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COSTA RICA'S OUTWARD-LOOKING DEVELOPMENT: FROM 'AGRICULTURE OF CHANGE' TO FOOD INSECURITY (1990-2008)

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Abstract

Costa Rica has been a great example of the neoliberal approach to agricultural policy implemented during the last two decades in most Latin American countries. Costa Rica shifted from import substitution industrialisation (ISI) to export-led growth and what the government and international organisations called 'Agriculture of Change' in the early 1980s. A combination of an active state, stable democracy, high social investment and support for small and medium firms, including cooperatives, resulted in higher economic growth and better gender and income distribution than in neighbouring countries. Since 1990, Costa Rica accelerated trade liberalisation, foreign direct investment (FDI), and non-traditional agricultural exports (NTAEs) through agricultural conversion programmes. Since the early 1990s new patterns of agricultural development have promoted the regional specialisation of agricultural production. The new strategy shaped agriculture and rural development in different regions and cantons creating opportunities and challenges for small farmers and rural inhabitants.

Keywords: *Costa Rica, outward-looking development, NTAEs, small farmers, agricultural conversion, Agriculture of Change.*



Resumen

Costa Rica es generalmente descrita como un buen ejemplo del enfoque neoliberal de desarrollo agrario implementado en la mayoría de los países latinoamericanos durante las últimas dos décadas. Costa Rica pasó de la industrialización por sustitución de importaciones al crecimiento basado en las exportaciones a principios de los 80. La combinación de un estado activo, una democracia estable, una elevada inversión en capital humano y el apoyo a las pequeñas y medianas empresas, incluyendo las cooperativas, dio como resultado un crecimiento económico elevado y una buena distribución del ingreso así como una mayor igualdad de género de la que encontramos en los países vecinos. A partir de 1990 Costa Rica aceleró la liberalización comercial, la atracción de inversión extranjera directa (IED) y las exportaciones agrarias no tradicionales (EANTs) a través de programas de reconversión productiva. Desde 1990 los nuevos patrones de desarrollo agrario han promovido la especialización regional de la producción agropecuaria del país. La nueva estrategia ha dado forma al desarrollo agrario y rural de las diferentes regiones del país creando oportunidades y desafíos para los pequeños productores y habitantes rurales.

Palabras clave: *Costa Rica, desarrollo mirando hacia fuera, exportaciones agrarias no tradicionales (EANTs), pequeños productores, reconversión productiva, Agricultura de Cambio.*

JEL Codes: N56, O13, Q15, Q18.

1. INTRODUCTION.

Costa Rica, a country with great agro-ecological and biological diversity and a population of more than four million people, has been a great example of the neoliberal approach to agricultural policy implemented during the last two decades in most Latin American countries (INEC, 2011). Costa Rica shifted from import substitution industrialisation (ISI) to export-led growth and what the government and international organisations called ‘Agriculture of Change’ in the early 1980s. The country has been commonly seen as a development success story in Central America (Mesa-Lago, 2000; Pomareda, 2002; Rodríguez-Clare, 2001). A combination of an active state, stable democracy, high social investment and support for small and medium firms, including cooperatives, resulted in higher economic growth and better gender and income distribution than in neighbouring countries (Mesa-Lago, 2000). Since 1990, Costa Rica accelerated trade liberalisation, foreign direct investment (FDI), and non-traditional agricultural exports (NTAEs) through agricultural conversion programmes. Although Costa Rica’s agricultural sector declined from a 19.3% share of GDP in 1990 to approximately a 10% in 2008, NTAEs increased from 16.8% to 33% of total exports of goods during the same period (SEPSA, 1998, 2008).¹ Since the early 1990s new patterns of agricultural development have promoted the regional specialisation of agricultural production.² The new strategy shaped agriculture and rural development in different regions and cantons creating opportunities and challenges for small farmers and rural inhabitants.

Costa Rica has generally been seen as a successful example of export-led growth and

¹ Differing from the five traditional Central American exports (coffee, cotton, cattle, sugar and bananas), NTAEs include: a) products not previously produced; b) products previously produced for domestic consumption but now export-led crops (such as tropical tubers or fruits); and, c) products now exported to new markets (Barham *et al.* 1992).

² Appendix I describes Costa Rican regions with further detail.

agriculture diversification since the 1990s.³ However, fieldwork developed in the country and a great array of semi-structures interviews undertook in different regions portrays some of the problems of export-led growth.⁴ Although outward-looking development created a significant agroindustry and rural non-farm activities, opportunities in agriculture production for small farmers seem to be limited. Based on agriculture data collection, fieldwork interviews, qualitative information and the review of the agriculture policy, this paper explores the following questions: 1) What were the main outward-looking development policies implemented in Costa Rica from 1990 to 2008?; 2) What was the impact of these policies on agricultural production patterns in Costa Rica?; 3) How did outward-looking development policies transform the use of land and agrarian structures in Costa Rica during the period under investigation?; and, 4) How did the new patterns of agriculture production affected national food security? .

2. COSTA RICA'S AGRICULTURE PRIOR TO 1990.

Until the 1960s, Costa Rica's economic growth was driven by an agro-exporting economy highly dependent on a few agricultural products, with coffee and banana accounting for almost 90% of the total value of exports (Bulmer-Thomas, 1987; Mesa-Lago, 2000). This economic strategy based on small farming and traditional crops was highly vulnerable to price fluctuations in international markets.

³ The idea of rural development in Costa Rica shifted from family farming and food security in the 1960s (under the ISI strategy) to agriculture of change and export-led growth in the early 1980s (based on Bulmer-Thomas, 1987; Conroy *et al.* 1996, Pomareda, 2002, 2006; Rovira Mas, 1987; SICA, 1981). Since the early 1990s rural development has been subordinated to trade liberalisation, free trade agreements and FDI attraction (González Mejía, 1998; Pomareda, 1998). For further information on free trade agreements and agriculture in Costa Rica see Fernández, 2003, 2005; Estrada & Hernández, 2004.

⁴ This paper discusses the impact of outward-looking development policies on production patterns, land structures and food production. This is the first part of the analysis developed in a PhD thesis defended in 2012 at the University of London. The impact of this strategy on income levels and employment opportunities is developed in chapter 3 of the abovementioned PhD thesis, (see Botella-Rodriguez, 2012a, 2012b; currently chapter 3 is a work in progress paper). For further analysis on the impact of outward-looking development on poverty levels and especially on rural poverty see Estado de la Nación, 2005, 2006; Botella-Rodriguez, 2012a; Viales, 1999; MIDEPLAN, 2007; for comparative analysis of the Central American region also see Estado de la Región, 2003.

The approval of the Industrial Promotion Law in 1959 launched a new development strategy of import substitution industrialisation (ISI). The entry into the Central American Common Market (CACM) in 1962 further consolidated this strategy (Fernández Alvarado & Granados Carvajal, 2000; Rodríguez, 1998). ISI was based on the promotion of the domestic manufacturing sector through the expansion of tariffs and the creation of other state incentives, facilitating the import of necessary equipment and inputs (Mesa-Lago, 2000). In the agriculture sector, the ISI strategy aimed to modernise traditional activities by promoting agricultural diversification. Yet, the need for foreign exchange to pay for extra-regional imports and sustain the process of industrialisation meant the economy continued to be heavily reliant on revenue from traditional export agriculture. The new strategy therefore required an agricultural policy that promoted export agriculture (Bulmer-Thomas, 1987; Hveem & Nordhaug, 2002). Although total spending on agriculture decreased compared to other sectors (e.g. funding of manufacturing development), agricultural policy placed priority on traditional export crops (coffee, bananas, cotton, sugar and beef) (Brenes, 1990; Bulmer-Thomas, 1987). During the 1960s, Costa Rica regularly channelled 50% of all credit to agriculture towards coffee. During the decade, national-bank credit also offered a great array of funding to promote sugar, livestock, cotton, and tropical fruits. Moreover, the state supported small farming not only to promote exports but also to secure national food self-sufficiency (Bulmer-Thomas, 1987; Mesa-Lago, 2000; Rovira Mas, 1987; Seligson, 1977).⁵

By and large, the agricultural policies implemented during the ISI period therefore identified small farmers as key actors and beneficiaries. However, ISI failed to decrease

⁵ For example, the Figueres administration (1970-74) launched an eight-year programme to improve the agricultural productivity of basic grains, tropical fruits, dairy products and pig raising. By 1975, President Oduber (1974-78) initiated the National Basic Grains Programme to achieve self-sufficiency in the production of these crops (partly because the elimination of regional tariffs in CACM had induced dependence on imported grains) (Rovira Mas, 1987).

the vulnerability of Costa Rica to changes in international markets and external shocks. The country remained extremely reliant on the performance of extra-regional (outside the CACM) exports of traditional crops. In 1970, traditional exports still accounted for 91% of total exports: coffee exports accounted for 39.5%, bananas for 36.1%, cotton for 0.2%, beef for 9.7%, and sugar for 5.5% sugar (Bulmer-Thomas, 1987; SICA, 1981).

