	-14,60096368
Orange	18000	26000	44,44444444
Plátano*	7500	11800	57,33333333
Cacao	12000	3550	-70,41666667
Chayote^	220	555	152,2727273
Rice	41870	47849	14,27991402
Kidney Bean	59030	22088	-62,5817381
Pineapple	7000	15500	121,4285714
Corn	19219	6776	-64,74322285
Other	36936	55614	
Total	421467	434524	3,097988692

*large banana sort

^vegetable pear

Source: Bertsch, 2006