



Centrale Bank van Suriname

LEADING SECTORS OF SURINAME: The impact of Mining, Agriculture and Tourism Activities on the Economy 1970–2012

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Abbreviations

ACP	African Caribbean and Pacific Group of States
Alcoa	Aluminum Company of America
BHP	Broken Hill Proprietary Limited
EU-ACP	European Union→African Caribbean and Pacific Group of States
GDP	gross domestic product
Golden Star	Golden Star Resources Ltd
Grassalco	N.V. Grasshopper Aluminum Company
Mt	metric ton
OPEC	Organization of the Petroleum Exporting Countries
RGM	Rosebel Gold Mine
SBBS	Stichting Behoud Bananensector Suriname
Sf	Surinamese guilder
Suralco	Suriname Aluminum Company
Surgold N.V.	Suriname Gold Company N.V.
Surland N.V.	Surinaamse landbouwbedrijven
WHTC	Western Hemisphere Trade Corporation

Preface

The monograph documents key developments in the main foreign exchange-earning sectors of Suriname. Its publication underscores the desire of the Central Bank of Suriname to strengthen research in economic areas of relevance for Suriname and support the knowledge base of the general public about Suriname's economy. The underlying reason for its production stems from the awareness that developments in the country's financial sector ultimately reflect the sum total of activities in the real sector. Thus this sectorial compilation provides a synergetic link with the Bank's primary role as the supervising and leading institution of the financial sector of Suriname.

The publication describes activities in the mining, agriculture, and tourism sectors from historical and institutional viewpoints and the economic impact that each sector has on the rest of the economy. While it should be of interest to the general reader, we believe it provides additional resource material that could be useful to students in tertiary education and research institutions.

The monograph was produced by the Research Department of the Central Bank of Suriname and we expect follow-up updates sometime in the future, as information becomes available. We trust that readers will find it useful.

Gillmore Hoefdraad
President

Abstracts

An analysis of the bauxite sector in Suriname: 1980-2012

The bauxite industry has existed for more than a century in Suriname and traditionally has had a strong effect on the economy. Because bauxite reserves are expected to be depleted in about ten years, it is important to gain a solid understanding of this sector in order to minimize the effect of the depletion. Therefore, by focusing on key indicators, this paper analyzes the effect of bauxite depletion on the economy of Suriname. The share of the bauxite sector in the gross domestic product is assessed to determine its effect on the economy. The share in foreign capital inflows is also assessed. Furthermore, the contribution to total government revenues is investigated to assess the effect of the sector on the national budget. The data are analyzed largely through graphical representation of the variables. The main conclusion of this research is that the contribution of the bauxite sector to the macroeconomic variables has decreased over the period of analysis. The mining sector is still an important sector of Suriname's economy even with the resurgence of gold and oil sectors and efforts need to be intensified to identify new reserves.

The Story of Gold: The Case of Suriname

Because its international price increased dramatically in the past decade, gold became the most important foreign exchange earner for Suriname. This in-depth study seeks to gain a solid understanding of the gold industry in Suriname. The study focuses on the effect of the sector on the balance of payments; on the international reserves; and on other macroeconomic variables such as government finances, employment, and gross domestic product.

The Oil Industry in Suriname: 1980-2012

Minerals play an important role in economic development, especially for small economies. This certainly applies to the small economy of Suriname, which is dominated by mineral production of bauxite, gold, and oil. Because the mining industry accounts for almost 90 percent of exports, the economy is highly vulnerable to mineral price volatility. This study attempts to determine the effect of the oil sector on the national economy

between 1980 and 2010. Its effect on economic variables such as employment, gross domestic product, and government finances are examined. Its contribution to total exports and the extent to which the economy depends on oil is also examined.

The Banana Industry in Suriname: 1971-2011

Suriname's export agricultural sector, which consists of mainly rice and banana, is the second largest sector after the mining sector. This study gives an overview of the banana sector, explains how the sector developed, and provides opportunities for the domestic economy. First, the historical background, international market position, and institutional issues are described. Next, the paper reviews the sectoral impact on macroeconomic variables, such as gross domestic product, public finances, and the balance of payments.

