

THE HAITIAN RICE TARIFF

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I. INTRODUCTION

Poverty is rampant in Haiti. In 2000 three-fourths of the population lived on less than the equivalent of two US dollars per day and half on less than one dollar.¹ Ten years later, in the middle of this poverty, the earthquake struck. Poverty is no newcomer to Haiti. It has been a steady companion for the last half-century or even century. Low incomes have forced Haitians to leave their country to an increasing extent. The modern history of emigration goes at least a century back, to the movement of Haitian workers to Cuba and the Dominican Republic.² With time, Haitians moved into the Bahamas, in the 1950s, and thereafter to other Caribbean islands as well as the United States and Canada. Emigration is the safety valve that makes it possible for Haiti to keep its nose above the water. The Haitian dream is to make it to the United States. Without the remittances of the *émigrés*, the equivalent of around one-third of GDP,³ the country would be in dire straits.

Nobody knows for how long the remittances will continue. As generation succeeds generation abroad, the ties with Haiti will grow weaker and weaker. It is clear to all observers that a sound domestic development strategy is needed. But here the consensus ends. Haiti is a small, open economy, integrated in an increasingly globalized world, which might be taken as an indication that the way forward must go through participation in the international exchange of goods and services in the world market, based on comparative advantage.

One of the persistent suggestions in the discussion of development strategies for Haiti after the 2010 earthquake is, however, that the way forward does *not* go through international integration but through import substitution in agriculture. Typically, the argument proceeds indirectly, by invoking the deleterious effects of capitalism in general and assembly

* Thanks are due to Katarina Kahlmann and Leiv Marsteintredet and to an anonymous referee for constructive comments on a previous version, and to Oscar Lundahl for help with the charts.

industry production in particular on the Haitian economy and the standard of living of the mass of the population. Once these effects have been pointed out, the necessity of concentration on domestic food production is held out, with particular emphasis on the desirability of tariff protection for the rice farmers in the Artibonite Valley.

II. HAITIAN RICE PRODUCTION

The present essay questions the view that holds that the future of Haiti lies in a strategy based on tariff protection of rice. The main argument under scrutiny is that Haitian rice production and food security were both destroyed by the reduction of the tariff on imported rice from 50 percent to a mere three per cent in the mid-1990s⁴ and that protection must be reintroduced in order to ensure future food security.⁵

The basic story is straightforward. It is argued that Haiti was more or less self-sufficient in rice production before the tariff reduction but now imports some 90 per cent of what is consumed from the United States, where rice is grown by producers who received almost 13 billion dollars' worth of government subsidies between 1995 and 2010. The combination of subsidies and the tariff reduction undertaken under the auspices of the International Monetary Fund and the World Bank has made it increasingly difficult for Haitian growers to compete. The supply of domestically produced rice fell from 47 per cent in 1998 to 15 per cent in 2008.⁶

At times the rice policy is also presented part of a wider conspiracy. The tariff reduction and the concomitant destruction of Haitian rice production were not only connected to the lobbying of American farmer interests but also, and primarily, to an industrial strategy that served to create a Marxian 'reserve army' of unemployed: a docile workforce that would accept near starvation wages in American-owned factories. Agrarian and industrial interests in the United States deliberately combined to destroy the Haitian economy and chain the former peasants to sewing-machines in American sweatshops.⁷

III. THE REASONS FOR RURAL-URBAN MIGRATION

The sweatshop argument has little to do with reality. There was no reason to create a reserve army of proletarians by force. The inner dynamics of Haitian agriculture, at work for more than a century, had already ensured the existence of a peasantry willing to move into the cities in search of a better future. To argue that the decline of Haitian agriculture began with the reduction of the rice tariff in the mid-1990s amounts to sheer ignorance of conditions in the countryside. Agricultural statistics

have always been shaky in Haiti, but insofar as they demonstrate anything at all, they indicate that agricultural production per capita declined steadily from the second half of the 1950s to the first half of the 1990s,⁸ i.e. for four decades before the tariff reduction. This is a strong indication that rural per capita income in Haiti has a secular tendency to decline, with or without tariff changes.

The roots of the underlying mechanism go way back in time. The land frontier in Haiti gradually closed as the population grew, so that 'by the last quarter of the 19th century probably few tracts of arable soil were not either under cultivation or at least under the claim of one or another owner'.⁹ From that point, an increasing population has had to cultivate a shrinking, increasingly eroded, land area, which, in turn has exerted a downward pressure on the rural per capita income, only slowly at first, and then presumably at an increasing pace. I have described the mechanism in detail elsewhere.¹⁰ The main features of the process are as follow. When the population grows, in the absence of a land frontier, it has to cultivate a given area. At given relative prices this implies a switch from land-intensive commodities (like coffee) to labor-intensive ones (food crops). The logic is that of the Rybczynski theorem,¹¹ which states that in a setting with two goods (coffee and food crops), produced with the aid of two production factors (land and labor),¹² coffee using fewer labor units per hectare than food crops, maintaining constant relative commodity prices implies that relative factor prices and factor intensities will remain unchanged as well. Then, when the population (and the labor force) grows while the land area remains constant, the only way of keeping factor proportions (and hence factor prices and commodity prices) constant is to increase the production of the labor-intensive good (food crops) in absolute terms and reduce that of the land-intensive good (coffee).

This is exactly what you observe in Haiti. Over time, there has been a strong tendency for the peasants to uproot their coffee trees and substitute food crops for them, a trend which has also been reinforced by relative commodity price movements. Since the expansion of food production takes place on steep mountainsides, the substitution has a side effect which is far from innocent. The planting and sowing of the food crops takes place when the rains begin, and with the canopies and roots of the coffee trees gone, there is little to protect the soil, which is washed into the valleys and rivers instead. The intensification of agriculture hence leads to a shrinking land area. But then you can apply the Rybczynski theorem 'backwards'. A given labor force on a shrinking land area amounts to the same as a growing labor force on a given land area. In both cases the overall land-labor ratio shrinks, and in both cases the result is more substitution of food crops for coffee

and more land destruction. Once the process has been set in motion it feeds itself without any need for further population growth, but at the same time, the population keeps growing, adding force to the erosion process. The latter becomes cumulative and per capita income declines over time.¹³

The cumulative process has created a strong push out of the countryside, towards urban areas and out of Haiti, for example to the Dominican Republic, but also across the sea. Most interesting in the context of the present discussion is the growth of the capital, from some 150.000-200.000 in 1950 to more than two million at the time of the 2010 earthquake.¹⁴ Clearly, the formal sector in Port-au-Prince had no way of absorbing this wave of migrants. When the assembly industry sector was at its peak in 1990, it employed around 46.000 people.¹⁵ Tourism never provided mass employment,¹⁶ and making it into the public administration required political contacts. As a result, the vast majority of the migrants ended up in the informal urban sector, i.e. they were 'self-employed' with very low incomes.¹⁷

Thus, the assembly sector has been able to hire people at very low wages throughout. To argue that American agrarian and industrial interests masterminded the tariff reduction on rice in order to lower the wage level¹⁸ is simply ludicrous. It was never needed. The conclusion is obvious: the rice tariff issue should be analyzed as an agricultural problem, not as part of any grandiose conspiracy scheme.

Limiting our attention to agriculture, the core argument of the protectionists cited above is that Haiti had a high degree of food security before the reduction of the rice tariff. The reduction in combination with subsidization of US rice producers destroyed Haitian rice production, and with that, food security, and it forced peasants to leave the countryside for urban areas, notably the capital. To reverse this sequence, the protectionists argue that the rice tariff must be reintroduced. Let us proceed to a discussion of each of these points.

