

The Post-war International Food Order: The Case of Agriculture in Colombia

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Abstract: *Since the post-war period, Colombian agriculture has been reshaped mainly by international measures. The post-war international food order (called food regime) over time has exacerbated Colombian rural problems linked to land issues. Emphasizing in five groups of crops (Cereals, Fruits, Pulses, Roots and Tubers, and Vegetables) this article found how Colombia has turned from being a self-sufficient producer into a net importer. Consequently, the food regime has reshaped agricultural structures where policies have favored certain groups rather than solving land issues. Bio-fuel crop policies are following the same direction, jeopardizing food sovereignty and deepening rural Colombian problems.*

Keywords: *Land Use, Agriculture, Global Food Order. JEL Classification: Q10, Q15, Q18.*

El orden alimentario internacional de la posguerra: el caso de la agricultura en Colombia

Resumen: *Desde la posguerra, la agricultura colombiana se ha transformado principalmente por preceptos internacionales. El orden alimentario internacional de la posguerra (llamado régimen alimentario) ha exacerbado los problemas rurales colombianos relacionados con la tierra. Al hacer hincapié en cinco grupos de cultivos (cereales, frutas, legumbres, raíces y tubérculos, y vegetales), este artículo encuentra que Colombia ha pasado de ser un productor autosuficiente a un importador neto. Consecuentemente, el régimen alimentario ha transformado las estructuras agrícolas favoreciendo ciertos grupos en vez de resolver los problemas de la tierra. Los cultivos de biocombustibles apuntan en la misma dirección poniendo en jaque la soberanía alimentaria y profundizando los problemas rurales en Colombia.*

Palabras clave: *Uso de la tierra, agricultura, orden alimentario internacional. Clasificación JEL: Q10, Q15, Q18.*

L'alimentation mondiale dans l'après-guerre : le cas de l'agriculture colombienne

Résumé : *Depuis l'après-guerre, l'agriculture colombienne a été principalement remodelée par les politiques internationales. L'adoption de la politique alimentaire internationale d'après-guerre (couramment appelé food regime) est aggravé les problèmes ruraux en Colombie, notamment ceux liés à l'utilisation des sols. À partir de cinq types de récoltes (céréales, fruits, grains, tubercules et légumes), nous montrons que la Colombie n'est plus un producteur autosuffisant mais un importateur net. Par conséquent, la politique alimentaire a modifié les structures agricoles tout en favorisant certains récoltes plutôt que résoudre les problèmes associés à l'utilisation des sols. Les politiques relatives aux biocarburants ont les mêmes effets, ce qui entraîne, d'une part, la perte de souveraineté alimentaire du pays et, d'autre part, l'approfondissement de ces problèmes ruraux.*

Mots clé : *Utilisation des sols, agriculture, politique alimentaire. Classification JEL : Q10, Q15, Q18.*

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Introduction

The development in different economic sectors, such as that of the agricultural sector, has reduced the risk of global food shortages and has created a new global food order focused on extensive production, distribution and consumption. The agricultural sector has been reshaped into two main groups of countries represented by the North and the South. Hence, agriculture has turned into a commodity system where cheap food policies have encouraged the growth of urban populations dependent on food as a commodity, and where land and labor have become commodities.

This tendency has been called the post-war international food regime. The Food for Aid Program (FAP), the Green Revolution (GR) and the Alliance for Progress (AFP) are deemed to have been the beginning of this tendency, mainly following internal policies of the United States. These programs have helped to

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create an international division of labor and consequently restructured Third World agriculture, quite often having forgotten the social component of agriculture: peasant families, small-scale farmers and rural dwellers. Colombia has followed these tendencies under the idea of modernization of agriculture (this model depends on massive government subsidies given to the private sector and on environmentally-destructive technologies). Modernization that has turned agriculture in Colombia from producing traditional agricultural products to promoting non-traditional agricultural exports (certain fruits and vegetables) and more recently, bio-fuel crops which have brought about several environmental issues, food sovereignty¹ risks, commodification of land, and displacement of peasants from their direct production of food, pushing them to urban areas (Grassroots, 2007).

The post-war international food regime (called Modernization) has brought about a high level of dependency on cereal imports, technology and agrochemical inputs. The modernization has consolidated the bimodal agrarian structure in Colombia and has forgotten the internal land conflict. Instead it seems like landholders and agribusiness have used modernization policies and land conflicts to accomplish particular aims in sectors such as mineral extraction and agricultural production (Richani, 2005). This tendency still persists into the present day because the government is promoting “the cultivation of bio-fuel crops, especially in areas mainly dominated by paramilitaries, big landholders² or illegal groups” (Tenthoff, 2008, p. 5). In spite of these arguments, the main agricultural issues lay in the history of policies applied by the Colombian government since the post-war period began.

1 Food sovereignty is the peoples', countries' or state unions' right to define their agricultural and food policy, without any dumping with regard to Third World countries as well as the right to produce their basic foods in a manner respective of cultural and productive diversity (*Vía Campesina*, 2003). Food sovereignty includes: (i) the prioritization of local agricultural production and access of peasants and landless people to land, water, seeds, and credit; (ii) the right of farmers and peasants to produce food and the right of consumers to be able to decide what they consume, and how and by whom it is produced; (iii) the right of countries to protect themselves from too low-priced agricultural and food imports; and (iv) the population taking part in agricultural policy choices (*Vía Campesina*, 2003; McMichael, 2004). Furthermore, food sovereignty represents an alternative principle to food security different to the concept defined by the food regime. Not the anti-thesis of food security, rather, food sovereignty is a premise for genuine food security, since “food is first and foremost a source of nutrition and only secondarily an item of trade” (McMichael, 2004, p. 62).

2 Such is the case of sugarcane production in the Cauca Valley. The conglomerate Ardila Lülle is the principal promoter of ethanol production in Colombia. Their plantations produce 65% of all Colombian sugar-based ethanol, while Manuelita Plantation and Mayagüez Plantation produce the remaining 20% and 15% respectively (Grassroots, 2007, p. 40).

The aim of this article is to expose that historic problems linked to land concentration, and exclusion, are intertwined with the post-war international food regime to explain why agriculture in Colombia not only shows a deterioration in production, but that food sovereignty is also jeopardized. To address this, five groups of crops deemed essential in Colombia will be analyzed and linked to land problems and the post-war international food regime in four different stages: the onset, the collapse, the consolidation, and the continuation. Thereafter will follow conclusions and a discussion.

I. Agriculture in Colombia: Land Conflict and Exclusion

The agricultural sector is one of the main contributors to the gross domestic product (GDP) of Colombia, though its contribution has exposed a decreasing trend in the past 22 years³. This pattern is viewed as normal because the agricultural sector is usually the one that helps any modern economy take off, but then that its contributions would inevitably decline over time (Anderson, 1987; Rostow, 1959)⁴. However in Colombia there are many different factors that can explain why agriculture's significance has declined as well as deteriorated over time: land concentration and land exclusion are two of these.