In response, the Costa Rican state introduced the first attempt to diversify exports outside the Central American region in the early 1970s. The December 1972 Export Promotion Law 5162 was established to stimulate manufactured exports within the framework of regional integration. The law also included some efforts to diversify primary exports to new markets (Rodriguez, 1998).⁶ Yet, the application of the law was problematic within the context of ISI and its limits became more patent in the late 1970s (Conroy *et al.*, 1996; Ferreira, 2009; Rodriguez, 1998). The Central American Common Market lost dynamism and entered into a crisis after the war between El Salvador and Honduras in 1969. The oil shocks of 1973 and 1979 and large fluctuations in commodity prices (particularly coffee and beef) generated balance of payments problems (Rodriguez, 1998). From 1978 to 1982 exports to the Central American Common Market grew at an annual rate of 1.3% and GDP at 2.3%, significantly below the levels recorded in the early 1970s. The worsening of the Central American crisis and the Nicaraguan Revolution resulted in a severe debt crisis in August 1981.⁷ These

⁶ From 1976 to 1984, the Export Promotion Law gave exports favourable conditions, grants and tax reductions on imported inputs and capital goods to be used in export production processes under different forms: tax certificates (*Certificado de Abono Tributario*-CAT), certificates of export increase (CIEX) and a drawback system for the promotion of the *maquila* industry (Rodriguez, 1998). CATs were applied on exports with 35% or higher value added produced domestically by firms with at least 60% of Costa Rican capital and producing from a list of preselected products. CATs basically represented a 12-15% subsidy over the value of exports. CIEX represented a subsidy ranging from 1% to 10% of the increase in specific exports from one year to the next and the repayment of taxes paid on raw materials and intermediate goods used to produce exports (Rodriguez, 1998).

⁷ See also Bulmer-Thomas & Kincaid, 2000 that stressed the complex structure of the CACM. Further analysis of the CACM can be found in Molina Chocano, 1979 and Torres Rivas, 2006.

events led to the demise of the ISI strategy, which had been so popular among traditional export agriculture and small farmers (Pomareda, 2002, 2006).

Following the debt crisis of the early 1980s, Costa Rica began a series of reforms to reduce macroeconomic imbalances and restore growth. With support from international organisations (through two Structural Adjustment Programmes), the overall development model began the shift from an import-substitution to an export-oriented model in the early 1980s. By undertaking economic reforms and increasing export incentives, the new economic model aimed to enhance international competitiveness and diversify primary exports (WTO, 1995). One of the early manifestations of this shift was the introduction of the Public Sector Financial Equilibrium Law (No. 6955) by the Congress in February 1984 (SEPSA, 2002b). The law aimed to reduce fiscal imbalances by creating new taxes and granting new government powers to control the fiscal deficit (Conroy *et al.* 1996; Rodriguez, 1998).

In the agriculture sector, the law promoted various incentives for non-traditional exports: duty-free export contracts (for intermediate goods imported); income-tax exemptions; and, tax-saving certificates (*certificados de abono tributario*, CATs) (Conroy *et al.* 1996; Rodriguez, 1998).⁸ By imposing taxes on coffee, bananas, sugar and beef and reducing the incentives, subsidies and credit available for basic grains producers, the law also dismantled internal support for traditional exports and basic grains production. In less than five years, from 1983 to 1987, agricultural credit available for corn, beans and rice fell by 70%. This was partly a consequence of the process of trade liberalization that began in 1986 and led to a gradual phasing out of the

⁸ CATs were initially granted for a ten-year period as a mechanism to compensate exporters for domestic distortions that could weaken their competitiveness. They were also meant to cover possible costs of entry to new markets with original products. This was only available for non-traditional exports. CATs were equivalent to 15% of the F.O.B. value of exports, when they were directed towards the Western Hemisphere, or 20%, when destined elsewhere. The entitlement itself had a maturity period of 18 months (Fernández Alvarado & Granados Carvajal, 2000; Rodriguez, 1998).

20% tariff rates on maize, rice and beans (Conroy *et al.*, 1996; González Mejía, 1997). At the same time, the US Agency for International Development (USAID) encouraged the government to pursue ‘Agriculture of Change’ in Costa Rica.⁹ ‘Agriculture of Change’ was underpinned by various mechanisms aimed at promoting direct support for NTAEs to take advantage of the US Caribbean Basin Initiative (Conroy *et al.*, 1996; Picado & Silva, 2002). Although most small and medium-sized farmers required some sort of technical assistance not only to produce NTAEs but also basic grains, between 1979 and 1988, the Ministry of Agriculture’s (MAG) operating expenditures dropped by 65% (Lindarte, 1990). Reductions in credit and support prices reflected the government’s effort to encourage small farmers to switch from basic grains and traditional production to more profitable non-traditional crops such as pineapple or African Palm (Conroy *et al.* 1996; Rosset, 1999).

Throughout the 1980s the Costa Rican government also created a great amount of subsidises and incentives for producers engaged in NTAEs and for exporting firms. In 1986 the state began to provide licenses and quotas to encourage private companies’ direct participation in basic grains importation and exportation. The measures were positive for TNCs and large domestic companies. Yet, they ultimately weakened basic grain production and producers.¹⁰

In summary, export-led growth contributed to the expansion of non-traditional crops and thus the diversification of agricultural exports. Whereas NTAEs accounted for less

⁹ Agriculture of Change was a term coined by international organisations and most Central American governments to promote NTAEs during the 1980s. The idea was strongly supported by USAID campaigns (see Conroy *et al.*, 1996).

Advertisements for the ‘Agriculture of Change’ were produced by a USAID-funded campaign (Conroy *et al.* 1996).

In the case of banana, see Soluri, 2005 to understand the linkages between places of production and consumption.

¹⁰ Various incentives were only available for exporting firms (e.g. reduction of export taxes) and importers of inputs (e.g. exemption from import taxes). Other subsidies explicitly restricted access for small producers through size-dependent conditions (BCCR, 1988; Conroy *et al.* 1996).

than 8% of total exports between 1981 and 1983, they represented 17% of total exports in 1992 (Rodriguez, 1998). Significant funds from USAID and international organisations helped to diversify agricultural activities and end the country's long-standing dependency on traditional export agriculture. USAID funding successfully reoriented the activities of financially strapped state institutions towards the idea of 'Agriculture of Change.' Paradoxically, whereas neoliberal ideology called for a sharp decline in subsidies for small farmers, a vast array of subsidised incentives were made available for exporting foreign and large local firms (Conroy *et al.* 1996; SEPSA, 2002a).

3. OUTWARD-LOOKING DEVELOPMENT DURING THE 1990s.

Two factors guided the new economic agenda of outward-looking development in Costa Rica during the 1990s and early 2000s (Pomareda, 2002). First, with the aim of strengthening the country's export capacity and promoting greater integration into the global economy, the overall economic strategy deepened trade liberalisation. To this end, Costa Rica progressively dismantled national mechanisms used to protect its different economic sectors from international competition. Guided by the commitments made on Costa Rica's accession to the GATT in 1990, between 1989 and 1994 average nominal tariff protection was reduced from 17% to 11.2%; tariff surcharges, restrictive import and export licensing requirements were eliminated; administrative procedures were rationalised; and, financial assistance to traditional exports was phased out (WTO, 1995). The revival of the Central American integration project and the signing of numerous bilateral agreements in the late 1990s and early 2000s also contributed to trade liberalisation. The adoption of the commitments negotiated within the framework

of the Uruguay Round was also a significant incentive for trade liberalisation in Costa Rica (WTO, 1995).¹¹

Gradually, trade liberalisation transformed Costa Rica into a very open economy. From 1995 to 2008 the trade of goods and services (imports plus exports) as a share of GDP increased from 78% to 115% (Pomareda, 2002; PROCOMER, 2003, 2009). Meanwhile, the markets for Costa Rican exports diversified, moving away from the 1970s' focus on the Central American market (which then received around 70% of exports) towards extra-regional markets. During the early 1990s alone, 45% of exports went to the United States and 30% to European countries (WTO, 1995).