IV. FOOD SECURITY IN HAITI

The claim that Haiti was a country that 'could meet most of its own food needs'¹⁹ before trade liberalization took place is patently false. The available evidence on the state of nutrition in Haiti in the 1950s, 1960s and 1970s instead indicates that malnutrition was widespread. In the mid-1960s, Haitian preschool children were found to lag behind American ones in weight already during their first year and at the age of five to six their average weight was no more than 75 per cent of that of the Americans and their height ten per cent less.²⁰ A survey which covers virtually all the available literature up to 1968 concluded that around two-thirds of all

Haitian preschool children suffered from protein-calorie malnutrition.²¹ A 1958 study found an incidence of ‘complete’ kwashiorkor, with all clinical signs present, of ten per cent and a seven per cent incidence of ‘incomplete’ kwashiorkor, with one or more signs absent. Vitamin B₂ deficiencies were detected among up to 40 per cent of both adolescents and adults in rural Haiti. A 1962 survey revealed anemia among more than 60 per cent of the children in the 5-16 year group.²²

Seven surveys of the average daily calorie and protein intake made in different rural areas between 1951 and 1965 pointed to a daily calorie intake ranging from 1.100 to 1.580 calories in all cases except one (which made it to the recommended level of 2.200 kilocalories). In 1975 a 35 per cent deficit was reported. Similar figures were reported for the protein intake, with a single survey reporting an average that reached the recommended 55 grams per day, the rest ranging from 27 to 40 grams. More than half the Haitian population was ten per cent or more underweight for their height. The shortfall of Vitamin B₂ consumption was estimated to 30 per cent on average in the 1950s and first half of the 1960s.²³ Possibly the overall nutritional situation worsened from 1962 to 1975 in rural areas.²⁴

According to FAO figures, calorie availability in Haiti never exceeded 2.000 kilocalories per person and day between 1961 and 2007, and from 1981 to 1989 it declined steadily from its highest level, around 1.800 kilocalories, to about 1.680. After a minor increase, it was back at more or less the latter level in 1995. The World Health Organization defines a consumption of less than 2.100 kilocalories as ‘unsatisfactory’, and when recommended dietary allowances for the Caribbean and the age and sex composition of the Haitian population are taken into account, the recommended average for Haiti (1971-1995) was 2.270 kilocalories per person and day.²⁵

The FAO findings are supported by other studies. The National Nutrition Survey carried out in 1978 pointed to widespread malnutrition among a sample of more than 5.000 preschool children. Some six per cent were wasted (i.e., weight-for-height less than 80 per cent of the reference median) and almost 29 per cent more were classified as moderately undernourished (between 80.0 and 89.9 per cent of the weight-for-height reference median).²⁶ Stunting (less than 90 per cent of median height-for-age) was also found among preschool children. After weaning, the incidence rose dramatically, to a peak value of 39 per cent in the 48-59 month group, obviously caused by a deficient family diet. Between 22 and 53 per cent of the preschool children were found to be anemic in the various regions and three per cent were diagnosed with kwashiorkor.²⁷

The average calorie deficit per person from 1976 to 1985 was 331 kilocalories per day.²⁸ In 1977, 1980 and 1981, food imports accounted for no more than around 20 per cent of the available calories,²⁹ but in spite of this, the calorie intake was deficient. Also, the 1986/87 Haitian Household Consumption and Expenditure Survey indicated that almost 50 per cent of the households had a calorie intake level below 75 per cent of the recommended level and that 36 per cent consumed less than 75 per cent of the recommended daily protein intake.³⁰

The only possible conclusion to be drawn from the empirical material thus is that Haiti was nowhere in the neighborhood of 'national food security' from the 1950s to the mid-1990s – in spite of tariff protection.

V. THE RICE TARIFF

Let us next look at the rice tariff itself. Some of the authors quoted in the present essay argue that it began to be reduced in the mid-1980s, with further reductions ten years later. This is a false story, however. Let us look at how things evolved from the late 1950s to the mid-1990s.

It is not quite clear when protection on rice was introduced, but it was in place during the Duvalier era. Until March 1, 1987, rice imports were regulated by a de facto quota system. To import rice or maize, registration as an official seller with the Ministry of Commerce was necessary:

The stated policy was that if there was 'need' for additional grain supplies the licence would be granted. Once granted, the agent could import grain if he had sufficient foreign exchange. The need to import was determined in consultation with the Ministry of Agriculture and the Ministry of Commerce. If a shortfall was likely to exist in the market due to insufficient local production, a specified amount of imported grain would be allowed to make up the difference. The only grain excluded from this system was wheat, which was imported exclusively for milling purposes by the government parastatal, the *Minoterie d'Haiti*. In addition, corn imported jointly by the government and the privately owned feed mill ONUAN did not require an import licence.³¹

In order to import rice, payment of a specific duty of US\$ 170 per ton was required. Quite probably the tariff proceeds ended up in the pockets of the presidential family and other members of the ruling clique, or were spent on such pillars of Haitian society as the *tonton macoutes*, exactly like other government revenue at the time.³² Like any other economic regulation, the introduction of a tariff opens for the possibility of revenue seeking because it creates an economic rent: the difference between the world market price and the price paid by the consumers

(inclusive of the tariff).³³ The Duvaliers exploited such rents in two ways, either pocketing them directly or evading tariffs by smuggling goods into Haiti. Jean-Claude Duvalier's father-in-law, Ernest Bennett, apparently ran smuggling rackets for such goods as sugar, flour, cotton textiles and rice. By not paying the tariff, a smuggler can sell a good below the marginal cost of producing it domestically, i.e. below the price asked by the domestic producers.³⁴ Hence, it does not make much sense to think of the rice tariff as a means to protect the rice farmers. Its real purpose was a different one.

When the *Conseil National de Gouvernement* in 1986 began its reversal of the regulations which had characterized the Haitian economy under the Duvaliers it set out to reform the grain import restrictions as well, but not by abolishing them. The import license requirement was, however, scrapped. Instead, together with six other products (maize, sorghum, beans, sugar, chicken parts and pork meat), rice remained subject to import duties. On March 1, 1987, an ad valorem duty of 50 per cent was substituted for the old specific duty and (as before) a ten per cent sales duty was put on the total value of imported rice, including the import duty.³⁵

In the late 1980s, retail grain prices in Haiti (rice, maize, sorghum, wheat) exceeded those in the United States, but even so, the domestic production of rice, sorghum and maize was insufficient to meet domestic food demand.³⁶ "Historically, high domestic cereal grain prices have led to relatively high domestic food prices and distorted production practices of agricultural producers. Such conditions are likely to worsen the standard of living and overall nutritional status in the country", concludes a 1991 study of agricultural pricing in Haiti.³⁷

The change came in 1994-1995, when the rice tariff was lowered from 50 per cent of the CIF value to three per cent. In addition, a five per cent stamp tax (on the CIF price plus the tariff) is charged by customs, i.e. another 5.15 per cent of the CIF price.³⁸ At the end of the 1990s Haiti was the most open economy in the Caribbean area and one of the most open in the entire Western Hemisphere.³⁹ Haiti's rice producers were thus forced to compete with imports at world market prices, but not only that. They also had to fight against United States subsidies to domestic rice producers.

United States farmer lobbies are notoriously strong. Between 1998 and 2005 the direct taxpayer subsidies to American rice producers averaged \$1 billion per year, accounting for half of all the income of the rice producers, and the projection up to 2015 was \$700 million per year. It was estimated that around 2005 these subsidies drove the price of rice in the international market down with some 4-6 per cent.⁴⁰ The American rice subsidies contributed to a lower rice price in Haiti too.⁴¹ The exact magnitude of the impact is not known. It should, however, be noted that if

the effect was in the 4-6 per cent range there as well, it was more than neutralized by the tariff and the stamp tax.