There are many academics who have researched land access problems and its consequences in agrarian structures. Barraclough (1970), Barraclough and Domike (1966), and Berry and Cline (1979) identified how agricultural structure in Latin America after the post-war period, including Colombia, was what Barraclough called –a bimodal land tenure structure– where a few big landholders own large amounts of arable land while many small-peasants only own small amounts. As a consequence this has created a land concentration tendency that shows how between 1960 and 1990, the Gini coefficient of land distribution fell by only three percentage points, from 0.87 to 0.84 (Deininger, 1999). More recently, in 2004 the Gini coefficient measured by the World Bank in Colombia was 0.85⁵, meaning that the majority of land is owned by a few landholders. To address this, the Colombian government has applied seven agrarian reform

3 Participation of agriculture as part of the GDP is as follows: 1987 (18.7%); 1997 (13.7%); 2006 (12%); 2007 (10.5%) (World Bank Indicators, 2009).

4 Agriculture's share of GDP tends to decline over time because "the income elasticity of demand for food is less than one" (Anderson, 1987, p. 205).

5 The Gini coefficient measures the degree of land tenure concentration: closer to 1 means a concentration of land tenure while closer to 0 means equity in land tenure distribution.

measures in the post-war period⁶, though land problems still persist (Perry, 2000). Agrarian reforms have helped to develop the bimodal agrarian structure as they have simultaneously helped to facilitate big landholders' aims rather than those of small-scale farmers (Borras, 2003; Deininger, 1999; Deininger and Binswanger, 1999).

Furthermore, land in Colombia has been misused for purposes of which it is not suitable (Table 1). While Permanent Meadows & Pastures, typically associated with raising cattle, is above the potential, Arable Land & Permanent Crops and Forest Area & Other Land are both below their potential.

Table 1. *Potential and Current Uses of Land in Colombia by Percentage, 1970 & 2008*

	Potential Uses	Used Land	
		1970	2008
Arable Land & Permanent Crops	12.6%	4.53%	3.1%
Permanent Meadows & Pastures	16.8%	34.25%	35.3%
Forest Area & Other Land	70.6%	61.22%	61.6%

Source: Own preparation based on FAO and IGAC statistics.

Two insights can be drawn from Table 1. First, land is used as a commodity rather than a factor of production (this happens when fertile land is used to raise extensive cattle rather than crops), therefore land acquisition in Colombia has been characterized by a nuance of territorial power. The land conflict has helped illegal armed groups to get land by using both legal and illegal means. Particularly, narco-traffickers have acquired land to launder money, gain social status and political power (Gaviria and Muñoz, 2007; Herrera, 2005; Kalmanovitz and López, 2006; Machado, 2005). As a consequence, the price of land in certain areas has increased beyond its value (Benitez, 2005), making it impossible for small-scale farmers to acquire land for subsistence farming. The second insight is there is a conflict of land uses because the land is not used for that which it is suitable. These issues jeopardize food sovereignty and availability, especially for poor populations.

6 All agrarian reform laws in the post-war period: Ley 135 (1961), Ley 1^a (1968), Ley 4^a (1973), Ley 5^a (1973), Ley 6^a (1975), Ley 35 (1982), Ley 30 (1988), Ley 160 (1994).

II. The Post-war International Food Order: The Onset

The traditional economic perception is that neo-liberal policies are the solution to reduce the gap between affluent and poor countries. Therefore ‘benefits from free trade’ based on David Ricardo’s classic ideas should create significant benefits and improvements in living standards for all who participate (Southgate *et al.*, 2007). This has been called the ‘standard model’⁷ (Southgate *et al.*, 2007; Tweeten, 1999) and has been replicated in almost all developing countries since the post-war period began, following international policies such as the Food for Aid Program (FAP), the Green Revolution (GR) and the Alliance for Progress (AFP). These measures have shaped the post-war global food order turning agriculture into a food regime⁸ or a regime of accumulation⁹ (Friedmann, 1982; Friedmann and McMichael, 1989; McMichael, 1996), where the dynamic between land, agriculture and rural life has been forgotten and where land has been reduced to a commodity, creating a rapid concentration of land-ownership and commodity production in agriculture (Newby, 1980). Thus, as many academics have highlighted, the international food order of the post-war era can be seen as another factor that has contributed to the decline of agriculturally self-sufficient economies, increased poverty, and which has split the world into two polarized groups: rich countries and poor countries (Friedmann, 1982; McMichael, 2004, 2008).

The Food for Aid Program (FAP) issued by the U.S. government in 1954 (Public Law 480 [P.L. 480]) represented the onset of the second food regime era. The FAP was a set of policies that allowed the U.S. to get rid “of surplus

7 The standard model, later called the Washington Consensus, was a list of recommendations that included: trade liberalization, privatization, deregulation, securing of property rights, etc. (Southgate *et al.*, 2007).

8 The food regime was created by a series of decisions after World War II, which basically reflected U.S. intentions of complementing its domestic farm policy of import protection and export subsidies. The idea was to create a rule-governed structure of food production and consumption on a worldwide scale. Aside from the explicit rules there were implicit rules which regulated property and power within and between nations. “The food regime, therefore, was partly about international relations of food, and partly about the world food economy. Regulation of the food regime both underpinned and reflected changing balances of power among states, organized national lobbies, classes-farmers, workers, peasants-and capital” (Friedmann, 1993, p. 31). There were two food regimes: the first was centered on European wheat and meat imports from 1870 to 1914 (Friedmann and McMichael, 1989, p. 95), and the second is a set of relations of production and consumption rooted in unusually strong state protection and the organization of the world economy under U.S. hegemony (Friedmann and McMichael, 1989, p. 103).

9 Term coined by Friedmann (1982).

food commodities on concessionary terms to client states to serve foreign policy goals” (Buttel and Goodman, 1989, p. 88). Arguments in favor of the FAP highlighted that the program was beneficial for low-income economies in dealing with their restricted commercial import capacity and their lack of natural resource endowments that were needed to achieve food security (Barrett, 2001; Tweeten, 1999), without causing significant alterations or distortions to local farmers’ production (Barrett and Maxwell, 2005).

Arguments against are highlighted by Maxwell and Singer (1979) in their survey: “Food Aid for Developing Countries: A Survey”. First, the output aspect of food aid gives disincentives for local agricultural production through the price mechanism. As a result, low-income countries receiving food aid changed their internal production patterns (Barrett, 2001; Teubal, 1995)¹⁰. Second, the allocation aspect of food aid has not used unbiased selection criteria but rather has been influenced by the economic, geo-political and military interests of donor countries (Barrett, 2001; Buttel and Goodman, 1989; Friedmann, 1993). Third, the dependency aspect of food aid is associated with forces leading developing countries not to greater self-reliance, but rather to greater dependence on food aid goods (Teubal, 1995). Fourth, the inferiority aspect of food aid is that they provide aid that is second-best, expensive, double-tied, surplus-dependent, irregular, bureaucratic, and often context-inappropriate.

The Green Revolution (GR) was “an international project [that] applied industrial principles to Third World grain cultivation, following the pattern set in the United States of hybrid seeds combined with industrial chemicals and machinery” (Friedmann, 2000, p. 498). As a result, between 1961 and 1995, there was a rapid annual average growth of 0.5% in global cereal production *per capita* (Barrett, 2001).