The second feature of the overall economic model was the attraction of FDI in sophisticated sectors of the economy. Costa Rica's relatively educated population, political stability, and pro-investment public policies (e.g. free trade areas) allowed the country to become an important offshore manufacturing and customer service centre for a number of TNCs during the 1990s. As part of its investment strategy, Costa Rica placed much emphasis on Free Trade Zones. The zones allowed investors to import inputs and equipment without any duties and tax payments on revenues. Producers were also committed to export the whole of their output (Pomareda, 2002). As a result of these policies, Costa Rica rose to second position (after Chile) in FDI per capita in Latin America (equivalent to US\$105 per capita) by 1998. FDI in secondary and tertiary activities grew significantly as they were the key sectors of outward-looking development in Costa Rica. Whereas FDI in the tourist sector, trade, manufacturing and services increased significantly from 1997 to 2007, FDI in agriculture began to decrease

¹¹ See Appendix II for further information on the different trade agreements signed by Costa Rica from 1990 to 2008.

(BCCR, 1997; Pomareda, 2002).¹² Although primary activities were not at the heart of the economic strategy, agriculture diversification and NTAEs promotion attracted FDI into agroindustrial activities (see Table 1) (BCCR, 1997, 2003, 2009).

Table 1
FDI according to economic sector (US\$ millions, in nominal terms)*

	1997	2007
Agriculture	38.1	1
Agro-industry	6.5	32
Trade	17.6	73
Manufacturing	270.6	689
Services	-7.3	57
Financial system	-0.2	74
Tourist sector	79.3	321
Estate agency sector	n.a.	645
Other	2.3	4
Total	406.9	1,896

Source: PROCOMER, 2009; BCCR, 2009.

***Information available in nominal terms**

Finally, a great number of agroindustrial TNCs established operations in Costa Rica during the 1990s and early 2000s. In 2008, fourteen companies producing non-traditional crops, agroindustry and food industry exports operated in Costa Rica (PROCOMER, 2009). It is worth noting that US direct investment accounted for an average of 65% of total FDI in 2007 and the majority of companies operating in the agroindustrial sector were US firms (see Table 2).

¹² It should be noted that a large part of industrial manufacturing activity was related to agroindustry, including tyres, machinery, equipment, agrochemicals, packing materials, etc. In 2002 64% of FDI capital came from the US and 12% from México (Pomareda, 2002).

It is worth noting that since 1999 FDI in financial activities and tourism have significantly increased, fuelled by US and European consortiums.

Table 2
Main export companies of fresh products, 2008

Exporter*	Ranking
Corporación Agrícola Del Monte (US)	1
Diversificados de Costa Rica, Dicor (US, Dole)	2
Compañía Bananera Atlántica, Ltda (Chiquita, US)	3
Desarrollo Agroindustrial de Frutales, S.A (US, Del Monte)	4
Frutas Tropicales Venecia, S.A (Colombia, Banacol S.A.)	5
Standard Fruit Company de Costa Rica (US)	6
Frutas de Exportación, Frutex S.A (US Del Monte)	7
Caribbean Pineapple Exports (US)	8
Melones de Costa Rica, S.A (CR)	9
Bonanza Fruit Co. Costa Rica, S.A (US)	10
Comercializadora Bananeros de Costa Rica, S.A (CR)	11
Tropicalrica Internacional Tri, S.A (US)	12
Inversiones y Procesadora Tropical (CR)	13
Compact Seeds and Clones (US)	14
Hacienda Ojo de Agua, S.A (CR)	15

Source: PROCOMER, 2009

*Coffee export companies are not included.

3.1. Agricultural policies: subordination to the overall economic model.

During the 1990s and early 2000s agriculture policies in Costa Rica became subordinated to the overall economic model. The new economic strategy promoted important changes in the nature of public institutions and the type of state involvement in agriculture. The overall economic policy ended up weakening agriculture institutions oriented towards the promotion of agricultural production for the domestic market (González Mejía, 1998; Pomareda, 1998). Whereas agriculture policy prior to 1983 clearly supported traditional agriculture and small farming, during the 1990s and 2000s primary sector institutions experienced significant changes and size reductions on two fronts: 1) expenditures on agriculture activities; and, 2) the number of civil servants employed. In relation to agriculture budgets (see Table 3), agriculture expenditure as a

proportion of central state expenditures declined from 6.4% in 1995 to 0.5% in 2008. During the same period, in relation to total expenditure, Costa Rica registered the lowest percentage of agriculture expenditure in the Central American region (CEPAL, 1995, 2008; UNICRESE, 2004).

Table 3
Agriculture expenditures/central state expenditures (percentages), 1995-2008

Countries	1995	2008
Central America (average)	4.01%	1.82%
Costa Rica	6.4%	0.5%
El Salvador	1.7%	1.4%
Guatemala	2.5%	2.8%
Honduras	6.0%	1.5%
Nicaragua	1.8%	3.4%
Panama	1.8%	1.0%
Dominican Republic	7.9%	2.2%

Source: CEPAL, 2008, 1995.

During the 1990s and 2000s Costa Rica also made efforts to redefine the functions and increase the efficiency of public agriculture entities. Unfortunately, these efforts were more in the direction of reducing the number of civil servants rather than increasing their capacity (Conroy *et al.* 1996; Pomareda, 1998; UNICRESE, 2004). From May 1994 to December 1997, the number of employees in the Ministry of Agriculture and Livestock (MAG) dropped from 1,854 to 1,162; in the case of the Council for National Production (CNP) employees declined from 1,774 to 636; and, in the Institute for Agrarian Development (IDA, formerly the Institute for Land and Colonisation) from 809 to 476. These institutions also experienced reductions in their budgets. Although the majority of Costa Rica's agriculture budget was devoted to funding MAG, IDA and CNP initiatives, these entities lacked sufficient staff to carry out the proper consulting and advice required by agricultural activities (Pomareda & López, 2007).

In sum, from the Figueres (1994-1998) to the Arias Sánchez (2006-2010) administration, agriculture institutions progressively focused on two strategies: agricultural competitiveness and rural development (SEPSA 2002a, 2002b). The cornerstone of the strategy to enhance agricultural competitiveness was the so-called Productive Conversion Programme. This Programme was enacted in 1994 (Law No. 7742) by the Legislative Assembly and aimed to modernise and transform productive activities by promoting small and medium scale farmers' engagement in booming NTAEs. Fostering novel technologies (and making them accessible to producers), productive conversion sought to make agricultural activities more competitive (with products with more value added) and increase rural incomes (Estado de La Nación, 1998; IADB, 2002; La Gaceta, 15 January 1998; SEPSA, 1995, 1997b). The second pillar of agriculture policy during the 1990s and early 2000s was related to rural development in Costa Rica (SEPSA, 1995, 1997b; WTO, 2001). Under the umbrella of trade liberalisation, rural development policies promoted social organisations and modernisation of rural development institutions (SEPSA, 1995, 1997b). They also aimed to promote the creation of producer organisations, and group actors within the same agro-food business (Arias, 2005; Pomareda, 2006; SEPSA, 2002b). Although specific agricultural guidelines were outlined from the early 1990s onwards, they were limited for an agriculture sector exposed to the type of integration with global markets that Costa Rica embraced (Pomareda & Lopez, 2007).

4. THE IMPACTS OF OUTWARD-LOOKING DEVELOPMENT.

The overall economic model coupled with new agricultural policies led to important transformations in Costa Rican agriculture. Production patterns shifted to more competitive and diversified export-led crops. Intensification and extensive application

of inputs were some of the methods used to shift from traditional crops to NTAEs. The promotion of NTAEs also diversified the use of land throughout the country. More intensive patterns of production and NTAEs promotion transformed land ownership in Costa Rica with the subsequent impact on income opportunities for rural inhabitants. Finally, outward-looking development promoted changes in food security patterns. This section discusses these transformations during the period 1990-2008.

4.1. Changing production patterns.

Trade liberalisation and FDI stimulated imports of technology, agrochemicals and equipment. The relatively low tariff (5%) on machinery, equipment and agrochemicals favoured these imports (Pomareda, 2004; PROCOMER, 2009). Agricultural conversion programmes also promoted the intensive application of inputs and technologies during the 1990s and early 2000s. From 1990 to 2000 the use of fertilisers and irrigation systems increased significantly in Costa Rica. Fertiliser consumption (kg/ha) experienced a compound annual rate of growth of 4.9% between 1990 and 2000. The irrigated area per 1,000ha also increased, experiencing a compound annual rate of growth rate of 3.4% throughout the same period (author's calculations from World Bank, 2004; Mora-Alfaro, 2005).