VI. THE EFFECTS: CONSUMPTION AND IMPORTS

Over time, rice consumption has increased in Haiti. What was formerly a luxury good for the common Haitian gradually turned into the staple food of the country. According to estimates by the United States Department of Agriculture, the consumption trend for rice has been an upward one at least since 1995/1996, as shown by the upper line in Chart 1.

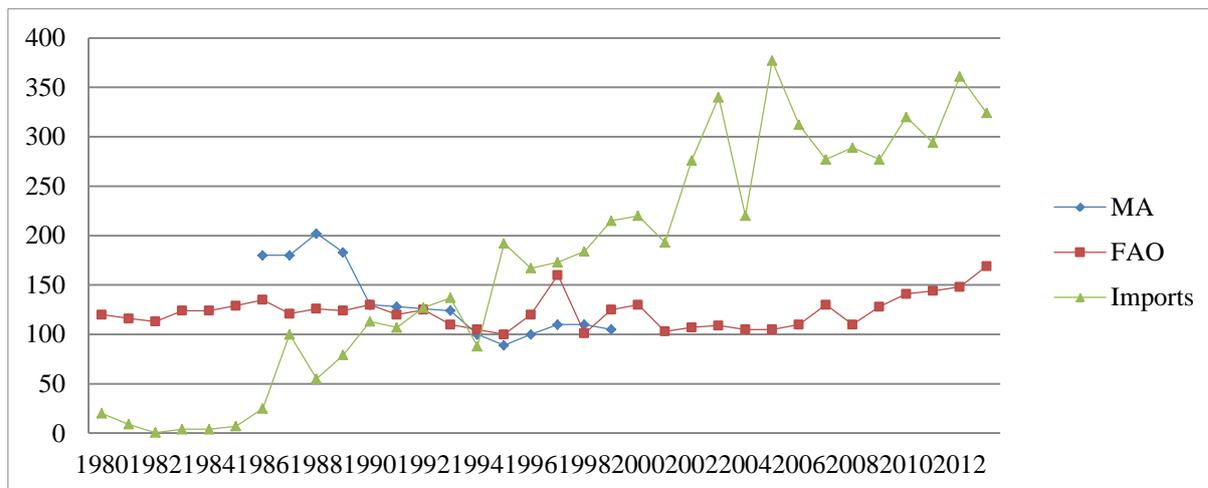
Chart 1: Haitian Rice Consumption and Production 1995/1996-2012/2013 (metric tons, milled rice)



Source: Trego (2013:3).

Standard textbook tariff analysis leads us to expect that when the tariff rate was lowered rice imports should increase and domestic production of rice and rice farmer incomes should fall.⁴² Let us begin by looking at imports. The year-to-year variations of Haitian rice imports from the United States from 1980 to 2013 are found in Chart 2.

Chart 2: Haitian Rice Production and Rice Imports from the United States 1980-2013 (paddy, thousand metric tons)



Sources: Ministry of Agriculture production estimates: 1992-93: International Monetary Fund (1996) p. 6, rest: International Monetary Fund (2001), p. 46; FAO production estimates: Food and Agriculture Organization (2014); Imports: United States Department of Agriculture (2014a).

The chart shows a clear linear trend in Haitian rice imports from the United States from the early or mid-1980s to the present. The replacement of the import license system with the ad valorem tariff in 1987 may have been partly responsible for the increase up to 1993, but it may also be argued that the trend break came already in 1986, with the fall of Baby Doc. Removing the exceptional year 1987 in fact gives a linear trend 1985-1993. The politically turbulent year 1994, with the ouster of the military junta and the return of President Jean-Bertrand Aristide caused imports to drop, but thereafter the upward trend continued. To what extent the reduction of the tariff from 50 per cent to three per cent was responsible for the jump from 88.000 tons in 1994 to 191.000 tons in 1995 is difficult to know. The presumption is that if 1994 had been a politically ‘normal’ year, the import level would have been somewhere in the neighborhood of 150.000 tons (judging from the trend).

It is difficult to draw any clear conclusions of the effects of the tariff reduction from the chart. If anything, it rather seems to indicate that the replacement of import licensing with the 50-per cent tariff was the most important change in trade policy. The trend is an upward one all the way from 1985 and there is no abrupt break in the mid-1990s, which in turn may indicate that the trend may be driven by other factors than changes in trade policy.⁴³

The most likely driving force is found in the erosion process described above which tends to reduce the arable soil over time and reduce the production capacity of Haitian agriculture. In a situation where

domestic agricultural output tends to stagnate and fall over time in per capita terms, with a growing population one would expect food imports to increase even in the absence of any changes in trade policy. Between 1980 and 2013 the Haitian population increased from 5.7 million to 10.3 million, i.e. it almost doubled.⁴⁴ To the extent that incomes increased in the economy this contributed to the demand for food as well, and if domestic production could not expand fast enough to accommodate the increased demand, the latter spilled over into imports.

VII. DOMESTIC RICE PRODUCTION

Next, let us look at the available production statistics. Basically, two different series are available, one from the Haitian Ministry of Agriculture and one from the FAO. Both are found in Chart 2. The official rice production figures from the Haitian Ministry of Agriculture. These figures point to a decline of Haitian rice production from an average slightly above 185.000 tons per year during the latter half of the 1980s to 127.000 tons in the early 1990s, followed by a decline to a low level of 89.000 tons 1994-1995 and an increase to an average of 106,000 tons 1996/96-1998/99 – instead of the decline postulated by the free trade critics.

The FAO estimates, also based on official Haitian figures, in turn, show a modest production increase during the first half of the 1980s, followed by a decline during the following ten years, a *rise* during the first few years after the tariff reduction, a decline up to the early 2000s, a relatively ‘flat’ trend 2002-2008, and a marked rise thereafter. Again, the only possible interpretation is that if there was any impact of trade policy changes it came from the scrapping of the import license system rather than from the subsequent reduction of the rice tariff.

The Santo Domingo office of the United States Department of Agriculture, finally, estimates that (milled) rice output has been stationary up to recent years, on average 70.000 tons per year for 25 years before it increased to 90.000 tons in 2010 as a result of increased availability of fertilizer and water.⁴⁵ Using a conversion factor of 55 per cent,⁴⁶ 70.000 metric tons of milled rice corresponds to 127.000 tons of paddy and 90.000 tons to 163.000 tons of paddy. The corresponding figures for recent years are 142.000 tons for 2011/2012, 113.000 tons for 2012/2013 (as a result of hurricanes Isaac and Sandy) and 142.000 tons once more for 2013/2014.⁴⁷