The Rice Industry in Suriname

Rice, a staple food of the Surinamese people, has been cultivated in the country since the 17th century in Suriname. The objective of this paper is to examine the possible driving forces on macroeconomic level with regard to the rice sector during the period 1955-2010 in Suriname. The paper starts with a historical background along with a discussion of the institutional framework, which has underpinned the development of the crop as a tradable good. Also, the macroeconomic impact of the rice sector is explored so far as it is possible.

The Tourism Sector in Suriname: 1980 – 2010

Suriname is a small, mineral-rich economy whose rich diversity of forest products and exotic animals attract hundreds of thousands of tourists annually. This special type of tourism, called eco-tourism, can complement or even surpass employment creation and foreign exchange earnings potential of the mineral sector. The study seeks to describe the position within and effect of the tourism sector on Suriname's economy from 1980 to 2010.

Chapter

1

Overview

Given that Suriname—a developing country in the Amazonian forest belt—is endowed with abundant natural resources per capita, one would expect its economy to be centered on the production and export of resource-based products. Nevertheless, over time, the model of a primary export economy anchored on the production and export of agricultural staples such as sugar, coffee, and cocoa—which the Dutch introduced in the seventeenth century—has changed considerably. With the rapid expansion of mining and the processing of large reserves of bauxite, financed mainly by the United States' private sector investments from the 1930s, Suriname's economy has been transformed from an agro-based economy into a more diversified one. The economy is now led by the mineral sector, but it also includes tourism and a few identified agricultural products.

In the mining sector, bauxite ore and bauxite derivatives have led the way for an extended period of time, and by the late 1960s, accounted for about 30 percent of overall gross domestic product (GDP) and at least 70 percent of total export revenues (see Van Dijk 2001). However, the direct contribution of the sector to employment has been marginal because of the highly capital-intensive nature of the mining sector. In recent years, the mining sector has become even more diversified since the discovery and exploitation of petroleum deposits and more intensive mining of gold reserves. Exploitation of the former commodity started in 1982, and oil production has increased steadily from about half a million barrels per year through three million barrels in 1995 to nearly 4.5 million barrels in 2000. The highest level of production was achieved in 2008 when approximately 7.2 million barrels were produced. Similar to bauxite, oil production activities have had a limited effect on employment creation. Although its production process has not been as organized as is found in the bauxite and oil sectors, the production of gold has gradually emerged as an important pillar in the Suriname economy. The most recent balance of

payments information from the Government Statistical Services reveals that gold exports have become the leading items in the country's external current accounts for the past four years. Unlike with bauxite and oil, the exploitation of gold has had a significant effect on employment because of the preponderance of several small-scale prospectors that have been engaged in gold mining activities.

Despite the dominant role of the mining sectors in the economy, agricultural activities, usually backed by government policy, have increasingly been significant in their employment and production values. The difference has been that the pattern of commodity specialization has changed from the cultivation of cash crops such as sugar, coffee, and cocoa into crops that double as cash crops and as domestically consumed crops. The key crops under cultivation are paddy rice and bananas, helped by mechanized production methods.

Because none of the aforementioned crops have benefited from detailed historical and economic analysis, this monograph aims to fill that gap. It documents some aspects of real sector activities in Suriname, highlighting six main producing sectors encompassing mining, agriculture, and tourism. The analysis begins with bauxite, which was, until about 2006, the main support backbone of the Suriname economy. Nancy Ong A. Kwie-Jurgens' discourse of the bauxite sector traces the historical background, the institutional underpinnings, and the sectoral impact on the economy, the latter focusing on the period 1980–2012.

The central message is that the bauxite sector owed its development largely to the two world wars, which stimulated high demand for bauxite and its derivatives, alumina and aluminum. The Aluminum Company of America established the Suriname Bauxite Company NV in 1916 to exploit bauxite deposits in the country. During the period of the two world wars, the Aluminum Company of America focused on exporting bauxite to the United States. During the Second World War, Suriname became the main exporter of ore to the United States. After the war, the emphasis shifted to the processing of bauxite into alumina and, subsequently, into aluminum. This was facilitated by the completion of the Brokopondo project in 1958; the project provided energy for bauxite and alumina processing via the hydroelectric power plant built on the Suriname River.