Mora-Alfaro (2002) illustrates the extent to which the process of agriculture intensification and mechanisation was much faster in Costa Rica than the rest of Central America and Mexico during the 1990s (see Table 4). According to the Bureau for Agriculture Planning (SEPSA, 2002a) fertiliser consumption in Costa Rica increased from 100.1 (Kg/ha) in 1970 to 391.9 (Kg/ha) of farmed land in 1998. The number of tractors in use per hectare of cultivated land grew from 10.3 in 1970 to 13.9 in 1998. Although non-traditional agricultural exports were also promoted throughout Central

America and Mexico during the 1990s, levels in Costa Rica were the highest in the region.

Table 4
Central America and Mexico: diffusion of technology in agriculture, 1970 and 1998

Country	Consumption of fertilisers (kg per hectare of farmed land)		Tractors in use (per hectare of cultivated land and continuing crops)	
	1970	1998	1970	1998
México	23.2	62.5	3.9	6.3
Guatemala	29.8	116.7	2.0	2.3
Belize	73.3	52.8	12.7	12.9
Honduras	15.6	68.4	1.1	2.5
El Salvador	104.0	102.0	4.0	4.2
Nicaragua	21.5	19.2	0.4	1.0
Costa Rica	100.1	391.9	10.3	13.9
Panama	38.7	49.2	4.4	7.6

Source: Mora-Alfaro, 2002.

The growth of imported pesticides in Costa Rica was also rapid. During the period 1977-2006 the index of imported pesticides per hectare grew from 8.2kg to 25.8Kg (Chaverri & Blanco, 2002; Chaverri & Soto, 2001; De la Cruz *et al.*, 2009). Imported pesticides per agrarian hectare increased 314% during the same period (De la Cruz *et al.*, 2009). By 2004 Costa Rica had become the main consumer of pesticides in Central America, not only in terms of active ingredient per inhabitant (2.5 kg) and agrarian worker (37.2 kg) but also per hectare cultivated (22kg/ha) (De la Cruz *et al.*, 2004). In 2006, Costa Rica imported 4.4 times more pesticides than in 1977 while the farmed area was only 30% larger than the 1977 area (Chaverri & Blanco, 2002; Chaverri & Soto, 2001; De la Cruz *et al.*, 2009). More significant was the great array of pesticides imported during this period. Between 1970 and 1990, Costa Rica imported a total of 404 different active ingredients (Hilje *et al.*, 1992). In 2000, the number of active ingredients applied reached a maximum of 321, equating to between 220-243 pesticide

products imported per year (De la Cruz *et al.*, 2009). Recent data for 2004 on pesticide application per crop in Costa Rica (kg/ha/year) demonstrate that non-traditional exports like pineapple (24.55), ornamental plants (50.13) or melon (257.83) were treated with a great variety of pesticides each year (De la Cruz *et al.*, 2009). For instance, melon, one of the main NTAEs in Costa Rica, was extremely reliant on both the kilograms of pesticides applied per hectare and the number of different pesticides applied per year (De la Cruz *et al.*, 2004, 2009; Quirós & Jimenez, 1999; SEPSA, 2006).

In summary, new patterns of production induced by outward-looking development in Costa Rica during the 1990s and early 2000s resulted in a significant intensification in the use of pesticides, machinery and other inputs. The process of intensification significantly increased NTAEs in Costa Rica. Yet, it also transformed Costa Rica into a country more reliant on imported inputs, technologies and large firms involved in pesticide importation.¹³

4.2. Transformations in land use: towards more profitable and diversified crops.

The combination of trade liberalisation, export incentives and the expansion of FDI resulted in a significant diversification of primary activities in Costa Rica. From 1994 to 2004 more profitable crops like melon, watermelon, orange, pineapple, palmito and ornamental plants experienced a 100% increase in both harvested area and total production (in metric tonnes). These developments transformed land use in Costa Rica (IFAD, 2004; SEPSA, 2005b). Total cultivated land did not experience significant changes from 1990 (451,015ha) to 2008 (498,079ha). However, the internal dynamic of the sector was transformed as official statistics clearly showed (Bertsch, 2006; SEPSA, 1998, 2008). Whereas the compound annual rate of growth for non-traditional crops

¹³ In 2006, approximately 100 firms were involved in pesticides importation but many merged during the 1990s and early 2000s (De la Cruz *et al.*, 2009).

experienced positive trends from 1990 to 2008, compound annual rates of growth for those crops farmed by small farmers were all negative (see Table 5).

Table 5
Area for main crops (1,000Ha), 1990-2008

	1990	2008	Compound annual rate of growth CARG (%)
TRADITIONAL CROPS	192,716	205,138	0.34
Coffee	105,000	98,681	-0.34
Sugarcane	42,000	57,660	1.78
Banana	28,296	44,313	2.52
Cocoa	17,420	4,484	-7.26
BASIC GRAINS	183,484	80,274	-4.48
Maize	49,381	6,837	-10.40
Rice	67,848	62,411	-0.46
Beans	63,664	11,026	-9.28
NON-TRADITIONAL CROPS:	71,727	201,035	5.90
African Palm	23,183	52,200	4.61
Pineapple	6,050	50,000*	11.76
Oranges	10,757	25,000	4.79
Melon/Water melon	2,375	8,640	7.43
ROOTS AND TUBERS	3,092	11,659	7.65
Yucca	3,092	7,511	5.05
Others	n.a	4,148	
Total cultivated land	451,015	498,079	0.55

Source: Author's calculations from SEPSA, 1998, 2002a, 2008.

* In 2009, El financiero, June 2009.

The impact of the expansion of pineapple productive on land use was particularly significant. With overseas demand for Costa Rican pineapples increasing, no other crop demonstrated similar patterns of growth during the period 1990-2008.¹⁴ Pineapple cultivation in hectares experienced a compound annual rate of growth of 11.76% between 1990 and 2008 (MAG, 2009). The crop was mainly cultivated by a few large

¹⁴ In 2006, 43% of pineapple exports went to USA, 19% to Belgium, 9% to Italy, 9% to Holland, 5% to UK, 4% to Spain, 4% to Germany and 7% to other developed countries (Granados *et al.*, 2005).

producers and TNCs in the Northern Huetar and Brunca regions. Farms located in these areas accounted for 74% of national pineapple production in 2009 (MAG, 2009). Patterns of land use in the Northern Huetar region illustrate the disparity between large and small pineapple producers in Costa Rica. In 2004, nineteen farms of more than 100ha in size accounted for 77% of total pineapple production in the region. In the same year, small holders (0-10ha) accounted for 94% of the farms engaged in pineapple cultivation in the region and 13% of the farming land dedicated to pineapple production (MAG, 2005).

Another non-traditional crop which underwent rapid growth was African palm or palm oil (*elaeis guineensis*). Growing national and international demand for vegetable oil for human consumption, cosmetic production and biodiesel triggered a sharp increase in the number of hectares devoted to this crop during the 1990s and early 2000s (CORFOGA, 2000; SEPSA, 1989; The Costa Rica News, 4 January 2012).¹⁵ The area under cultivation experienced an annual rate of growth of 4.61% during this period. Ornamental plants also showed considerable increases throughout Costa Rica. In the Northern Huetar region 72.34% of producers cultivated ornamental plants on areas less than 4ha. However, this only accounted for 18% of the total area under ornamental plant cultivation in the region in 2007. By contrast, the two groups of much larger producers (between 32.2ha and 64ha and from 64.1ha to 110 ha) accounted for 3.55% and 1.77% of the total number of producers but controlled 47.19% of total farming area devoted to ornamental plants in the Northern Huetar region in the same year (MAG, 2007).

Traditional crops moved in the opposite direction. That is, the amount of land devoted to produce traditional crops such as coffee and basic grains progressively

¹⁵ See Clare (2000, 2011) to understand the changes in African palm agro-food chain in the Pacific region of Costa Rica from 1950-2007.

declined during the 1990s and 2000s. This had a significant impact on family farmers as they were heavily involved in the production of these crops.