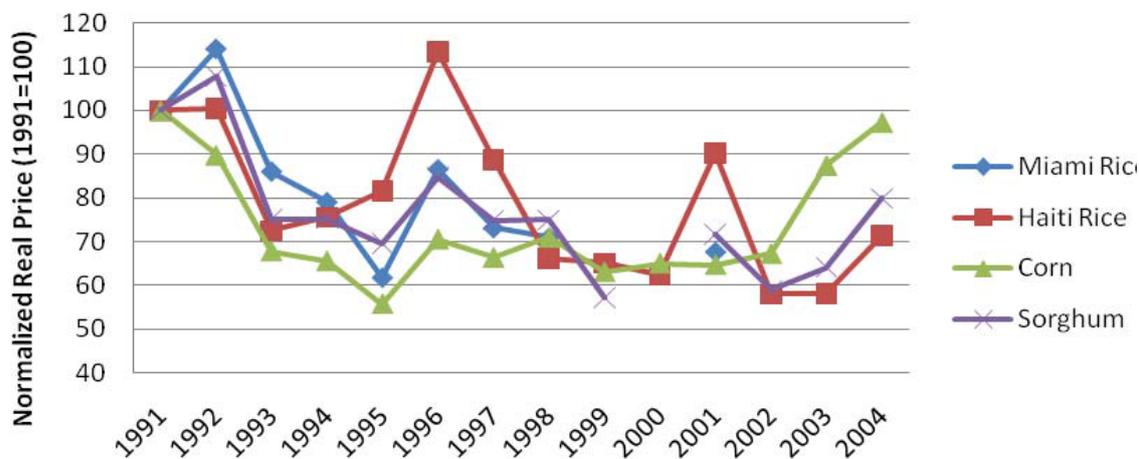
When imports and production of rice in Haiti are compared for the 1980-2013 period it is obvious that the strong negative correlation between imports and production does not exist. This conclusion has already been established for 1980-2008 by Erica Phillips and Derrill Watson:

According to FAO data, rice production remained within a fairly narrow band from 1980 to 2008. This is surprising given that there was a more than 7,000 percent increase in rice imported into Haiti during this time. Some observers have argued that imports and production are negatively correlated ... as imports increased, local production decreased. However, available data show that the short-term increases in local production do not correspond with short-term decreases in imports and vice versa. For example, a large increase in production such as in 1997 (FAO data) resulted in no comparable drop in imports. The 2001 and 2005 import spikes occurred with no apparent drop in production.⁴⁸

To this it may be added that between 2009 and 2013 production and imports of rice moved in the same direction: upwards. Judging from the above, it was apparently not the changes in trade policy that were mainly responsible for the changes in the production of rice in Haiti.

VIII. EFFECTS ON FARMER INCOMES

The impact of the 1994-1995 trade liberalization on rice farmer incomes is not self-evident. None of the two production series in Chart 2 shows much quantitative variation, so the question then becomes what happened to prices. As Phillips and Watson demonstrate, the trend of not only the nominal price of rice but also that of the sorghum and maize prices was an upward one during the entire period 1991-2004.⁴⁹ Once inflation is taken into account, however, as indicated by Chart 3, the series for trend for the three cereal prices in Port-au-Prince is a downward one 1991-2002, followed by an increase during the politically turbulent years 2002-2004. The 1994-1996 pattern for Haitian rice does not provide any immediate support for the hypothesis that the price of Haitian rice fell abruptly after the tariff reduction. The 1996 spike does not make sense, and the price remained above the 1994 level until some time in 1997 before it fell, i.e. if there as any direct cause-effect relation, the effect was lagged.

Chart 3: Real Cereal Prices in Port-au-Prince 1991-2004 (1991 = 100)

No price data for Miami rice were available for 1998-2000 and 2002-04.

Source: Phillips and Watson (2011:10).

It should also be noted that the prices shown in Chart 3 are retail prices in the capital, not producer prices e.g. in the Artibonite Valley, but to the extent that real price changes were passed on from the consumer end through the marketing chain for rice to the producers, the same general downward trend should apply. This in turn opens for the possibility that producer incomes may have fallen as well, especially if production has remained virtually unchanged, as indicated by the United States Department of Agriculture, but given the shaky nature of the production estimates, caution is recommended when it comes to drawing conclusions.

To conclude, insofar as they tell us anything at all, the available time series of rice production and imports in Haiti do not corroborate the claims made by those who contend that the reduction of the 50 per cent rice tariff to three per cent in the mid-1990s led to an abrupt break in the trend of rice imports and rice production. To the extent that trade policy changes have had an impact, it rather stemmed from the scrapping of the suspect system of import licensing that was in vigor during the Duvalier period and its replacement by an ad valorem tariff, but this is not very likely. Rice imports display a rising, linear trend all the way since 1984 or 1985, with a marked increase from 1986 to 1987 of about 75.000 tons, but then it has to be kept in mind that 1986 was a turbulent year – the year that Baby Doc fell from power. The increase from 1994 to 1995 is larger: around 104.000 tons, but then again, 1994 was the year when military rule came to an end, American troops moved into Haiti for the second time, Jean-Bertrand Aristide came back from his exile and the international sanctions against Haiti ended. If 1994 had been a ‘normal year’, following the trend, i.e. if the 1994 value is replaced with the trend value for the same year, we would

end up somewhere in 130.000-140.000 ton interval. Some 40.000-50.000 tons of the 1994-1995 import increase may thus be explained by 'extraordinary' political events in 1994 which made rice imports 'dip' from the expected (trend) value. This leaves 50.000-60.000 tons that may have been due to the lowering of the tariff, but if that was so, the effect was hardly lasting, for the 1996-1998 figures were lower than the one for 1995. It was only from 1998 that the upward trend was resumed, but then in a pronounced zig-zag fashion.

When we turn from import figures to production figures, pretty much the same picture emerges. The FAO production figures do not show much correlation with import figures. In spite of a huge rise of imports over the 1980-2008 period production figures vary very little, and from 2008 to 2113 import increases and production increases go hand in hand. The figures provided by the Haitian Ministry of Agriculture, when compared with imports, possibly lend some support to the hypothesis that the scrapping of the import license system and the introduction of an ad valorem tariff of 50 per cent led to increased imports and reduced production, but they contradict the hypothesis that the reduction of that tariff to three per cent reduced production, so if we are to believe these statistics, it was the *introduction* rather than the *reduction* of the 50 per cent ad valorem rice tariff that was responsible for the fall in Haitian rice production, quite logically, since it involved going from a more to a less restrictive foreign trade regime.

IX. OTHER CROPS

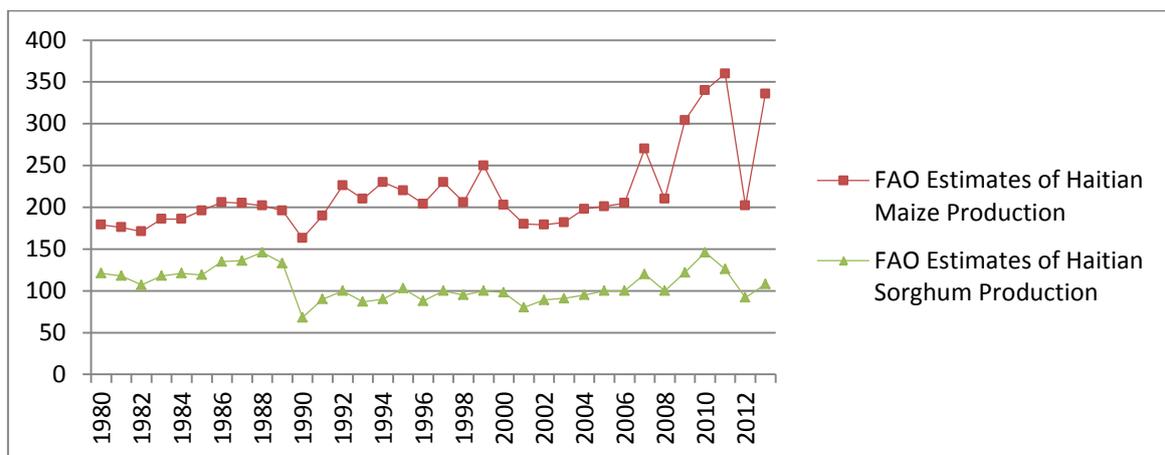
Rice is an important foodstuff in Haiti, but it is far from the only one. The Haiti Household and Consumption Survey, carried out 1986-1987, revealed that rice was the leading supplier of calories in the country, but its share in the total was a mere 15.4 per cent, closely followed by oils, with 14.7 per cent, and its share of the protein supply was 12.8 per cent, less than that of green peas: 20 per cent.⁵⁰ This was before both the introduction and the reduction of the 50 per cent rice tariff. Ten years later, after the tariff reduction, these shares had changed, but not in any dramatic way. According to an FAO estimate, rice supplied only 18 per cent of the daily energy intake, 16 per cent of the protein intake and three per cent of the fat intake in Haiti 1997-1999, to be compared with figures around 65-77 per cent, 65-70 per cent and 17-25 per cent, respectively, in countries like Bangladesh, Burma, Laos, Cambodia and Vietnam.⁵¹ Other foodstuffs are as important as rice in Haiti.