Proponents of the GR express how it has improved agricultural production without the need for geographic expansion of farming and ranching (Southgate *et al.*, 2007), and has saved humankind from the cataclysm that many Malthusians forecasted for the late 1960s and early 1970s concerning food scarcity. Opponents express that despite technological improvements achieved during the GR, there were side effects like soil depletion and water pollution due to the increased use of

10 Evidence has shown that food aid increased Colombian imports through a disproportionate reduction in domestic production. For example, Dudley and Sandilands (1975) indicate that wheat imports mainly from the U.S. went from 20% in the years before P.L. 480 to almost 90% at the beginning of the 1970s .

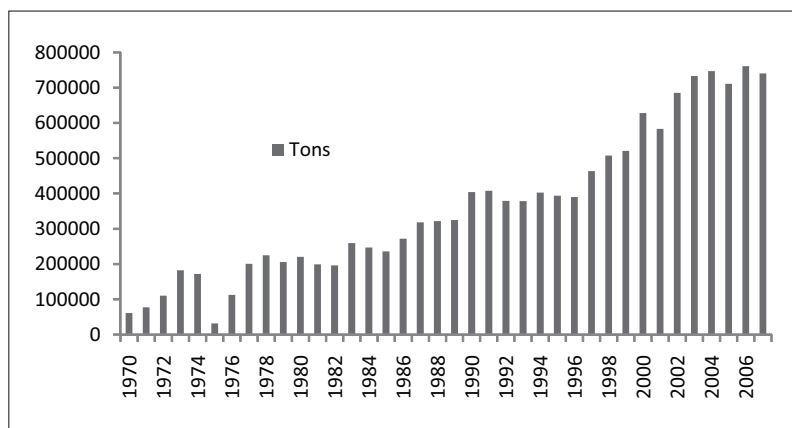
fertilizers and pesticides (Friedmann and McMichael, 1989), a loss of biodiversity (because of the promotion of monocultures) and also traditional agricultural knowledge (Friedmann, 2000)¹¹.

The Alliance for Progress (AFP) initiated by U.S. President John F. Kennedy in 1961 aimed to establish economic cooperation between North and South America. The Alliance sought to encourage the adoption of anti-poverty policies that would increase the legitimacy of Latin American governments and thus prevent Communist revolution. Latin American countries promoted internal social reform through land and tax reform and greater spending in health and education. The initial part of the program in Colombia centered on building schools and housing projects. Some measures of the modernization project imitated Rostow's ideas in which the elite groups linked with traditional agriculture and urban oligarchic groups received significant aid at the onset of the program. The main project was the land reform in 1961 which favored these groups while other groups like small-scale farmers and regional associations were not included, causing exclusion and buttressing land concentration. Most of the literature concludes today that the AFP was a serious failure of U.S. foreign policy, which raised, but could not fulfill, great expectations of material improvement, democracy and stability in Latin America (Fajardo, 2003).

The FAP, GR and AFP consolidated the food regime by following U.S. agricultural policies based on standardizing technology used to farm agricultural products (Buttel and Goodman, 1989) and setting up patterns of land accumulation favoring a few groups over others. It created a dependence on agricultural inputs and cheap imported food products; it also triggered the loss of biodiversity and traditional agricultural knowledge (Altieri, 1992; Friedmann, 1993; Friedmann, 2000; Teubal, 2001) which caused an increase in land concentration. For instance, Graph 1 highlights how during five decades, Colombia increased imported fertilizers and chemical inputs by approximately 1000%.

11 Moreover, technical changes in agriculture promoted land conflicts over time as well as the misallocation of resources among Latin American countries, especially Colombia.

Figure 1. Imports of Fertilizer and Chemical Inputs in Colombia, 1961-2007



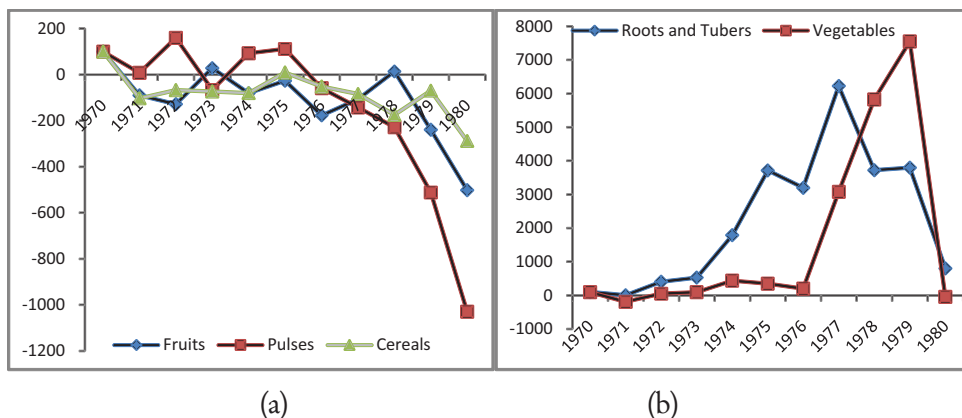
Source: FAO statistics.

Thus, the agricultural sector in which many developing countries have a comparative advantage has changed drastically, supporting a world market where accumulation and class formation play an essential role (Friedmann, 1982). This can clearly be seen in Colombia in two time periods: the post-war era (1950 to 1989) and the *Apertura* (1990 and onwards).

In the first era, international policies (FAP, GR and AFP) focused on pushing the price of cereals down, reshaped social diets¹² and simultaneously undermined local farmers with low-priced staple foods which tended to push small farmers and peasants away from the direct production of food (McMichael, 2004) and gave more power to big landholders. In Colombia, this trend is visible throughout the 1970s, when imports of products in which Colombia was self-sufficient (1960-1969) increased rapidly (Graph 2). Hence, the agricultural trade balance has a decreasing tendency for three out of the five groups (Fruits, Pulses and Cereals) while two groups (Roots and Tubers, and Vegetables) exposed a desultory pattern in which both crops' trade balance rose from the mid-1970s, but then dropped significantly at the end of the decade. Thereafter, production and policies in Colombia were directed at supplying external needs instead of securing internal ones.

¹² Social diets were based on the consumption of cereals, cheap imports and processed food.

Figure 2. *Evolution of Agricultural Products' Trade Balance, Colombia (1970=100), 1970-80. (a) Fruits, Pulses and Cereals (b) Roots and Tubers, and Vegetables*



Source: Own calculations from FAO statistics.

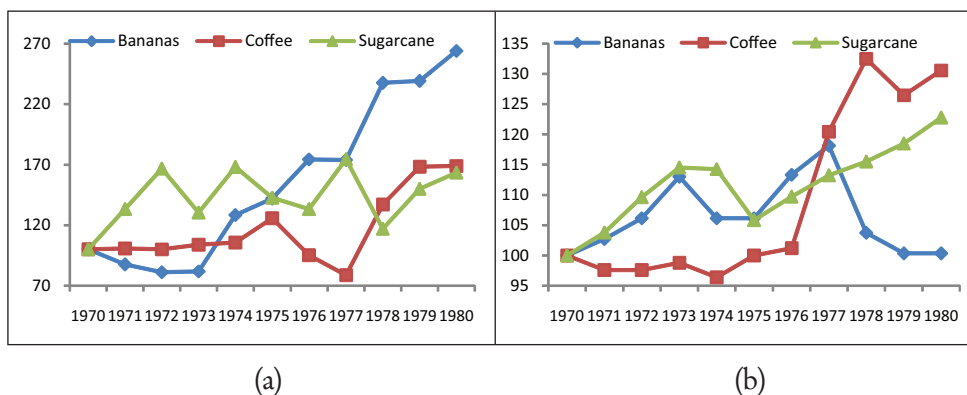
For instance, export crops such as bananas, coffee and sugarcane augmented both in their area harvested and their trade balance (Graph 3). Besides this, looking at the ratio of cattle to land in Colombia¹³, on average there were 1.8 cows per hectare, while the standard is 2.5 to 4 per hectare, which reflects that big landholders in Colombia perceive land as an asset rather than a productive factor.