Coffee production in Costa Rica involved a significant number of small producers during the 1990s and 2000s. During the recent harvest (2008-2009), 92.3% of coffee producers registered deliveries of less than 100 fanegas to processing firms, which represented 42.5% of national production (ICAFE, 2009; 2010; INEC, 2007).¹⁶ Although coffee remained the main crop in terms of cultivated hectares, the number of producers significantly decreased between 1998-1999 and 2008-2009. Increasing emphasis and support for export-led growth and non-traditional crops clearly affected coffee producers from the early 1990s. Added to this, the international crisis in coffee prices in the early 2000s resulted in significant economic losses for Costa Rican coffee producers between 2000 and 2004 and the subsequent abandonment of many coffee plots (Bertsch, 2004; ICAFE, 2009, 2010; INEC, 2007). In addition, during the 1990s and early 2000s rural development policies aimed to group producers of the same agro-food chain and create products with more value added with higher export potential. Consequently, between the harvests of 1998-1999 and 2008-2009, the number of coffee processing plants, export enterprises, and toasting firms significantly increased.¹⁷ By contrast, during the same period, the number of coffee producers decreased from 72,942 to 50,627 (ICAFE, 2009, 2010; INEC, 2007).

In the case of basic grains (see Table 5) from 1990 to 2008 land devoted to maize production declined significantly and the number of hectares devoted to rice also dropped. The land used for beans fell from 63,664ha in 1990 to 11,026ha in 2004 (SEPSA, 2004), with the number of beans producers declining from 21,500 to 8,000

¹⁶ Unit of volume (which equals 22.5 litres or, in some regions, 55.5l). It can also be a unit of area (which equals 0.66 hectares) or a unit of weight (92kg).

¹⁷ Coffee processing plants increased from 94 to 145, export enterprises from 44 to 65, and toasting firms from 35 to 55 (ICAFE, 2009, 2010; INEC, 2007).

(Salazar, 2004). Between 1985 and 1993 white maize in the Brunca region (one of the main regions for basic grains production) declined by 21,000ha, while in the Huetar Atlantic region white maize dropped by 19,000ha. In the Atlantic region the great majority of peasants who abandoned white maize production became employees in large banana plantations. The rest, medium and small farmers, shifted from white maize production to non-traditional crops such as export-led roots and tubers within agriculture conversion programmes (MAG, 2005).

Outward-looking development also affected the internal dynamic of the livestock sector. During the period 1990-2008, price liberalisation and subsidised grain imports of maize and soya (the results of trade liberalization) fuelled the expansion of the poultry sector. At the same time, meat production stagnated (see Table 6). The extensive activity of raising beef cattle moved towards more intensive practices such as dairy production (which experienced a compound annual rate of growth of 4.14%). ‘Dual purpose cattle’ (for meat and milk production) was the avenue followed by many small Costa Rican farmers who continued to raise cattle (CORFOGA, 2000; SEPSA, 2002a; 2002b).

Table 6

Volume of livestock production (1,000 metric tonnes)

Activities	1990	2008	CARG (1990-2008) %
Bovine	87.5	87.5**	0.00
Pork	14.3	51.8	7.4
Poultry	43.0	106.6	5.2
Dairy (ELF)*	429.0	889.9	4.1

Source: Author’s calculation from SEPSA, 1998, 2008.

*ELF Equivalent fluid milk

** Basically the same amount because this figure includes dual purpose cattle.

These changes in the use of land clearly influenced employment opportunities in the sector. The lack of new, adequate and well remunerated sources of employment in traditional agriculture generally spread across Costa Rica from the early 1990s. During the period 1990-2008, the percentage of Costa Rica's economically active population (EAP) engaged in primary activities declined from 25.3% to 12.3%. During the same period, the unemployment rate in agriculture almost doubled from 2.5% to 4.4% (SEPSA, 1997a, 2008). These trends reduced income and employment opportunities for small farmers with difficult access to markets and other basic assets.¹⁸

Yet, trade related services and agroindustries linked to booming NTAEs became the principal source of employment in rural Costa Rica during the period under investigation (IICA 2006; Pomareda, 2004; Mora-Alfaro, 2005). Whereas agriculture progressively offered fewer opportunities for family farmers as the main source of income in rural Costa Rica, RNFA began to diversify activities and employment for small farmers and rural inhabitants (MAG, 2012; Pomareda, 2004, 2006). From 1990 to 2008, the total employed population in rural areas experienced a compound annual rate of growth of 1.52%. Whereas the compound annual rate of growth for the employed population (EP) in agriculture was minus 0.48%, RNFE showed a compound annual rate of growth of 2.87% (INEC, 2009; SEPSA, 1997b, 2004). Dirven (2004) shows that the weight of RNFE in Costa Rica was the highest in Latin America in the mid-2000s. RNFE accounted for 65.8% of the employed population in rural areas in 2004 compared

¹⁸ The level of employment in Costa Rican agriculture varied seasonally, showing high levels of underemployment and widespread reliance on family labour. The stability of the agricultural workforce also varied and the increasing desire to avoid social security payments augmented the number of seasonal, undocumented and unskilled workers (principally migrants from Nicaragua; as shown by fieldwork developed in the Northern Huetar region in banana companies) (Mora-Alfaro, 2005; SEPSA, 2005a, 2005b).

to 34% and 51.9% in Chile and Mexico respectively.¹⁹

In sum, Costa Rica's total agricultural land area did not vary drastically from 1990 to 2008. However, new patterns of agricultural production and policy guidelines transformed land uses throughout the country. Whereas rice, maize, beans and coffee cultivation significantly declined during the period 1990-2008, the harvested area of non-traditional crops such as pineapple and African palm significantly increased (Bertsch, 2004, 2006). Agriculture and export diversification was therefore an important outcome of outward-looking development with important transformations in the internal dynamic of the sector. These developments enhanced employment opportunities for rural inhabitants in agriculture and its related activities.²⁰ Yet, evidence available on employment per sector seems to indicate that outward-looking development created limited opportunities for small farmers from the early 1990s. Whereas small farmers' participation in agricultural activities decreased, the percentage of unskilled workers in agriculture grew during the 1990s and early 2000s. Moreover, employment opportunities in NTAEs seemed to be less significant than is generally assumed. In 2000, these activities employed 15.8% of the agricultural workforce in Costa Rica where 71% of national producers were small and medium farmers, generally unremunerated or self-employed workers (Barrantes, 2006; INEC, 2000; Trejos, 2000). Specifically, RNFE reorganised the structure of Costa Rica's rural labour force. This created a number of job opportunities, a more diversified income stream and a varied salary scale for unremunerated and self-employed workers in rural areas (INEC, 2009; Morales & Castro, 2006). Yet, RNFE may have also led small holders to abandon agricultural production and sell their plots to much larger producers and TNCs. In other cases, structural asymmetries, poor infrastructure in rural areas and/or lack of skills may

¹⁹ RNFE varied from commerce, agricultural related services, and inputs delivery to ecotourism activities (Pomareda, 2006).

²⁰ As studied in chapter 3 of this PhD thesis, p.123-127.

have hindered small holders' opportunities to secure access to RNFA and diversify their income streams. Overall, there is not sufficient data available to evaluate which of these effects was the most important in the case of Costa Rican small farmers.

4.3. Changes in land ownership: the emergence of two agricultural worlds.

Export-led growth and NTAEs promotion not only diversified agricultural activities, they also provoked a series of transformations in the ownership of land in Costa Rica. This became particularly apparent in the late 1980s. Leonard (1986) shows that in 1986 3.5% of Costa Rica's farms were large units with more than 200ha and 84.3% of farming lands were medium and small farms of less than 50ha. He shows that the majority of more productive and fertile lands belonged to large farmers and transnational corporations. Small and medium farmers held less fertile soils, forestry lands or poor plots on slopes and commonly deforested areas (CADETI, 2003; González-Mejía, 1997).

There are few studies that analyse the internal changes experienced on landholdings producing different crops in Costa Rica during the 1990s and early 2000s. The last agricultural census in Costa Rica was undertaken in 1984. However, more recent studies based on regional censuses, SEPSA data, and interviews with specialists in different crops illustrate the general transformation experienced in land ownership throughout Costa Rica. Berstch (2006) shows the disparities between the land cultivated in 2002 per crop and the type of crops cultivated by different type of owners.²¹ This analysis shows that in the case of non-traditional crops, cultivation became increasingly dependent on farm workers and land ownership was concentrated in the hands of a few

²¹ Given the last agricultural census was produced in 1984, Costa Rica does not have recent data on land structures at the national level. Some studies that seek to understand the extent to which TNCs and large plantations control land structures have been undertaken since the early 1990s. For example Berstch, 2006 estimates data from SEPSA, 2003 and also undertakes specific interviews with specialists in each crop. The author also uses national and regional censuses on specific crops.

private owners and TNCs. For example, in 2002 three transnational pineapple producers farmed 6,200ha of land and employed 4,340 agricultural workers. In the same year, 200 small pineapple producers had an average plot of 8.5ha (see Table 7) (Bertsch, 2004, 2006). In the case of melon and water melon, in 2002, 8,400ha were large farms owned by 10 producers with an average size of 840ha. Meanwhile, small farms of melon and water melon owned by 100 small producers averaged 1ha. Orange production showed similar trends: 15,600ha of land belonged to five producers in 2002. While the average size for large farms was 3,120ha, the average size of small farms producing oranges was 1.4ha (Bertsch, 2006).