This leads to another question: Did imported rice expand at the expense of other crops than rice? Since the prices of the major grains

produced in Haiti (rice, maize and sorghum) tend to move in the same direction (they are close substitutes), a lower price on rice will have an impact also on maize and sorghum prices. ‘It is possible, therefore, that U.S. subsidies [and a lower rice price] could thus benefit even Haitians who consume no imported rice by lowering the prices of other foods while harming all Haitian agriculturalists who produce any food that competes with Miami rice.’⁵²

Chart 4 shows FAO estimates of Haitian maize and sorghum production from 1980 to 2013, based mainly on official data. The conclusion to be drawn from this table in the case of maize is the same as in the rice case. Possibly the introduction of the rice tariff in 1987 had a small and passing impact, while it is difficult to see any impact of the 1994-1995 rice tariff reduction. If anything, one would expect the simultaneous reduction of the maize tariff from 50 to 15 per cent to have had a stronger impact. Possibly this is what explains the lower figures from the mid-1990s to the mid-2000s.

Chart 4: FAO Estimates of Haitian Maize and Sorghum Production 1980-2013 (thousand metric tons)



Source: Food and Agriculture Organization (2014).

Another close substitute to rice is sorghum. The FAO production series (based on official figures) is also shown in Chart 4. Production was almost halved in 1990 and then remained low until 2007. Sorghum had no tariff protection. The product displays the same overall flat trend as rice and maize. There is a marked drop after the introduction of the 50 per cent rice tariff but nothing comparable after its removal. The introduction of a less strong protectionist rice regime in 1987 may have induced consumers to eat more rice and less of the as somewhat ‘inferior’ perceived sorghum.

Possibly maize and sorghum producers were hurt by price reductions in the mid-1980s and afterwards, but the available data do not allow us to draw any definite conclusions with respect to their incomes. What appears to be clearer is that the production of the three relatively close substitutes rice, maize and sorghum has been relatively stationary, with the possible exception of the years following the introduction of the rice tariff. It has not been possible to verify any strong negative effect of the reduction of this tariff in any of the three cases.

X. THE SUGGESTED REMEDY

For the critics of free trade and rice imports, the obvious solution of the rice dilemma (and perhaps also to the problems of Haitian agriculture in general) is to increase tariffs.⁵³ It has also been suggested that increased production subsidies should be combined with subsidies to the rice consumers to make it possible for the average Haitian to afford to buy rice.⁵⁴

Beginning with the subsidies, these have to be financed. Increasing the producer price while keeping the consumer price at some level below it, say today's level, requires outside finance. The difference between the producer price and the consumer price must be covered and that money must be taken out of the government budget. The revenue obtained from the rice tariff will only suffice to cover the consumption of imported rice (redistributing the tariff revenue to the consumers), but not the domestically produced quantity. Hence, other taxes will have to be resorted to in order to make up for the difference.⁵⁵ It does not make any sense to aim at the *average* consumer either, giving everybody the same subsidy. The target group must be the poor, the most needy.

Let us proceed to the question whether an inward-looking strategy concentration of food production for the domestic market makes sense, focusing on what a reintroduction of the rice tariff would lead to. In the first place it will increase the price that the consumers will have to pay, and if the tariff increase is high enough – say going back to the 'old' 50-per cent level – social turmoil may ensue, as in April 2008, when the consumer price of rice had increased by 29 per cent in a year.⁵⁶ A 50-per cent increase could be expected to have similar effects. This increase has a substitution effect which tends to reduce the consumption of rice (the good whose price rises) and increase that of close substitutes like sorghum and maize. However, it also has an income effect, for when the price of rice increases while that of sorghum and maize remains constant this is tantamount to a reduction of income at given prices. It will make the consumers buy less of all three goods. The consumption of rice will fall

because both effects are negative. What happens to the consumption of the two other cereals is not given, since the two effects work in different directions. However, in the case of a 50-per cent increase of the price of rice there is good reason to expect that the substitution effect is the stronger one so that the consumers will shift into cheaper sources of carbohydrates, which in turn will serve to increase the price of e.g. sorghum and maize as well (and the production of these two goods). As we have already seen, the prices of rice, maize and sorghum tend to move together in Haiti. The advocates of increased tariffs, however, concentrate their argument on the effects on the rice producers. Which will they be?

XI. CONSTRAINTS ON RICE PRODUCTION

Standard tariff theory predicts that the rise of the relative price of rice brought about by the tariff will lead to increased rice production. It postulates that producers are able to react to the stimulus provided higher price. In Haiti, however, this may not be the case. A recent Oxfam study, by Carlos Furche,⁵⁷ points to the existence of a large number of obstacles, other than low tariffs and US rice subsidies, that combine to produce low productivity and a low supply elasticity with respect to tariff changes for rice. The study builds on interviews with government officials and agricultural specialist officers, as well as local NGO staff and rice farmers in the Artibonite Valley.

On the production level, the kind of rice produced in the major production centers in Haiti (the Artibonite Valley, with at least two-thirds of the national production, the Maribahoux Plain around Ouanaminthe in the north-east and the area around Torbeck on the southwestern peninsula) is critically dependent on water, but the irrigation infrastructure is old, limited and poorly maintained, notably in the most important production region: the Artibonite Valley. The adoption of high-yield rice varieties has been slow, due, not least to insufficient research about local conditions. In the main, Haitian rice farmers use uncertified low-yield seeds. The level of fertilizer use (both organic and mineral) is low and the knowledge of soil conditions is insufficient. The degree of adoption of efficient techniques for planting preparation, and crop, water and soil management is low as well. The smallness of the holdings, less than a hectare on average, excessive subdivision of plots and the insecurity of property rights all have an important role to play in this. Rice production suffers from most of the difficulties that pertain to the rest of Haitian agriculture as well.⁵⁸

Moving on to the processing and transformation stage, the infrastructure for the drying of the unmilled paddy is by and large lacking. The existing milling capacity is fragmented and consists of a large number

of small traders and processors. Small rice farmers have no access to adequate facilities for collecting and storing their rice. Farmers are separated from processors. The existing marketing channels are inadequate because they do not transmit commercial information efficiently and lack economies of scale.

Deficiencies are also present on the institutional level. Supporting services from the Ministry of Agriculture and the special organization for the development of the Artibonite Valley, *the Organisme de Développement de la Vallée de l'Artibonite* (ODVA), have been lacking. So has technical assistance and technology transfer in general as well as support to the technical and economic management of small farms. Finally, the rice farmers have not had access to credit coupled to productivity-increasing modernization programs.

Factors connected to international trade are also likely to contribute. Haiti has no tools which allow the country to cope with price instability and volatility. No regulatory framework is present that allows for a differentiation of imported rice with respect to quality and price. Imported rice is not subject to adequate health controls. Low-quality, cheap rice is easily smuggled into the country, especially across the Haitian/Dominican border.