The above tendency was facilitated by several policies (called Modernization) which were channeled through institutions which favored large-scale farmers (Altieri, 1992). This technological flow was critically biased in three fundamental ways: (i) it benefited mainly medium and large-scale producers and it marginally impacted food crops predominantly grown by the peasant sector; (ii) it was centered mostly on industrial production, export and luxury crops—therefore making it common that large landowners and foreign companies were granted huge amounts of land while small-scale farmers were dislocated from markets and production spheres; and (iii) it was oriented towards labor-saving techniques rather than land-saving programs—the result was an uneven pattern of growth among crops, farms and regions (de Janvry, 1981; Friedmann, 1993; Teubal,

13 Cattle augmented 18% between 1970 and 1980 (equivalent to 3,745,488 heads), while the land used for this purpose rose by only 2% (equivalent to 2,100,000 hectares).

1995). For instance, the development in areas like the Andean region and Valle del Cauca, where coffee and sugarcane crops are located, was better than in other regions.

Figure 3. *Evolution of Agricultural Export Products, Colombia (1970=100), 1970-80.*
 (a) *Trade Balance (Exports minus Imports)* (b) *Area Harvested*

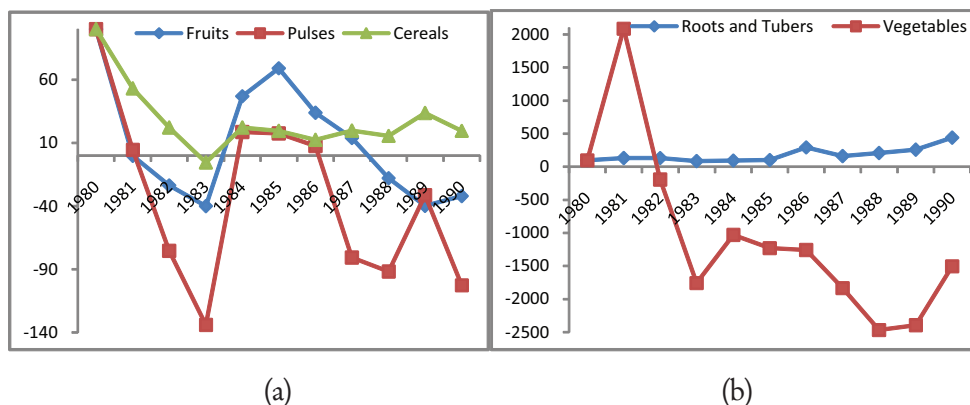


Source: Own calculations from FAO statistics.

III. The Crisis of the Food Regime: The Lost Decade

The lost decade of the 1980s exposed a common declining trend in Latin American countries where the lack of monetary funds created economic stagnation; countries were supported by loans from international institutions, accompanied by input substitution which caused a temporary shift from imported food production to internal production. However Colombia exposed a desultory tendency: while all Latin American countries ceased loan payments, Colombia did not. This is reflected in Graph 4, where the trade balance of Fruits, Pulses and Cereals dropped until the mid-1980s when the effect ameliorated, but still maintained the decreasing trend. Vegetables presented its apogee in 1981 then dropped for the rest of the decade, displaying the deterioration of the import-substituting industrialization model. This adhered to what a few academics called in the late 1970s, the collapse of the post-war international food regime (Friedmann, 1982). However, at the end of the decade imports rose again, and international institutions, due to the economic crisis, urged the countries to adopt structural adjustment policies, consisting of a few economic policy recommendations that would lead to the reestablishment and reinforcement of the international food regime.

Figure 4. *Evolution of Agricultural Products' Trade Balance, Colombia (1980=100), 1980-90. (a) Fruits, Pulses and Cereals (b) Roots and Tubers, and Vegetables*



Source: Own calculations from FAO statistics.

Thence, the new development paradigm emphasized the importance of the market-led comparative advantage, especially for non-traditional agricultural products and the market-led agrarian reform which was embedded in the ideology of reinforcing private property rights. This implicated the full commodification of land as a condition for the efficient allocation of resources in agricultural production and therefore competitive markets (Bernstein, 2002). One of the most worrying features of this economic paradigm was the exclusion of a large portion of the population (particularly the poorest population) from the development process, causing negative effects for long-term economic growth (FAO, 2008).

IV. The Post-war Global Food Order: A Consolidation

At the beginning of the 1990s, the Colombian government sped up the process of trade liberalization called *La Apertura*, which had begun at the end of the 1980s. *La Apertura* unleashed a liberalization process of competition intended to benefit those farmers whom could reduce production costs or had the means to turn their crops into cash crops, where Colombia had the comparative advantage (Kalmanovitz and López, 2006). This was a continuation of the international food order that basically promoted an international division of labor as well as a pattern of commodification of land and labor.

La Apertura was issued without taking into consideration several historic problems from the post-war period such as land concentration, constant land conflicts among tenants, agricultural inefficiency in production and exclusion of farmers (Gaviria and Muñoz, 2007; Ibañez and Querubin, 2004). *La Apertura* was viewed as a solution to ameliorate the gap between developed and developing countries but instead led to deep agrarian problems. Table 2 shows that the problems of land use were not solved at all, on the contrary the land used for crops diminished while land used for cattle rose.

Table 2. Potential and Current Uses of Land in Colombia in Percentages, 1990 & 2000

	Potential Uses	Used Land	
		1990	2000
Arable Land & Permanent Crops	12.6%	4.5%	4.1%
Permanent Meadows & Pastures	16.8%	35.1%	36.3%
Forest Area & Other Land	70.6%	59.4%	59.6%

Source: Own preparation based on FAO and IGAC statistics.

The above results buttress the possible connection between the acquisition of land by narco-traffickers and land concentration, as expressed before (they buy land to use mainly for other purposes such as raising cattle or laundering money rather than farming). While land used for raising cattle rose 1.2% (equivalent to 231,000 hectares), cattle stocks decreased 1%. The extensive use of land for raising cattle could potentially be used for agriculture and by forest. This implies a conflict of land uses because the land is not used for what it is best suitable for.

Furthermore, there are food groups deemed essential to Colombian inhabitants, especially the poorest ones, such as fruits, cereals, starchy roots, sugar, meat, and vegetables (see Appendix: Table 1A). Theoretically, policies should meet their demands by using the comparative advantage in producing primary goods. Looking at the five food groups, Vegetables, and Roots and Tubers stand out with increments in imports higher than 1,000% during the span of time, while the production decreased for all except Fruits and Vegetables (Table 3). This increasing tendency was a consequence of policies that encouraged no-export crops, so as to turn them into export crops.