Table 7
Comparison of the two different agricultural worlds in 2002

Agrarian worlds	Land cultivated in 2002 (Ha)	Farmers who own the land	Average Farm size*	Employees
COFFEE				
Large farms	>12ha: 40,000Ha	1,000	40 Ha	8,000
Small farms	<12 ha: 73,130Ha	62,000	1.17Ha	0
BANANA				
TNCs	17,000Ha	4	4,250Ha	25,500
Independent producers	25,182Ha	92	273.7Ha	25,182
Organic	03-4ha: 4,000Ha	1,500	2.6Ha	0
SUGARCANE				
Large farms	>63ha: 27,650Ha	54	512Ha	5,333
Medium farms	6,6-63ha: 10,700Ha	630	16.9Ha	1,189
Small farms	<6,6ha: 9,650Ha	7,918	1.21Ha	
AFRICAN PALM				
Large producers	21,700Ha	1	21,700Ha	2,240
Independent producers	2-420ha: 5,000Ha	300	16.6Ha	357
20 cooperatives	<20ha: 15,780Ha	1,600	9.86Ha	1,127
ORANGE				
Large producers	>300ha: 15,600Ha	5	3,120Ha	390
Medium producers	30-300ha: 4,800Ha	50	96Ha	240
Small producers	<30ha: 5,600Ha	4,000	1.4Ha	4,000
PINEAPPLE				
TNCs	>1000ha: 6,200Ha	3	2066.6Ha	4,340
Large National producers	>75ha: 7,600Ha	20	380Ha	5,320
Small producers	<5-20 ha: 1,700Ha	200	8.5Ha	0
MELON AND WATERMELON				
Large farms	>75-80ha: 8,400Ha	10	840Ha	8,400
Small farms	<2ha: 100Ha	100	1Ha	0
MANGO				
Large farms	>100ha: 650Ha	2	325Ha	13
Medium farms and cooperatives	30-100ha: 600Ha	40	15Ha	600
Medium and small farmers	<20ha: 6,550Ha	1,275	5.13Ha	
PALMITO HEARTS				
Larger farms	>20ha: 3,655Ha	38	96.2Ha	731
Medium	5-20ha: 2,295Ha	222	10.3Ha	459
Small	<5ha: 2,550Ha	1,012	0.25Ha	0
CHAYOTE				

Large producers	>100ha: 100Ha	1	100Ha	200
Medium and small producers	<10ha: 455Ha	375	1.21Ha	910
YUCCA				
Large farmers	>100ha: 1,813Ha	20	90.65Ha	1,813
Medium and small farmers	<10ha: 7,000Ha	2,250	3.1Ha	0
ROOTS				
Large producers	>100ha: 1,324Ha	13	101.8Ha	1,324
Medium and small producers	<10ha: 5,400Ha	2,700	2Ha	0
RICE				
Large	>200ha: 26,000Ha	60	433Ha	1040
Medium	51-200ha: 11,849Ha	140	84.6Ha	474
Smaller	<50ha: 10,000Ha	500	20Ha	0
BEANS				
Large producers (Mechanised)	20-500ha: 9,500Ha	200	47.5Ha	380
Medium producers (covered)	3ha: 3,088Ha	1,000	3.08Ha	4,750
Small producers (espequeado)	0,5-4ha: 9,500Ha	7,800	1.21Ha	
MAIZE				
National Consumption	6,776Ha	3,000	2.25Ha	1,500

Source: SEPSA, 2003, Bertsch, 2006. *Author's estimation from SEPSA, 2003 and Bertsch, 2006.

Considering traditional crops such as coffee (Costa Rica's traditional crop par excellence), in 2002, 1000 large landowners owned farms which averaged 40ha in size. In the same year, 62,000 small farmers owned plots of land which averaged just 1.17ha (Bertsch, 2004, 2006). In the case of basic grains, outward-looking development principally affected small farmers who produced white maize and rice. The evolution of basic grain producers in Central America (see Table 8) shows that Costa Rica experienced the most drastic decline in the number of basic grain producers from the late 1980s. Specifically, from 1987 to 2005/07, the number of basic grain producers experienced a compound annual rate of growth of -8.51 (Baumeister, 2010).

Changes in land structures had a direct impact on the income levels of producers. Pomareda (2002) distinguishes three groups of producers with highly differentiated income levels engaged in agricultural activities during the early 2000s. The first group was formed of landless workers and smallholders who lived on the border of poverty. They owned farms of less than 3ha, practiced rainfed agriculture (outside the Central Valley) and depended on non-farm incomes (Arias, 2005; González Mejía, 1997).²² The

²² Interviews in the Northern Huetar, Brunca and Central Pacific regions developed from May to June 2009 showed that these producers harvested low value added crops and livestock for selfconsumption.

second group were small and medium size farmers with plots ranging from 3ha to 10ha who shifted to non-traditional crops and obtained profit margins that varied considerably (Barrantes, 2006; Pomareda, 2002). According to Pomareda (2002), the magnitude of net income per hectare in this segment was in the following descending order: ornamentals, vegetables, pineapple and banana. Within this group there were also farmers engaged in traditional crops like coffee, sugar cane, rice and milk production. Farms devoted to dual-purpose cattle were among the least profitable (CORFOGA, 2000). The third group were larger farms and TNCs usually producing African palm, pineapple, banana and other non-traditional crops who obtained substantial incomes.

Table 8
Central America: evolution of basic grains producers (1,000)
1987-2005/07

Countries	1987	2005-07	CARG (1987-2007) (%)
Guatemala	486	941.8	3.36%
El Salvador	271.4	155	-2.8%
Honduras	377.7	385.1	0.1%
Nicaragua	153	289.3	3.24
Costa Rica	45	7.6	-8.51%
Panama	84	115.7	1.61%
TOTAL	1,417.1	1,894.5	1.46%

Source: Baumeister, 2010.

Considering the incomes obtained by self-employed and unremunerated workers (whom, according to CEPAL, can be grouped together as small rural producers),

They generally belong to IDA settlements and combine rural and non-rural activities (e.g. econ and agro-tourism). Their annual incomes are below the minimum salary in Costa Rica (approximately 150\$/per month) and face many difficulties to get access to basic assets and infrastructures.

Interview with Ana Gissele Hidalgo, North region fieldwork, IDA, San José, Costa Rica, 26-27 May 2009.

Interview with Lorena Villalobos, Central Pacific region fieldwork, IDA, Costa Rica, 2-3 June 2009.

Berdegú & Schejtman (2008) show a significant increase in poverty levels within this group in Costa Rica during the 1990s and early 2000s. Between 1990 and 2000 the difference between the percentage of poor small farmers and the percentage of poor rural households improved in five countries (see Table 9). Differences ranged from a relative decrease of poor small farmers of 12 percentage points in Dominican Republic to 1 percentage point drop in Venezuela and Bolivia. During the same period, in eight countries differences between the percentages of poor small holders and rural poor worsened. Costa Rica experienced the worst result in Latin America with a relative increase of 22 percentage points of small rural producers in poverty (Berdegú & Schejtman, 2008; CEPAL/PMA, 2004).

Table 9
Latin America: incidence of poverty among small farmers
(differences between % of poor small farmers and
% of poor rural households)
1990-2000 (in percentage points)

Country	1990	2000
Costa Rica	0	+22
El Salvador	+8	+17
Guatemala	-2	+5
Honduras	+2	+5
Nicaragua	+6	+10
Panama	+6	+21
Bolivia	+10	+9
Brazil	+3	-2
Chile	-16	-6
Colombia	+13	+3
Paraguay	+5	+7
Peru	+4	+4
Dominican Republic	+3	-9
Venezuela	-11	-12

Source: CEPAL/PMA, 2004; Berdegú and Schejtman, 2008.