Given these findings, Furche's conclusions are completely clear: "There is no single policy measure that in isolation would address the deficiencies affecting the rice value chain in Haiti."⁵⁹ With respect to the ability of tariff increases to stimulate rice production in Haiti he writes:

Haiti's rice value chain ... clearly suffers from a set of deficiencies in primary production, processing, and marketing, which were present prior to trade liberalization. Therefore, it would be a mistake to assume that the mere change in ... the tariff protection level, could stimulate a rapid domestic production response that would replace imports competitively.⁶⁰

XII. INCREASING YIELDS VERSUS INCREASING TARIFFS

After identifying the constraints on Haitian rice production, Furche goes on to simulate the impact of higher yields and higher tariffs, respectively, on rice farmer incomes.⁶¹ He works with two different assumptions with respect to current yields: 1.75 tons per hectare (somewhat below the Haitian average) and 2.5 tons (above the average). At a given world market price of \$550 per ton a 30 per cent yield increase (the lowest of his three assumed yield increases) would increase farmer incomes with 29 (the lower current yield) to 30 per cent (the higher current yield). An increase of the rice tariff from the current three per cent level to 15 per cent (at the same world market price), in turn, yields an income increase of 11.6

per cent and its impact on producer prices is not strong (less than twelve per cent). Furche also employs Monte Carlo techniques to obtain elasticities of farmer income response to changes in yields, tariff levels and international prices.⁶² His results point to a proportional increase of income, (elasticity = 1) when yields increase and a mere three per cent increase (elasticity = 0.03) in the case of tariffs.

What do we make of this? The interpretation of the simulations is not obvious but, if anything, they seem to indicate that tariff increases would have only a minor role in a policy aiming at increasing rice production in Haiti. The structural constraints identified by Furche will serve to hold back production even if tariff rates are increased. This is also the conclusion drawn by Furche himself, who instead proposes an integrated scheme of measures designed to put rice production in Haiti on a technically and economically sound basis aiming at increased yields, extension of irrigation, a reasonable level of self-sufficiency (50 per cent over eight years), higher farmer incomes and better conservation of the environment. His proposal contains a formula for the stabilization of the import price at some agreed level given by the sum of the CIF price, the regular tariff level and a variable tariff that comes into play when the CIF price falls so as to put the import price below the agreed minimum price of admission. The latter scheme is intended to provide a guarantee of price stability both to producers and consumers.

But why should you concentrate just on rice? According to the 2009 agricultural census, there were more than one million farms in Haiti. Only 16 per cent of these were found in the Artibonite department.⁶³ Of these, an estimated 60.000 were rice growers who employed another 30.000 people, in 2005.⁶⁴ The Artibonite accounts for between two-thirds and three-fourths of the Haitian rice production,⁶⁵ so the total number of rice producers should not exceed 100.000 and is probably lower than so.

If you want to employ tariff protection it must hence be desirable to equalize tariff levels for different agricultural goods so as not to favor a minority of farmers at the expense of the majority and not to distort consumer choices and resource allocation in production. Furche recommends a level of around ten per cent for rice, wheat, maize and sorghum, since these products are close substitutes.⁶⁶

Moving on to the political level, increasing the rice tariff does not seem to be on the agenda in Haiti. Protection of the rice farmers would have to be obtained at the expense of the poor Haitian consumers, those living on less than two dollars a day – clearly impossible. Instead, President Martelly appears to be intent on increasing the production of rice through the introduction of superior techniques and inputs that will lead to

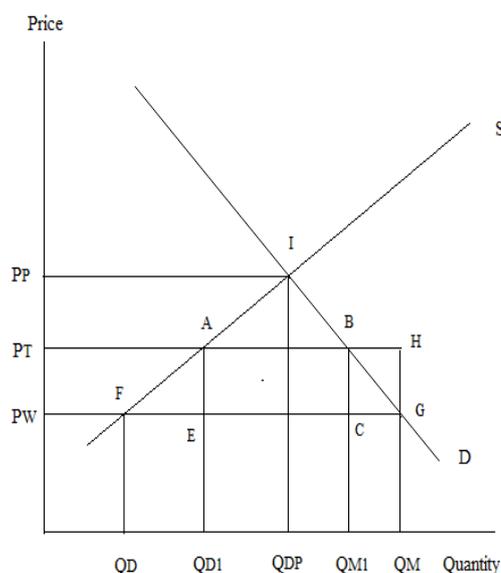
increased yields.⁶⁷ Should rice production prove difficult to increase, food habits could be partly changed. “Locally grown crops such as yam, manioc, sorghum, sweet potatoes and maize were the staples of previous generations, who had rice as a Sunday treat. They grow easily in Haiti and provide a nutritious alternative to rice ...”⁶⁸

XIII. THE EFFECTS OF INCREASED RICE TARIFFS: A DIAGRAMMATIC ANALYSIS

The argument can be summarized with the aid of Chart 5, where D is the domestic demand curve for rice and S the domestic supply curve. In the present situation Q_M units of rice are consumed, Q_D of which are produced domestically, both at the international price P_W (which also includes the American subsidies and the present tariff level).

If the tariff is increased the price obtained by the domestic producers and paid by the domestic consumers increases to P_T while the world market price remains at its old level. This reduces Haitian rice consumption to Q_{M1} , reduces imports from $Q_M - Q_D$ to $Q_{M1} - Q_{D1}$ and increases domestic rice production from Q_D to Q_{D1} . The tariff revenue amounts to ABCE. The domestic producers have made a gain equal to $P_W P_T A F$ (increased producer surplus, i.e. increase of revenue over cost) while the consumers have lost $P_T B G P_W$ (by paying a higher price and consuming less). It also follows that if the supply response when the tariff is increased is sluggish (the supply curve is steep) the gain in terms of producer surplus will be small, and the main effect of the tariff will be to make consumers pay more and eat less.

Chart 5: The Effects of a Tariff and a Subsidy on Rice



The tariff increase has hence hurt the consumers. What happens if we introduce subsidies? Assume that we want the consumers to consume exactly as much as they did before the tariff increase and at the same price as before. The total subsidy required to achieve this is P_{THGP_W} , but this subsidy must be financed. To cover the import part, $Q_M - Q_{D1}$, the tariff revenue, now equal to $AHGE$, can be used, but that does not cover the domestically produced part Q_{D1} . For that, an additional tax revenue of $P_{TAE} P_W$ is required.

What is needed if we are to increase the supply of domestic rice so that it covers the entire consumption without harming the consumers is a rightward shift in the domestic supply curve until it intersects the demand curve in point G. Then all imports have been driven out of the market. This, however, can never be achieved by a tariff, since the tariff only makes production increase along the given supply curve. If we impose a prohibitive tariff on rice that allows the domestic producers to take over completely we end up with a price of P_P and domestic consumption and production equal to Q_{DP} , i.e. with an even greater welfare loss for the consumers. We have ensured that 100 per cent of the rice consumed in Haiti comes from domestic producers, but defining food security that way makes absolutely no sense, for we have hurt the consumers in the process. They are worse off than before. The problem with the tariff is that it cannot shift the domestic supply curve. For that, other supply stimulating measures that reduce production costs and make Haitian rice producers more efficient are required, as discussed by Furche.

Carlos Furche's analysis of the problems of Haitian rice farming is infinitely more sophisticated than the various indiscriminate calls for protection that I have referred to above. It is based on the Haitian reality, notably that of the actors in the rice sector. It identifies real constraints and does not rely on wishful thinking with respect to goals or measures. In sum, it provides a valuable starting point for further penetration of what hitherto has been one of the most politicized areas of the economic policy debate in Haiti – an area where the conclusions have by and large been assumed rather than established through careful examination of facts.