Table 3. *Evolution of Imports, Exports and Production in Colombia (1990=100), 1990-2000*

	Imports		Exports		Production	
	1995	2000	1995	2000	1995	2000
Fruits	405.2	392.1	64.5	3318.1	126.7	151.2
Pulses	127.9	208.2	197.5	91.4	104.5	99.9
Cereals	282.8	371.3	1.2	0.5	79.6	94.6
Roots and Tubers	561.0	10959.3	161.7	319.3	108.4	77.9
Vegetables	499.0	1821.8	422.7	1222.2	82.1	119.2

Source: Own calculations from FAO

However, the trade balances for four out of five groups, excluding Fruits (Graph 5), present a decreasing tendency which implies that the measurements tended to focused on one group (Fruits)¹⁴ or other groups such as Cut Flowers (which is out of the scope of this article). Therefore peasants and small-scale farmers were forced to compete not only with import crops, but also among themselves to get resources to grow crops under the new model's standards. Colombia reformed its agrarian structures, moving resources between different agricultural activities and for those who had the means to go along, comparative advantages helped them to benefit from these measures; however, those who could not became landless or unemployed.

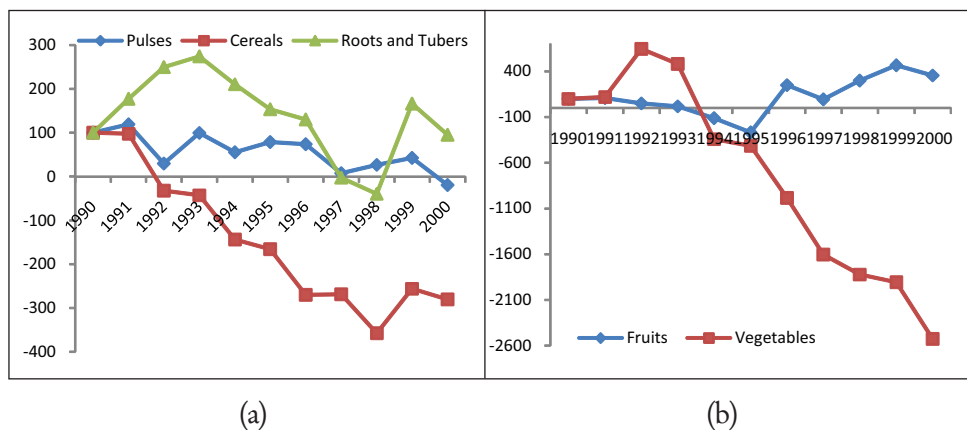
Then, a change was seen in the evolution of area harvested and yield by crop groups from 1990 to 2000 (see Appendix: Tables 2Aa, 2Ab and 2Ac). Fruit exports increased both in area harvested and yield; area harvested dropped for the rest of the crops, while yield rose¹⁵ (see Table 4). Pulse crops present an abnormal performance where the area harvested decreased but the yield increased incommensurately. Cereals followed a structural trend that came from the 1960s and 1970s when the Colombian government received benefits from food aid programs. This became worse after the free trade model was implemented in

14 The highest participation of Fruits is plantains, however this trend has decreased over time: in 1980, 90% of total fruits were plantains, in 1990, 68% and in 2000, 55%.

15 From 1991 to 1994 there was a reduction in area harvested, yield and production which could have been caused by *El Niño* phenomenon. But after 1995, they increased (see Appendix: Table 5A).

1990 when *La Apertura* permanently created a high dependence on cheap imports such as wheat and other cereals.

Figure 5. Evolution of Agricultural Products' Trade Balance, Colombia (1990=100), 1990-2000. (a) Pulses, Cereals, and Roots and Tubers (b) Fruits and Vegetables



Source: Own calculations from FAO statistics.

Table 4. Comparative Analysis of Area Harvested and Yield in Colombia, 1995 & 2000
Food Groups (1990=100)

Yield (Hg/Ha)			Area Harvested (Ha)	
1995	2000		1995	2000
107.0	139.1	Fruits	118.7	138.2
103.4	448.5	Pulses	76.6	65.3
94.0	109.2	Cereals	74.5	64.2
118.7	108.5	Roots and Tubers	99.4	83.4
120.3	143.7	Vegetables	61.6	96.7

Source: Own calculations from FAO.

Pulses, Roots and Tubers, and Vegetables are mainly farmed by peasants. The decrease in the area harvested could be a consequence of moving resources around within different agricultural activities or as a result of the fact that some small-scale farmers could not afford new technological transformations, switching crops used for traditional crops for less technological crops. The augmentation in yield is clearly an indicator of improvement either in technology or by more investments (buying improved seeds, machinery, chemical fertilizers, etc.). These sorts of improvements are unlikely to have been acquired by peasants. Also, regarding the *El Niño* phenomenon (1992-1993) and the economic crisis (1998-1999), some farmers, so as to keep their land producing, moved from one activity into a less technologically advanced one, or in the worst case scenario, they sold their land.

Regarding the internal conflict in Colombia (based on land), forced displacement reflects the permanent exclusion of farmers from agricultural production areas. Though it is essential that agricultural land policies include this particularity, instead it seems that the conflict and the policies applied have helped to make rural issues worse over time.

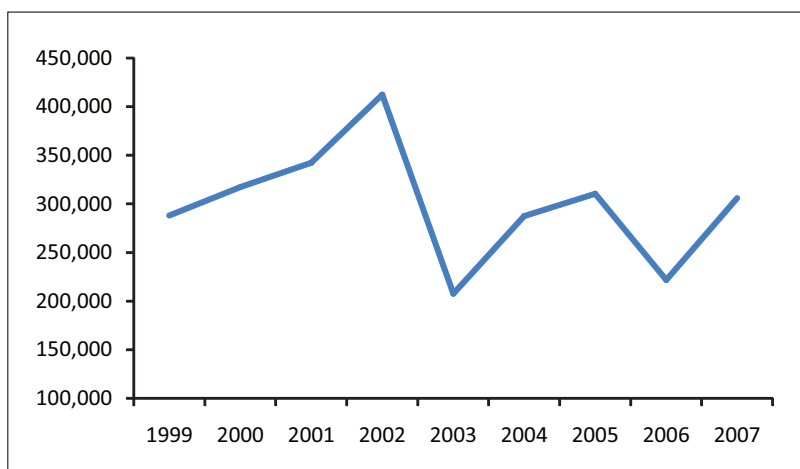
According to the Internal Displacement Monitoring Centre (IDMC), Colombia has the second highest number of internally-displaced people in the world (almost 4.4 million by August 2008). *Consultoría para los Derechos Humanos y el Desplazamiento* (CODHES), a non-governmental organization (NGO) matches the number given by IDMC¹⁶, while the government claims that just 2.6 million have been displaced (see Graph 6). Although the difference in the number of people displaced is abysmal, more worrying is the phenomenon itself which has especially affected rural dwellers.

Summing up, *La Apertura* reinforced the established post-war international food order. After 1990, trade, production and land use were modified drastically towards the commodification of land and labor. This has jeopardized food

16 The CODHES figure is cumulative from 1985. The government figure is cumulative from 1994 and does not include intra-urban displacement and people displaced by crop fumigation.

sovereignty in Colombia, in terms of becoming a net importer of products that the country once was self-sufficient in. Instead, Colombia has focused on cash crops for potential external markets.