In short, initial transformations of land structures during the 1980s were accelerated by NTAEs promotion and changing production patterns during the 1990s and early 2000s. While agricultural diversification and agroindustrial development were significant outcomes of the new strategy, the extension of non-traditional crops highly dependent on agrochemicals, imported technology and hired workers tended to encourage land concentration with the subsequent impact on income opportunities in the sector (Bertsch, 2004, 2006; Pomareda & Lopez, 2007). In the 1990s and 2000s, Costa Rica's agriculture sector was dominated by a small number of large farmers whose main source of income came from agricultural activities (NTAEs). During the same period, a plethora of small holders progressively abandoned agriculture (as their main source of income) (Mora-Alfaro, 2005; Pomareda & Lopez, 2007). These developments worsened social equity and food self-sustenance in rural Costa Rica. They created two polarised agricultural worlds with highly heterogeneous economic features and income opportunities, physical characteristics and diverse social structures competing in the same sector (Pomareda & Lopez, 2007). Whereas large farms and TNCs obtained significant incomes from NTAEs, small farmers experienced a significant reduction in the incomes they secured from traditional crops and basic grains. Basic grain producers were particularly badly affected by the lack of incomes from these activities, falling into poverty in many cases during the early 2000s.

4.4. Changes in food security patterns: increasing food import dependency.

Declining public funding, credit and other resources progressively dismantled the support available for small farmers during the 1980s and 1990s. In the early 1980s, the USAID PL-480 US Food Programme (implemented between 1982 and 1987) and its massive donations of wheat, corn and rice (totalling US\$117 million) affected local

white maize production and prices in Costa Rica (CENAP *et al.* 1988; USAID, 1986, 1989). Between 1990 and 1997 public and private bank support for small farmers plunged from 1.11 billion to 37.5 million of current colones (SEPSA, 1997a). In the case of basic grains, although total support for rice increased from 1.06 billion in 1990 to 1.33 billion in 1997, the support available for beans and maize decreased sharply (see Table 10) (Conroy *et al.*, 1996).

Table 10
Public and private banks support per sector
1990-1997 (millions of current colones)

Activity	1990	1997
TRADITIONAL CROPS	4,590.1	2,681.7
BASIC GRAINS	1,200	1,349.1
Rice	1,062.9	1,334.9
Beans	66.2	7.5
Maize	26.6	6.7
Sorghum	2.3	0.0
Soya	0.0	0.0
FRUITS	257.6	43.0
SMALL FARMERS	1,110.6	37.5
OTHER ACTIVITIES AND NTAES	523.5	1,178.3

Source: SEPSA, 1997b.

These measures coupled with other cuts in public spending in agriculture (already explained in section 2), the reorganisation of public agricultural institutions, and the massive reductions of basic grains tariffs opened national borders to artificially cheap and lower quality food imported from developed countries (FAO, 2006). Consequently, national staple production and producer numbers declined significantly. In less than twenty years (from 1987 to 2005-2007) the number of basic grain producers in Costa Rica dropped from 45,000 to 7,600. This fall was the highest decrease in the Central American region (RUTA-AECID-FAO, 2007; SICA, 1981). As González Mejía (1997) notes, from 1985 to 1995 basic grains experienced a 40% decrease in total production

levels. Indeed, Costa Rica experienced the lowest rate of food production in the whole of Latin America during the 1990s (CEPAL, 1994; FAO, 2004, 2007). Although nutritional and social indicators were better in Costa Rica than in the rest of Central America, the capability of small farmers to feed the national population became the weakest in the region.²³ FAO (2004) country statistics show that whereas average cereal production (1,000MT) in Costa Rica experienced a -5% change from 1979-81 to 2001, in Central America and the Caribbean, and in the rest of the world, average cereal production increased 35% and 32% respectively (FAO, 2007).

Table 11
Degree of reliance on basic grains
(percentage of imported cereals for national consumption)
1995-2007

Crops	1995	2007/a
Rice	30.1%	50.0%
Beans	16.7%	78%
Maize (yellow and white)	94.6%	97.8%
Wheat	100.0%	100.0%

Source: SICA, 2009. a/ preliminary data for 2007.

During the 1990s and early 2000s the dismantling of cereal production and the excessive emphasis on NTAEs promotion and agribusiness development in the agricultural sphere transformed Costa Rica into a country that was extremely reliant on imported food to cover internal nutritional requirements (FAO, 1999, 2007, 2009). Basic grains production available for national consumption dropped sharply. In a little over ten years, between 1995 and 2007, the degree of reliance on imported rice

²³ According to FAO data (2007) Costa Rica's prevalence of undernourishment was lower than 5% in 2005-07 compared to 15% in Central America.

increased from 30.1% to 50%; on imported beans from 16.7% to 78%; and, on imported maize from 94.6% to 97.8% (SICA, 2009).²⁴

These trends were reflected in the evolution of other food crops produced for national consumption. Based on FAO country statistics (2009), Table 12 shows the evolution of ratios of imported food (per group) (kilograms/person/year) in Costa Rica from 1990-92 to 2005-07. Between these two periods the ratio of imported cereals increased by 22 percentage points and the rest of the food groups showed similar trends. For example, pulses increased 69.2 percentage points; oilcrops 19.1, vegetables increased 12.0 percentage points, meat 3.2 percentage points and animal fats 2.8 percentage points (FAO, 2009). Even among those products internally (and extensively) produced in Costa Rica such as milk, meat, vegetables, fruits, sugar and vegetable oils the ratios of imported food increased substantially.

These patterns might be a logic consequence of export-led growth with the subsequent positive impacts of agriculture diversification and promotion of more lucrative activities in a small developing economy like Costa Rica. The problem of increasing food import dependency appears when a small developing country where small basic grains production has been largely dismantled had to face an external shock. On the eve of the global food crisis, when the incomes from roots and yucca exports (NTAEs that amounted to US\$17-28 million in 2006) and other NTAEs like pineapple and African palm were not sufficient to cover 50% of basic grains imported (US\$90 million), Costa Rica's food dependency became abundantly clear (Pomareda, 2006).

²⁴ Chapter 3 of the thesis (p.132-137) based on SEPSA data for 1990-2008 and RUTA-AECID-FAO, 2007, analysed the relationship between the types of producers per sector and the trends in compound annual rates of growth of yields (metric tonnes/ha). Although the average yields of crops oriented towards local markets and produced by small/medium farmers generally experienced lower compound annual rates of growth than the average of main crops from 1990 to 2008, there were some exceptions in the case of sugar cane, maize and beans. These basic grains experienced higher yields than many non-traditional crops. In the case of NTAEs, only pineapple obtained much larger average yields than the average.

The rising trend in international food prices accelerated in 2008, doubling international wheat and maize prices in the space of two years and tripling international rice prices in just a few months (IFPRI, 2011).²⁵ Such rapid increases in international food prices raised concerns about the impacts on the world's poor (World Bank, 2009).²⁶ This was also true in Costa Rica where rapidly rising international food prices demonstrated the country's deep dependency on imported food. The dismantling of basic grains production and producers (during the 1990s), the lack of competitiveness of national food producers and the high degree of agricultural intensification strongly dependent on imported inputs and fuel worsened the consequences of the crisis for Costa Rica.

Table 12
Costa Rica's ratios of imported food (kilograms/person/year)*

In percentage terms

Food groups	1990-92	2005-07	Difference in percentage points (2005/07-1990-92)
Cereals - Excluding Beer	65.2%	87.5%	22.3
Starchy Roots	0.26%	6.32%	6.0
Sugar & Sweeteners	1.96%	6.88%	4.9
Pulses	12.7%	81.9%	69.2
Oilcrops	62.8%	81.86%	19.1
Vegetable Oils	1.6%	9.83%	8.2
Vegetables	3.74%	15.8%	12.1
Fruits - Excluding Wine	0.7%	3.5%	2.8
Stimulants	0.78%	7.85%	7.0
Meat	0.2%	3.47%	3.2
Offals	6.25%	16.6%	10.3
Animal Fats	1.96%	4.76%	2.8
Milk - Excluding Butter	2.96	3.86%	0.9
Eggs	0.82%	2.9%	2.1
Spices	9.09%	23.07%	13.9

Source: Author's calculation from FAO country statistics, 2009.

*Estimated from total food production per group of products and total food imported per group of products.

²⁵ Wheat prices increased by 181% over the 36 months prior to February 2008, and overall global food prices increased by 83% over the same period (Mitchel, 2008; World Bank, 2009). Increased bio-fuel production has contributed to the rise in food prices.

²⁶ Surveys show that poor households spend at least half of their budget on food (World Bank, 2009). If rural households do not earn income from producing or selling food, then a doubling of food prices would equate to at least a 25% income loss (World Bank 2009).