XIV. CONCLUSIONS

The main conclusions to be drawn from the present analysis are the following:

1. There was never any need to use tariff reductions to create a cheap industrial labor force. The secular interaction between population growth, soil erosion and falling rural incomes had already seen to that.

2. Haiti had no ‘food security’ before the reduction of the rice tariff.
3. The rice tariff reduction did not trigger rice imports. Population growth was the main cause.
4. For lack of data it has not been possible to establish the effects of the tariff reduction on farmer incomes.
5. The production of maize and sorghum – close substitutes to rice – do not seem to have reacted to the reduction of the rice tariff.
6. Rice tariff increases will not serve to increase farmer incomes in general. Rice farmers constitute no more than ten percent of the farming community and rice production is held back by a number of supply constraints that cannot be removed by tariffs.
7. The use of tariffs can never produce food security. For this, supply constraints must be removed both in rice production and in the production of other foodstuffs.

The rice tariff issue turns out to be a non-issue, a fight against windmills and a desire for a panacea which only serves to obscure the real issues. Haiti is a small, open economy, more open than most. Regardless of whether you like it or not, the country is part of the globalization of the last few decades. Its domestic market is small, some ten million people, the majority of whom live in poverty.⁶⁹ It would be cynical to force these people to pay 50 per cent more for their rice. The issue is how Haiti can make the best use of its scarce resources inside and outside agriculture to lift people out of poverty through an outward-looking strategy so that they do not have to emigrate but can be productively employed at home. How can industry and agriculture complement each other in this process? But that is a story that falls outside the scope of the present work.⁷⁰

NOTES

¹ Lundahl (2011:227).

² Lundahl (1983:chapters 7-8).

³ Lundahl (2011:257).

⁴ It is frequently claimed that the reduction took place in the mid-1980s, but that was not the case.

⁵ The argument appears in different forms in a large number of contemporary books and articles. See e.g. Fatton, (2011), Farmer (2011), Schuller (2012), Katz (2013), Wilentz (2013), Bell (2013) and Dupuy (2014).

⁶ Bell (2013:127-28), Fatton (2011:53).

⁷ See e.g. Schuller (2012:163) and Chavla (2010).

⁸ See Lundahl (2013:34), for references.

- ⁹ Murray (1977:410).
- ¹⁰ Lundahl (1979:chapter 5).
- ¹¹ Rybczynski (1955).
- ¹² In Haitian agriculture very little capital is used. The production functions are assumed to be linearly homogeneous, i.e. no economies of scale are present.
- ¹³ Another factor contributing to soil erosion in Haiti is the fabrication of charcoal, which also tends to increase as the population grows.
- ¹⁴ Lundahl (2013:188).
- ¹⁵ Ibid., p. 36.
- ¹⁶ Ibid., pp. 176-77.
- ¹⁷ See e.g. Wilentz (2013:108) and Katz (2013:141-42), for short descriptions.
- ¹⁸ As do e.g. Schuller (2012) and Chavla (2010). Cf. note 8 above.
- ¹⁹ Hallward (2007:5).
- ²⁰ Lundahl (1979:414).
- ²¹ Beghin et al. (1970).
- ²² Lundahl (1979:415).
- ²³ Ibid., pp. 417-21.
- ²⁴ Ibid., pp. 109-10.
- ²⁵ Phillips and Watson (2011:3-4).
- ²⁶ Graitcer et al. (1980:762-63).
- ²⁷ Ibid., p. 763.
- ²⁸ Deaton and Siaway (1988:50).
- ²⁹ Ibid., p. 45.
- ³⁰ Jensen et al. (1990:15).
- ³¹ Ibid., p. 3.
- ³² Cf. Lundahl (1979:chapters 7-8) and (1992:chapters 12 and 19).
- ³³ Bhagwati (1982).
- ³⁴ Lundahl (2013:270).
- ³⁵ Jensen et al. (1991:3).
- ³⁶ Ibid., p. 2.
- ³⁷ Ibid., pp.3-4.
- ³⁸ Furche (2013:45).
- ³⁹ International Monetary Fund (2001:41, 44).
- ⁴⁰ Phillips and Watson, (2011:11). In February 2014, the system was changed (United States Department of Agriculture, 2014b), doing away with direct subsidization. Hopefully, the net result of the reform is to reduce the support to American rice farmers.
- ⁴¹ Phillips and Watson (2011:11).
- ⁴² Lundahl (2013:274-77).
- ⁴³ Cf. Phillips and Watson (2011:6).
- ⁴⁴ See World Bank (2014).
- ⁴⁵ Suarez and Rubio (n.d.).
- ⁴⁶ Trego (2013).
- ⁴⁷ Ibid.
- ⁴⁸ Phillips and Watson (2011:10).
- ⁴⁹ Ibid., p. 9.
- ⁵⁰ Jensen et al. (1990:27).
- ⁵¹ Kennedy et al. (2002), Table 1.
- ⁵² Phillips and Watson (2011:11).
- ⁵³ See e.g. Chavlah (2010), McGuigan (2006:15), Fatton (2014:9) and Dupuy (2014:124).
- ⁵⁴ Dupuy (2014:124).
- ⁵⁵ See Chart 5 below.

- ⁵⁶ Lundahl (2013:276).
- ⁵⁷ Furche (2013). Cf. also Wilcock and Jean-Pierre (2012).
- ⁵⁸ Lundahl (1979).
- ⁵⁹ Furche (2013:37).
- ⁶⁰ Ibid., p. 28.
- ⁶¹ Ibid., Appendix 2.
- ⁶² The response of income to a change of one standard deviation in each of the independent variables separately (with the other variables held constant).
- ⁶³ République d’Haïti (n.d.), pp. 1-2.
- ⁶⁴ EMMA (2010:6).
- ⁶⁵ Furche (2013:31).
- ⁶⁶ Ibid., p. 46.
- ⁶⁷ *The Economist* (2013).
- ⁶⁸ Quoted by *ibid.*
- ⁶⁹ The newest available estimates, based on new national definitions of poverty lines, indicate that almost 59 percent lived in poverty (the equivalent of US\$ 2.41 adjusted for purchasing power) in 2012 and almost 24 percent in extreme poverty (US\$ 1.23) (World Bank, and ONPES 2014, p. 25).
- ⁷⁰ The issue is discussed in Lundahl (2013), Chapter 14.

References

- Beghin, Ivan; Fougère, William and King, Kendall W. (1970), *L'alimentation et la nutrition en Haïti*. Paris: Presses Universitaires de France.
- Bell, Beverly (2013), *Fault Lines: Views Across Haiti's Critical Divide*. Ithaca, NY and London: Cornell University Press.
- Bhagwati, Jagdish N. (1982), 'Directly Unproductive, Profit-Seeking (DUP) Activities', *Journal of Political Economy*, Vol. 90: 988-1002.
- Chavla, Leah (2010), "Bill Clinton's Heavy Hand on Haiti's Vulnerable Agricultural Economy: The American Rice Scandal", *Council on Hemispheric Affairs*, 13 April. <http://www.coha.org/haiti-research-file-neoliberalism%E2%80%99s-heavy-hand-on-haiti%E2%80%99s-vulnerable-agricultural-economy-the-american-rice-scandal/>. Downloaded August 22, 2014.
- Deaton, Bradley J. and Siaway, Arthur T., with the Support of Marilyn Prehm, Jenice Rankins and Thoams Whitney (1988), *A Food Aid Strategy for Haiti Maximizing Developmental Effectiveness*. A Report of the Technical Support to Mission USAID/Haiti. http://pdf.usaid.gov/pdf_docs/PDAAY793.pdf. Downloaded August 23, 2014.
- Dupuy, Alex (2014), *Haiti: From Revolutionary Slaves to Powerless Citizens: Essays on the Politics and Economics of Underdevelopment, 1804-2013*. London and New York: Routledge.
- The Economist* (2013), "Feeding Haiti: A New Menu", June 22.
- EMMA (Emergency Market Mapping and Analysis) (2010), *Port-au-Prince Rice Markets in Post-Earthquake Haiti*.