Graph 6. *Number of People Displaced in Colombia per Year, 1999-2007*



Source: CODHES.

V. Bio-fuel Crops in Colombia: A Continuation of the International Food Regime

In 2001, the Colombian government issued Law No. 697 to promote the use of alternative energy sources by establishing a program for the rational and efficient use of energy. The same year, Law No. 693 was issued to mandate the use of ethanol fuel. It obliges gasoline to be mixed with 10% ethanol from the beginning of 2006 onwards in Colombian cities where inhabitants exceed 500,000, while in cities with fewer inhabitants the government authorizes a lower percentage ethanol mix.

In 2004, Law No. 939 was issued to encourage the production of bio-fuels. The law makes the production of new bio-fuel crops tax-exempt, for the ten year period, 2005–2015. One of the purposes of the bio-fuel policy has been to boost rural economies, particularly areas affected by the internal conflict, where illegal crops are farmed. In this regard, bio-fuel crops (specifically palm oil and cassava) have been included in the crop substitution program that supports farmers in

growing legal crops instead of illegal ones used in narcotics production. However, there are many critiques associated with yields, markets and crop seasons—for instance palm oil takes 15 months to grow, while illegal crops take only three months or less to grow, beside the fact that illegal crops are more profitable than palm oil. The government gives incentives via tax exemptions to producers to reconvert meadows and permanent pastures typically used for raising cattle into growing palm oil crops instead. However, this reconversion has been unsuccessful (Oslender, 2007; Richiani, 2005).

The bio-fuel program has focused on three main crops: sugarcane, palm oil and cassava. Sugarcane and cassava are essential food crops for Colombians, and compete with other crops that are cultivated under similar elevation and climatic conditions (such as beans, maize, rice, sorghum, and certain fruits). The evolution of area harvested for sugarcane and palm oil, highlights a movement of resources to the production of bio-fuel crops (Table 5).

Table 5. *Area Harvested for Seven Crops in Colombia (2001 = 100), 2001-2007*

	2002	2003	2004	2005	2006	2007
Beans	93.5	98.9	97.1	99.0	99.5	103.8
Maize	96.6	104.7	115.9	116.3	101.2	102.7
Palm Oil	102.4	106.5	111.6	119.9	131.0	147.8
Rice	97.4	109.7	112.9	97.6	74.3	74.8
Sugarcane	103.2	104.8	106.3	105.7	104.2	111.7
Cassava	90.5	91.7	93.0	95.7	94.6	97.3
Sorghum	99.5	122.8	106.2	97.9	60.1	60.1

Source: Own calculations from FAO and DNP.

Similarly, the production of such crops has increased rapidly in six years (Table 6). However, looking at the data of land used for crops and livestock (Table 7), the numbers insinuate that there has not been a reconversion from livestock to bio-fuel crops. Improvements made by chemical fertilizers and enhanced seeds can explain this yield performance, as well as investments in new technology.

Table 6. *Production for Seven Crops in Colombia, (2001 = 100), 2001-2007*

	2002	2003	2004	2005	2006	2007
Maize	98.5	126.7	146.5	157.4	112.4	113.1
Palm Oil	104.5	100.8	100.5	120.3	128.4	135.9
Rice	98.4	120.0	126.5	104.9	94.3	94.3
Sugarcane	112.0	118.2	121.5	120.8	118.2	121.2
Cassava	83.1	84.3	83.6	81.5	86.0	90.6
Sorghum	96.5	109.7	104.9	111.3	95.5	72.5

Source: Own calculations from FAO and DNP.

Table 7. *Potential and Current Uses of Land in Colombia by Percentages, 2001 & 2008*

	Potential Uses	Used Land	
		2001	2008
Arable Land & Permanent Crops	12.6%	3.7%	3.1%
Permanent Meadows & Pastures	16.8%	33.9%	35.3%
Forest Area & Other Land	70.6%	62.4%	61.6%

Source: Own preparation based on FAO and IGAC statistics.

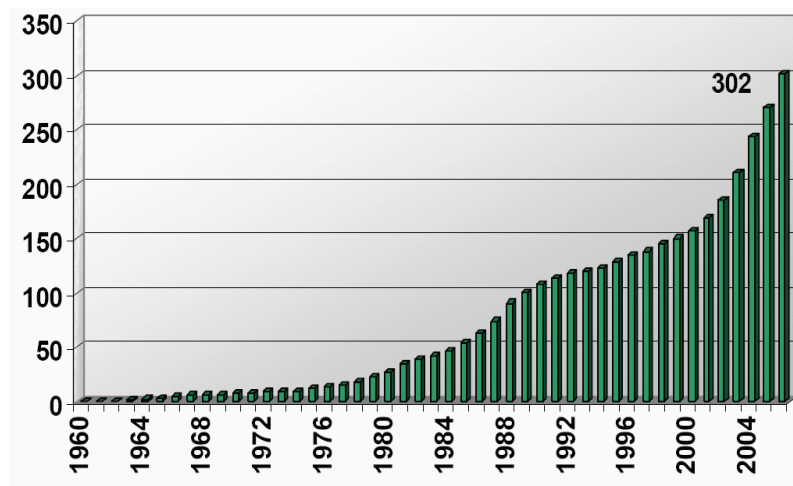
But indifferent to the cause, it is clear that after 2001, palm oil production rose in accordance with the bio-fuel programs and the projection presented by *La Federación Nacional de Cultivadores de Palma de Aceite* (Fedepalma) for the coming 5-10 years was to increase the area harvested by 120,000 hectares (Fedepalma, 2007).

Before going further into the study of palm oil and sugarcane crops, it is relevant to highlight whether the production of crops, analyzed before, meets internal consumption needs, especially for essential crops like cereals, sugarcane and cassava. Table 3A (see Appendix) shows how internal production does not meet internal demand for cereals (maize, rice and wheat) and beans. Although this tendency started even before the 1990s, it seems like the promotion of bio-fuels could deepen it, since these crops could compete for land with palm oil, sugarcane and cassava.

A. Palm Oil Crops

Palm oil has become, according to the Colombian government, the crop that will solve agrarian problems, boost rural economies, bring employment to rural areas, and help peasants to change from producing illegal crops to legal crops (palm oil and cassava). Palm oil, *Elaeis guineensis*, was first introduced to Colombia in 1932. Albeit it was in the mid-twentieth century that palm oil was promoted by the Colombian government so as to substitute vegetable oil imports, thereafter it was commercialized nationwide. The government consistently gave incentives and support to farmers who decided to invest in such crops, especially farms bigger than 500 hectares (Kalmanovitz and López, 2006). Graph 7 presents the historic tendency in the amount of area harvested in palm oil, which has grown more rapidly since the beginning of 2001.

Figure 7. *Area Harvested (Thousands of Hectares) with Palm Oil in Colombia, 1960-2007*



Source: Fedepalma.

Since 1990, palm oil exports have increased and it has constituted an important item in the Colombian trade exchange. Palm oil exports from 1990 to 2007 have augmented by more than 6,000%; palm oil and palm kernel oil account for 90% of oils and fats produced domestically and almost 60% of all oils consumed in Colombia. The growing production of palm oil has led Colombia to be the world's fifth largest producer and the largest producer in Latin America.