Within this context, the government began to rethink the national model of ‘food insecurity’ (PNA, 2008).²⁷ Reactivating basic grains production and internal food markets, the Costa Rican government created The National Food Programme (PNA) and the Integral Food Programme (PIA) with particular focus on more vulnerable and poor families in rural areas (IDA-CNP, 2009; MAG, 2008; PNA, 2008). Providing access to resources, the National Food Programme aimed to recover national producers of basic grains and re-establish the managing role of the National Production Council (CNP). Yet, it is difficult to rediscover the role of basic grains producers after more than two decades of promoting NTAEs. In 2009, the CNP was still far away from recovering its role in national cereal production. Although it is too early to know whether the measures that have been introduced since 2008 will change the nature of the Costa Rican agricultural export-led strategy, specific policies and support towards small farmers have not changed significantly in the opening years of the Chinchilla administration (2010-2014). The main goals of agricultural policies of the government are the following: increase export-led agricultural competitiveness, promote innovation and technological development and improve the management of rural areas (MAG, 2010). Small farming and food security are just one of the strategic areas to improve the management of rural areas in Costa Rica (MAG, 2010).

²⁷ Different civil servants interviewed at SEPSA, MAG, IDA, CNP or FAO recognised the problems of Costa Rica’s food insecurity matrix. They specially stressed the problems of dismantling basic grains production with significant relevance during the 1960s and 1970s and high productivity levels.

For example interview with José Joaquín Rodríguez, CNP, San José, Costa Rica, 17 June 2009; interview with Juan Manuel Cordero, CNP, San José, Costa Rica, 17 June 2009.

5. CONCLUDING REMARKS.

During the early 1990s and early 2000s Costa Rica shifted to export-led growth and NTAEs promotion. The overall economic strategy was based on trade liberalisation and FDI attraction. In the agriculture sector policies became subordinated to the overall economic model; productive conversion programmes and rural development strongly supported NTAEs and agroindustrial growth. Costa Rica was particularly successful at diversifying the export structure (reducing the country's long-standing dependency on traditional export agriculture), attracting FDI in secondary and tertiary activities and creating significant opportunities in RNFA. Yet, support for traditional small farming (both private and public) was progressively dismantled during the eighteen year period (1990-2008) with the subsequent impact on national food production (Pomareda, 2002; SEPSA, 2002a, 2005).

Although production was intensified to raise competitiveness, Costa Rican agriculture became highly dependent on foreign technology, inputs and machinery. Institutions oriented towards the promotion of agricultural production for the domestic market experienced significant reductions in their budgets. These reductions implied a decline in support for small farmers, limiting their ability to obtain inputs and technologies not only to engage in NTAEs but also to produce food for national consumption. At the same time, Costa Rica became dependent on foreign companies to secure access to technology and agricultural inputs.

Changing production patterns and NTAEs promotion also transformed land use throughout Costa Rica. Although the total amount of land under cultivation did not vary significantly from 1990 to 2008, Costa Rica experienced an important shift from traditional to non-traditional crops in terms of land cultivation. Whereas agricultural diversification importantly increased, the internal dynamic of the sector was

transformed. After more than two decades of neoliberal reform, the agriculture sector had become highly polarised. On one hand, big enterprises and a handful of landowners dominated non-traditional agricultural export production and obtained significant incomes from these activities. This group of producers was extremely reliant on hired workers and imported technology and inputs. On the other, traditional crops strongly supported by the state during the ISI period, declined significantly in terms of the number of producers and small farms with the subsequent impact in their income levels. These transformations had a clear impact on national food production.

Although it is frequently stressed that small countries cannot feed themselves and they need imports to counteract deficiencies in their local production systems, Costa Rica shows the problems of food import dependency. The contemporary general opinion is that large-scale corporate farms have a pivotal role in producing enough food for less developed countries. However, the expansion of large farms and TNCs increased food import dependency in Costa Rica during the 1990s and 2000s. This paper has illustrated that outward looking development ended up economically and socially displacing basic grain producers from national food systems. On the eve of the global food crisis the income obtained from NTAEs in Costa Rica was not enough to cover food imports for national consumption. External shocks such as the global food crisis (2007-2008) demonstrated the vulnerability of Costa Rica's food 'insecurity' model.

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LIST OF ACRONYMS

BCCR	<i>Banco Central de Costa Rica</i> Central Bank of Costa Rica
CAT	<i>Certificados de abono tributarion</i> (Tax certificates)
CACM	Central American Common Market
CARG	Compound Annual Rate of Growth
CEPAL/ECLAC	<i>Comisión Económica para América Latina y el Caribe</i> (Economic Commission for Latin America and the Caribbean)
CIEX	<i>Certificados de incremento a las exportaciones</i> (Certificates of Export Increase)
CNP	<i>Consejo Nacional de Producción</i>
DR-CAFTA	Dominican Republic- Central America Free Trade Agreement
FDI	Foreign Direct Investment
GATT	General Agreement on Tariffs and Trade
IDS	<i>Indice de Desarrollo Social</i> (Costa Rica) Social Development Index
IFPRI	International Food Policy Research Institute
INEC	<i>Instituto Nacional de Encuestas y Censos</i> (Costa Rica) National Institute for Censuses and Surveys
ISI	Import Substitution Industrialisation
IDA	<i>Instituto de Desarrollo Agrario</i> (Institute for Agricultural Development)
ITCO	<i>Instituto de Tierra y Colonización</i> (Institute for Land and Colonisation (later converted into IDA))

MAG	<i>Ministerio de Agricultura y Ganadería</i> (Costa Rica) Ministry of Agriculture and Livestock
MIDELPLAN	<i>Ministerio de planificación nacional y política económica</i> (Costa Rica) Ministry for Economic Planning and Economic Policy
NTAEs	Non-Traditional Agrarian Exports
PIA	<i>Plan Integral de Alimentos</i> (Costa Rica) The Integral Food Programme
PNA	<i>Plan Nacional de Alimentos</i> (Costa Rica) National Food Programme
RNFE	Rural Non-Farm Employment
RNFA	Rural Non-Farm Activities
SAPs	Structural Adjustment Programmes
SEPSA	<i>Secretaría Ejecutiva de Planificación Sectorial Agropecuaria</i> (Costa Rica) State Agency for Agricultural Planning
SIDES	<i>Sistema de Indicadores de desarrollo sostenible</i> (Costa Rica) System of Indicators on Sustainable Development
TNCs	Trans-national Corporations
WTO	World Trade Organisation
WFS	World Food Summit

APPENDIX I



Costa Rica is divided into five regions (Brunca, Central, Huetar Atlántica, Northern Huetar and Chorotega) comprise of 81 cantons and 469 districts (excluding Isla del Coco) each with different levels of development. The Central region (formed of San José, Alajuela, Heredia and Cartago) is the most developed area in Costa Rica. Of the 173 districts with relatively high levels of development in the country, 163 belong to the Great Metropolitan Area (GMA), which is situated in the Central region, and 10 are located nearby in the Alajuela province. The remaining districts exhibit much lower levels of development and are located in rural areas outside the Central region (MIDELPLAN, 2007). According to the Social Development Index²⁸ there is an inverse relationship between population density (especially high in the GMA and low in rural areas) and relative levels of development. Areas classified as relatively more developed

²⁸ The Social Development Index (IDS) derives from a Ministry of Development and Planning (MIDELPLAN) effort to build a System of Indicators on Sustainable Development (SIDES) to capture environmental, social and political dimensions of economic development. Among SIDES social indicators, IDS summarises and measures geographical gaps between different cantons and districts on levels of development. Its high level of disaggregation can mirror the different impacts of the model per district or canton in all the regions and provinces of the country (MIDELPLAN, 2007).

account for 53.9% of the population and occupy 5.4% of the national territory (MIDELPLAN, 2007). Most of them are located in the Central Valley. By contrast, relatively less well developed areas located in rural areas outside de Central Valley account for 94.6% of the total territory of Costa Rica but only 46.2% of the population (MIDELPLAN, 2007).

APPENDIX II

Free Trade Agreements signed by Costa Rica before 2008

- *General Treaty of Central American Economic Integration (since 1964).*
- *Trade Agreement with Panama (Law 5252, since 1974).*
- *WTO (Laws 7473 y 7475, since December 1994).*
- *Free Trade Agreement (FTA) with Mexico (Law 7474, from the 1st of January 1995)*
- *FTA with Chile (Law 8055, since the 15th of February 2002)*
- *FTA with Dominican Republic (Law 7882, since the 7th of March 2002)*
- *FTA with Canada (Law 8300, from the 1st of November 2002)*
- *FTA with CARICOM (Law 8455, from the 15th November 2005.)*
- *FTA with Central America/USA/Dominican Republic, DR-CAFTA (January 2009)*
- *FTA with Panama (since 2008)*

Source: PROCOMER, 2009.