The author also quantitatively itemizes the bauxite sector's enormous contribution to Suriname's economy. According to the paper, the contribution to the country's GDP has varied from around 30 percent of GDP during the halcyon period (1957–1974) when it had its maximum impact to around 20 percent in the later years when other sectors such as gold, petroleum oil, and agriculture also became relatively more important. There was a secular decline during the period 1980–1992 because of international and domestic factors. Given the capital-intensive nature of its production, the bauxite sector's

effect on employment has not been as robust as its contribution to GDP and the balance of payments. Reflecting its waning effect during the 1980s, the proportion of people employed by the sector in total employment declined systemically from slightly more than 6 percent in the period before 1980 to about 2 percent in 2010.

Two areas where the bauxite sector has had the greatest impact are on public finances and on the balance of payments. Through the imposition of levies and royalties, direct government revenues have been considerably bolstered over the years. For the period 1980–1984, the author estimates that the sector has contributed an average of 3.5 percent of total government revenue. Nevertheless, this dropped to approximately 1.6 percent per year between 1995 and 2010, in line with the declining performance of the sector. Perhaps its greatest impact has been on the balance of payments and its contribution to the international reserves. According to the paper, bauxite exports contributed an average of 71 percent of the country's total export revenues over the period 1980–2011, with the highest contribution of approximately 75 percent in 1995. These findings imply that over this period, bauxite helped to finance between 20 percent and 70 percent of the import needs of the rest of the economy.

Although the decline of international demand has caused bauxite to lose some ground in Suriname, the mining sector continues to support the economy because of the emergence of the petroleum and gold sectors. Nancy Sonneveld-Fraser provides a succinct account of the emergence of the oil sector in Suriname over the period 1980–2010. She documents the historiography of the oil sector, discusses institutional issues that have underpinned the operation and development of the sector, and concludes with the macroeconomic impact on Suriname's economy. Although an indication of the availability of oil in Suriname became known as far back as in 1965, its economic exploitation started only after the state oil company, Staatsolie Maatschappij N.V., was established in 1980. Thus, petroleum production started in 1982 with a daily production output of 115 barrels of crude oil.

As a holding company designed to oversee the provision of energy to the entire economy of Suriname, Staatsolie has had to be involved in the whole spectrum of the energy industry in Suriname, including drilling, refining, and marketing of petroleum products and even in non-fossil-based energy products. Consequently, much attention has been paid in the paper on the institutional issues that have underpinned the development of the various subsidiary companies that comprise the holding company. These include the Staatsolie Paradise Oil Company (for refining), Staatsolie Power Company (for electricity generation and distribution), and Staatsolie Hydro Power and Ethanol Project (for non-fossil-based energy products).

Similar to bauxite, the oil sector's main contribution to Suriname economy has been in the areas of public finances, international reserves, and domestic exports. According to the paper, the oil sector contributed an average of 10.7 percent of government revenues over the period 2001–2005, a sharp increase from an average of only about 4 percent over the period 1991–1998. Its contribution rose significantly over the period 2006–2010, to an average of 21.8 percent as production expanded. Although the sector's effect on GDP has not been as robust, it has made a discernible contribution, accounting for 2.7 percent of GDP over the entire period of analysis and about 6.3 percent over the period 2001–2010. Being a more capital-intensive industry, it has had only a marginal effect on job creation, with an estimated contribution of only 0.5 percent of the total jobs created among the economically active population over the period 1990–2010.

Another sector that is rapidly emerging as an important pillar for the Suriname economy is gold. From about 2004, that precious commodity has become the largest foreign exchange earner in Suriname. Peggy Tjon Kie Sim-Balker tells a fascinating story of gold, tracing its development from the eighteenth century—when gold was first discovered in Suriname—to the present. Gold's main distinguishing feature lies in the fact that, for a long time, the sector has been characterized by many small-scale miners whose informal activities have not been properly supervised and documented until about 1994. At that time, the Central Bank of Suriname initiated a program to regulate the sector and harness its enormous potential as a foundation on which to build the country's international reserves.