Fedepalma (2007) estimates that Colombia produces 36% of all palm oil in Latin America, followed by Ecuador (18.2%) and Costa Rica (11.6%). Besides, there are projects to increase Colombian bio-fuel production and its share in the market, which has led the government to invest in six more palm oil bio-diesel plants as well as increase area harvested. To do so, the Colombian government needs to expand the agrarian frontier or reconvert crops into palm oil.

There are some arguments presented by academics that reveal how palm oil expansion is taking place in remote areas mainly dominated by paramilitary groups and how a great amount of this land has been stolen from poor farmers by paramilitaries (Oslender, 2007; Richani, 2005; Tenthoff, 2008). They are using the internal conflict to get cheap land at the expense of peasants, indigenous and minority groups, intensifying forced displacement in rural areas. In spite of this, one of the new palm oil bio-diesel plants will be built in western Colombia (Bio-diesel de Colombia S.A. that will produce 30,311,400 gallons per year), near the conflict region pinpointed by Richani (2007) and Oslender (2007). Moreover it is interesting how there is no data in Fedepalma about palm oil production in a conflict area (the border between the department of Antioquia and the department of Chocó) covered by rainforest and protected by international laws because of its great biodiversity (there is a biodiversity conservation project there funded largely by the World Bank) (Oslender, 2007).

Palm oil being used in a project to diminish greenhouse gas emissions and boost the rural economy has good intentions. However, potentially there could be conflicts between actors over the acquisition of land to farm palm oil in certain areas, even over land planted with palm oil crops or other crops farmed in similar weather conditions like cereals, roots and beans. These sorts of conflicts could jeopardize internal food production (or food sovereignty) in certain areas because of the reconversion from traditional crops into palm oil or export crops.

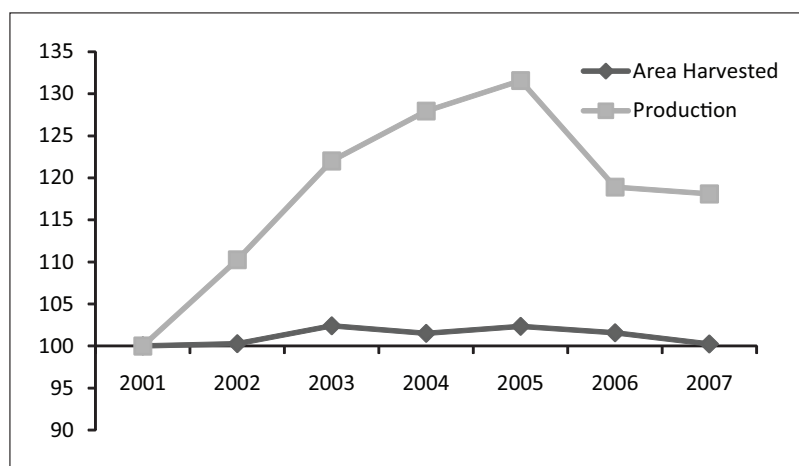
B. Sugarcane

Sugarcane has been grown in Colombia since it was introduced by Europeans long ago and has been one of the most dynamic agricultural activities since the twentieth century. There are different sugarcane varieties that grow from 0 to 2,100 meters above sea level; the most common has been centered in one specific region, the Cauca Valley, where the highest percentage of sugarcane production takes place.

There is another variety of sugarcane, mainly used to produce *panela*¹⁷, which has been grown mainly in the Andean region. *Panela* production is an important source of employment particularly for peasants and small-scale farmers (there are nearly 20,000 *panela* farms: *trapiches*) and also, *panela* is essential in the Colombian diet, particularly in the Andean region.

Bio-fuel programs have promoted the production of ethanol from both varieties of sugarcane, though the technology to do so is owned by agri-business in the Cauca Valley. As indicated by Grassroots (2007), bio-fuels were promoted because of the pressure from the company Ardila Lülle that currently controls the production of sugarcane ethanol in Colombia. Clearly, there is a movement of resources so as to augment production of such crops (see Graph 8).

Figure 8. *Area Harvested and Production of Various Sugarcane Crops Used to Produce Panela in Colombia (2001 = 100), 2001-2007*

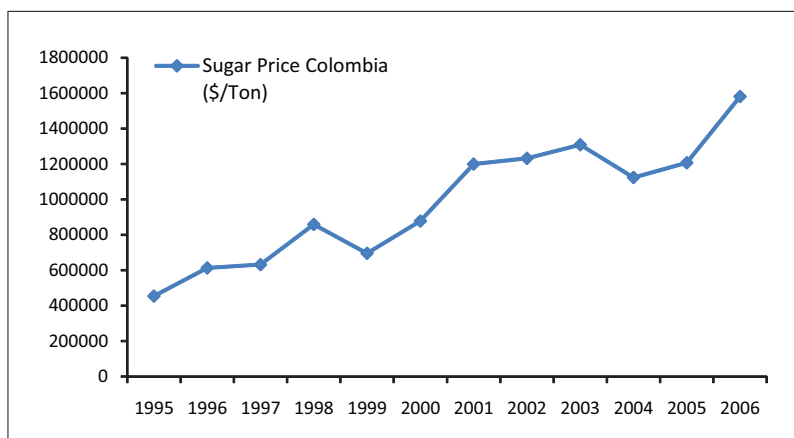


Source: Own calculations from DNP.

¹⁷ Panela is basically an unrefined solid piece of sucrose and fructose obtained from the boiling and evaporation of sugarcane juice.

Although Colombia is self-sufficient in sugar production as well as generates surpluses to produce bio-fuels, there is a negative effect reflected in the rise of sugar prices (see Graph 9). Since sugar and *panela* are essential in the daily food intake of Colombians, price increases directly affect the poorest populations. Online news (Caracol, 2007a; Caracol, 2007b) have asserted the increase of the price of *panela* to the scarcity of sugar for human consumption; production of ethanol from sugar crops is competing with sugar as an essential staple food. Producers affirm the correlation between price and high demand to produce ethanol as one of the main justifications for this tendency.

Figure 9. Evolution of Sugar Prices in Colombia, 1995-2006



Source: DNP.

Clearly the promotion of bio-fuels in Colombia will affect food sovereignty. This process that has gradually led to the deterioration of the rural economy is not a current problem explained by or a consequence of the bio-fuel programs, on the contrary, it is historic and structural. It is the reflection of the constant submission of agriculture to the international food order that has been disguised within neo-liberal measures, implemented several times as different attempts to solve something that seems irresolvable under this neo-liberal model. Therefore, another type of measure has to be taken into consideration by the Colombian government. The inclusion of peasants, small-scale famers and the different particularities of the agrarian sector within the development model are essential.

Conclusion

Although Colombia has had historical problems which remain contentious and unresolved, the continuation of the post-war international food order focused on promoting exports, monocultures and favoring big landholders over peasants and small-scale farmers, make the bio-fuel programs potentially risky in terms of food sovereignty, food availability, traditional agricultural knowledge, and the intensification of historical land problems.

This study finds how the post-war international food order, under the scope of the U.S. government and international institutions, has changed traditional agrarian structures in Colombia. It has transformed agriculture from being produced traditionally to being produced on a massive scale (in modern farms)—where labor and land are commodities and people are excluded. This has been reflected looking at the crop tendency after the post-war period where Colombia turned from being self-sufficient into a net importer in different products. In this regard, the analysis of certain crops show a change in several traditional products deemed essential in the Colombian diet and also that cash crop production has increased, particularly in export-oriented crops.