- http://www.fews.net/sites/default/files/documents/reports/Haiti_EMMA_Report_2010_Rice.pdf. Downloaded December 16, 2014.
- Farmer, Paul (2011), *Haiti After the Earthquake*. New York: Public Affairs.
- Fatton, Robert, Jr. (2011), "Haiti's Unending Crisis of Governance: Food, the Constitution and the Struggle for Power", in Jorge Heine and Andrew S. Thompson (eds), *Fixing Haiti: MINUSTAH and Beyond*. Tokyo: United Nations University Press.
- Fatton, Robert, Jr. (2014), *Haiti: Trapped in the Outer Periphery*. Boulder, CO and London: Lynne Rienner Publications.
- Food and Agriculture Organization (2014), *FAOSTAT*.
<http://faostat3.fao.org/download/Q/QC/E>. Downloaded December 15, 2014.
- Furche, Carlos (2013), *The Rice Value Chain in Haiti: Policy Proposal*. Boston: Oxfam America. <http://www.oxfamamerica.org/publications/haiti-rice-value-chain-policy>. Downloaded December 15, 2014.
- Graitcer, P. L.; Gedeon, M.A.; DeBeausset, I. and Deckett, E.M. (1980), "Haiti Nutrition Status Survey", 1978. *Bulletin of the World Health Organization*, Vol. 58:757-765.
- Hallward, Peter (2007), *Damming the Flood: Haiti, Aristide, and the Politics and the Politics of Containment*. London and New York: Verso.
- International Monetary Fund (1996), *Haiti: Statistical Annex*. IMF Staff Country Report No. 96/128. Washington, DC: International Monetary Fund.
- International Monetary Fund (2001), *Haiti: Selected Issues*. IMF Staff Country Report No. 01/04. Washington, DC: International Monetary Fund.
- Jensen, Helen H., Johnson, Stanley R. and Stampley, Gary (1990), *Nutrition in Haiti: Evidence from the Haiti Household Expenditure and Consumption Survey*. Staff Report 90- SR 52, December. Center for Agricultural and Rural Development, Iowa State University, Ames, IA.
<http://www.card.iastate.edu/publications/dbs/pdffiles/90sr52.pdf>. Downloaded August 23, 2014.
- Jensen, Helen, H.; Banskota, Kamal; Johnson Stanley R., and Manrique, Justo (1991), Analysis of Agricultural and Food Price Policy in Haiti: An Adaptive Policy Simulation Model. *Technical Report 91-TR 22*, October. Center for Agricultural and Rural Development, Iowa State University, Ames.
<http://www.card.iastate.edu/publications/synopsis.aspx?id=805IA>. Downloaded August 24, 2014.
- Katz, Jonathan M. (2013), *The Big Truck That Went By: How the World Came to Save Haiti and Left Behind a Disaster*. New York: Palgrave Macmillan.
- Kennedy, G., Burlingame, B. and Nguyen, V.N. (2003), "Nutritional Contribution of Rice and Impact of Biotechnology and Biodiversity in Rice-Consuming Countries", in *Sustainable Rice Production for Food Security. Proceedings of the 20th Session of the International Rice Commission*. Bangkok, July 23-26. Rome: Food and Agriculture Organization.

- <http://www.fao.org/docrep/006/y4751e/y4751e05.htm>. Downloaded December 15, 2014.
- Lundahl, Mats (1979), *Peasants and Poverty: A Study of Haiti*. London: Croom Helm
- _____ (1983), *The Haitian Economy: Man, Land and Markets*. London and Canberra: Croom Helm.
- _____ (1992), *Ploitics or Markets? Essays on Haitian Underdevelopment*. London and New York: Routledge
- _____ (2011), *Poverty in Haiti: Essays on Underdevelopment and Post Disaster Prospects*. Houndmills, Basingstoke and New York: Palgrave Macmillan.
- _____ (2013), *The Political Economy of Disaster: Destitution, Plunder and Earthquake in Haiti*. London and New York; Routledge.
- McGuigan, Claire (2006), *Agricultural Liberalisation in Haiti*. London: Christian Aid. <http://www.christianaid.org.uk/images/ca-agricultural-liberalisation.pdf>. Downloaded December 17, 2014.
- Murray, Gerald F. (1977), “The Evolution of Haitian Peasant Land Tenure: A Study of Agrarian Adaptation to Population Growth”, PhD Dissertation, Columbia University, New York.
- Phillips, Erica and Watson, Derrill D., II (2011), *Miami Rice in Haiti: Virtue or Vice? Case Study #10-13 of the Program: “Food Policy for Developing Countries: The Role of Government in the Global Food System”*. Cornell University, Ithaca, NY.
- République d’Haïti, Ministère de l’Agriculture, des Ressources Naturelles et du Développement Rural (MARNDR) (n.d.), *Recensement général de l’agriculture 2009. Synthèse nationale des résultats*. http://agriculture.gouv.ht/statistiques_agricoles/EnqueteExploitation/Dossier-Presentation/Exploitants%20et%20exploitations%20agricoles.pdf. Downloaded December 16, 2014.
- Rybczynski, T.M. (1955), “Factor Endowment and Relative Commodity prices”, *Economica*, N.S., Vol. 22:336-341.
- Schuller, Mark (2012), *Killing with Kindness: Haiti, International Aid, and NGOs*. New Brunswick, NJ, and London: Rutgers University Press.
- Suarez, Carlos G. and Rubio, Nicolas (n.d.), *Haiti: Rice Production and Trade Update*. http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Rice%20Production%20and%20Trade%20Update_Santo%20Domingo_Haiti_11-9-2010.pdf. Downloaded August 26, 2014.
- Trego, Rachel (2013), *Haiti: Rice Production and Trade Update*. July 11. http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Rice%20Production%20and%20Trade%20Update_Santo%20Domingo_Haiti_11-7-2013.pdf. Downloaded August 26, 2014.
- United States Department of Agriculture (2014a), Foreign Agricultural Service. apps.fas.usda.gov/GATS/default.aspx. Downloaded August 25, 2014.
- United States Department of Agriculture, Economic Research Service (2014b), *Agricultural Act of 2014: Highlights and Implications. Crop Commodity*

- Programs*. April 11. http://www.ers.usda.gov/agricultural-act-of-2014-highlights-and-implications/crop-commodity-programs.aspx#.U_xRuWNkyf8. Downloaded August 26, 2014.
- Wilcock, David C. and Jean-Pierre, Franco (2012), *Haiti Rice Value Chain Assessment: Rapid Diagnosis and Implications for Program Design*. Boston: Oxfam America. <http://www.oxfamamerica.org/static/media/files/rice-value-chain-background-final.pdf>. Downloaded December 17, 2014.
- Wilentz, Amy (2013), *Farewell, Fred Voodoo: A Letter from Haiti*. New York: Simon & Schuster.
- World Bank (2014), *Population Estimates and Projections: Haiti*. <http://datatopics.worldbank.org/hnp/popestimates>. Downloaded December 16, 2014.
- World Bank and ONPES (Observatoire National de la Pauvreté et de l'Exclusion Sociale) (2014), *Investing in People to Fight Poverty in Haiti: Reflections for Evidence-Based Policy Making*. Washington, DC: The World Bank.