Looking at the four stages, the international measures applied undermined agriculture, buttressing land problems like land concentration by forgetting social rural land issues and deepening exclusion. This is seemingly clear after 1990 when Colombia completely opened its economy and huge changes in agricultural patterns occurred, exacerbating historic problems like turning into a net importer of food products, or the constant trend of promoting certain crops over others. Thus, bio-fuel crops will continue these tendencies in agriculture in Colombia.

Land problems still dominate rural life. Misconceptions about land have worsened land concentration, for the actors involved in the conflict (illegal groups) have used it to accumulate land cheaply. Then the land is used for whatever suits their legal or illegal interests (raising cattle, coca crops or export-oriented crops), while farmers are displaced or excluded from cultivation.

It is visible that at the end of the 1990s there was an aggravation of forced displacement of rural dwellers. Besides, the land available for agriculture is being misused: fertile land is used to raise cattle—only one third of the land suitable for agriculture is used for this purpose. It is clear that agricultural measures are not focused on solving land-related problems, but only support big landholders. Since Colombia has become a net importer of products which the country once

was self-sufficient in, these problems reflect a potential risk to food availability and food sovereignty.

Regarding bio-fuels, the study finds that palm oil crops, although deemed by the Colombian government to be a solution for some agrarian problems, in reality only complicate problems in areas where there are already enough conflict-related problems. Additional illegal groups (paramilitary groups) are using the internal conflict to seize land for big landowners or foreign companies in exchange for compensation, which is clearly not the right way to boost rural economies, particularly for those whom have been excluded time and time again (Oslender, 2007; Richani, 2006; Tenthoff 2008). On the contrary, the reinforcement of the internal conflict increases the number of people displaced.

In the case of sugarcane, this study reveals how the promotion of this crop to produce ethanol has favored big landholders and agri-businesses that dominate and control sugar production and the technology to produce ethanol. Moreover, the current and future plans of expanding bio-fuel crops reinforce the transformation of traditional agriculture into the agro-industrial model based on large-scale monoculture production for export. The findings show how the post-war international food order has brought more problems than solutions regarding rural problems in Colombia.

Appendix

Table 1A. *Food Consumption by Groups of Food*

Food Groups	Quantities (g/person/day)		
	1990-92	1995-97	2003-05
Fruits	267	308	350
Cereals	237	261	283
Starchy Roots	233	250	197
Sugar & Sweeteners	153	137	140
Meat	91	97	99
Vegetables	78	98	98
Vegetable Oils	24	29	31
Pulses	19	17	16
Offals	9	9	8
Oil-crops	9	15	7

Source: FAO statistics

Table 2A. *Area Harvested by Food Groups, Colombia (1990=100), 1990-2006*

Year	Vegetables	Cereals	Roots	Oil-crops	Fruits
1991	83.6	92.4	101.9	111.9	108.7
1992	74.8	82.7	104.6	91.1	119.9
1993	80.0	80.7	102.8	72.5	124.2
1994	117.8	83.1	150.6	61.6	124.1
1995	95.4	74.6	141.1	61.2	126.8
1996	105.7	68.0	195.1	63.3	128.4
1997	113.7	63.4	160.5	57.2	128.0
1998	109.8	54.3	175.8	50.8	124.6
1999	126.3	62.2	212.2	51.4	135.7
2000	127.9	65.7	233.8	51.1	145.1
2001	127.5	65.9	230.3	53.3	146.7
2002	129.2	64.2	222.8	53.2	147.2
2003	134.8	71.6	263.2	60.5	150.3
2004	135.5	75.5	279.8	69.7	156.2
2005	136.6	70.8	289.9	66.8	160.7
2006	133.5	57.5	290.6	67.0	139.2

Source: Own calculations from FAO.

Table 2Ab. *Production by Food Groups, Colombia (1990=100), 1990-2006*

Year	Vegetables	Cereals	Roots	Oil-crops	Fruits
1991	74.3	91.5	91.5	114.5	117.8
1992	65.6	85.2	90.2	106.5	131.0
1993	69.2	81.6	108.7	102.8	135.0
1994	73.0	84.2	109.4	98.3	134.7
1995	89.9	79.6	108.4	105.4	138.8
1996	110.4	73.6	112.7	109.0	136.8
1997	126.2	74.3	102.0	112.3	140.4
1998	113.6	67.1	97.1	110.6	124.2
1999	108.0	79.1	106.6	128.2	154.8
2000	124.6	87.3	110.7	131.1	160.6
2001	106.3	88.7	114.9	138.1	159.3
2002	107.7	87.9	108.9	137.1	166.4
2003	120.8	109.6	88.7	138.1	160.9
2004	115.9	117.9	92.5	165.0	169.0
2005	116.8	108.6	93.8	171.5	180.0
2006	107.8	87.8	92.5	168.5	150.3

Source: Own calculations from FAO.

Table 2Ac. *Yield by Food Groups Colombia (1990=100), 1990-2006*

Year	Vegetables	Cereals	Roots	Oil-crops	Fruits
1991	88.9	99.0	89.8	102.3	108.4
1992	87.7	103.0	86.2	117.0	109.3
1993	86.4	101.2	105.8	141.7	108.7
1994	61.9	101.2	72.6	159.5	108.5
1995	94.3	106.8	76.9	172.2	109.5
1996	104.4	108.4	57.8	172.1	106.6
1997	111.0	117.3	63.5	196.2	109.6
1998	103.5	123.5	55.2	217.8	99.7
1999	85.5	127.0	50.2	249.6	114.1
2000	97.4	132.8	47.4	256.4	110.7
2001	83.4	134.6	49.9	259.1	108.6
2002	83.4	137.0	48.9	258.0	113.1
2003	89.6	153.2	33.7	228.3	107.1
2004	85.5	156.2	33.0	236.7	108.2
2005	85.5	153.5	32.3	256.9	112.0
2006	80.8	152.5	31.8	251.5	108.0

Source: Own calculations from FAO

Table 3A. *Differentia = Production - (Consumption + Exports) - Waste, Colombia, 1990-2003*

Year	Beans	Maize	Rice*	Rice (Paddy Equivalent)	Wheat
1990	17787.16	118375.4	-1148840	453885	-648472
1991	-11813.9	141377.4	-1155313	112392	-711837
1992	-11305.7	-177518	-1044862	150478	-853609
1993	-6351.37	-208747	-947524	155819.4	-853684
1994	-19727.1	-80179.2	-1100030	-5290.45	-850614
1995	-13521	-422009	-1033906	175300.4	-998209
1996	-23506.3	-598386	-1084268	16965.95	-989868
1997	-5375.43	-613907	-1135260	106288.3	-1028610
1998	-30174.7	-866407	-1163709	131550.7	-1069420
1999	-33564.7	-693536	-1237898	306424.1	-1096625
2000	-30741.7	-541452	-1271148	356626.5	-1118207
2001	-34599.5	-514827	-1333572	362356.8	-1176130
2002	-33836.9	-600355	-1310507	358484.2	-1203176
2003	-7819	-199600	-1387004	781231	-1149856

* Milled Equivalent.

Source: Own calculations from FAO.

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