Available data suggest that between 2000 and 2003, small-scale gold production contributed an estimated annual average of about 2 percent of GDP. From 2004 to 2010, when large-scale production came on stream, the sector's contribution to GDP rose to an annual average of 9.4 percent. After the introduction of large-scale gold mining, the sector made a significant contribution to government revenues, estimated at 6.6 percent per year of the total over the period 2004–2011, largely attributed to the operation of one relatively large firm. Perhaps the amazing revelation is the sudden effect of gold on total exports, especially since large-scale mining was introduced. Gold exports have jumped from slightly more than 10 percent of total exports between 1997 and 2003 to about 48 percent over the period 2004–2011. As more large firms are introduced, one can only surmise about the tremendous effect that the sector would have on the economy.

After mining, the second biggest sector in Suriname is agriculture, with rice and banana being the two main agriculture export commodities. Rice, a staple food of the Surinamese people, has been cultivated in the country since the seventeenth century. Originally imported as food for slaves, its cultivation locally started when indentured laborers were introduced from India and Java, Indonesia. Its cultivation started as small-scale farming activity but became relatively more capital-intensive as the scale and scope of

activities expanded and more capital equipment such as tractors were introduced.

Albert W. Mungroo's paper on the rice industry explains the main driving forces that have helped shape the rice sector over the analysis period, 1955–2010. The author identifies 1900–1949 as a period of rapid growth and innovation in rice cultivation, followed by 1950–1985 as a period of high investments and significant improvements in infrastructure, farmer education, and research. Then there was a period of decline (1986–1994), which was characterized by production inefficiencies and unfavorable macroeconomic conditions. With improved planning, appropriate incentives to rice farmers, improved husbandry practices, and increased external demand, the sector was resuscitated over the period 2003–2010.

Lack of consistent data makes it difficult to have a realistic assessment of the sector's effect on GDP, employment, and exports. The available data depict an increasing trend in rice production until about 1985 when output of 225,000 tons of dry paddy was estimated at about 4.5 percent of GDP. Thereafter, rice output declined steadily. The average share in GDP over the entire period of analysis (1955–2010) is estimated at approximately 2.5 percent. Similarly, the annual average share of rice exports in total exports is estimated at 5.2 percent, varying from about 5.4 percent on average between 1955 and 1985 to about 5.1 percent between 1986 and 2010.

Similar to rice cultivation, banana production in Suriname, according to the study by Natalie Pique-Lont, began in the early twentieth century. Pique-Lont states that banana production did not gain a footing until 1957 because of infestation of the Panama disease, which precluded individual small-scale farmers from profitable cultivation. The government made three attempts to sustain banana production in Suriname through the formation of state-sponsored companies. In 1957, the government created a division in the Ministry of Agriculture and commissioned it to set up large banana plantations as well as a centralized unit for the purchase of bananas from individual farmers. Then in 1971, the government incorporated the existing banana plantations under a state company called Surland N.V., whose initial responsibility was the sale and production of agricultural products. Despite the support by the European Union for banana-producing countries in the African Caribbean and Pacific Group of States (ACP), the industry in Suriname still faced mounting difficulties as a result of steady declines in the international market price arising from overproduction by countries outside the ACP grouping. This, combined with rising unit cost of production, meant that the operation became unprofitable, banana production and exports declined steadily, and Surland collapsed in 2002.

With the likely future erosion of banana trade preferences in mind, the government of Suriname launched in late 2002 a new public company called SBBS and mandated it to establish a sustainable and competitive banana industry in a liberalized market

through cost reductions and production efficiencies. Under SBBS, output per hectare as well as export volumes increased steadily from 2004 to 2010. Nevertheless, the industry still faces a debt overhang from years of unprofitable operations.

With its pristine forest and rich diversity of forest products and exotic animals, Suriname attracts hundreds of thousands of tourists annually. The government is keenly aware of this and is determined to develop tourism as a worthwhile complement to the mining and agricultural sectors to support job creation and foreign exchange earnings. Daniella Wondel's study on tourism reviews developments in the tourism sector from the historical, institutional, and macroeconomic standpoints. According to the author, Suriname attracted more than 200,000 visitors during 2010, from only about 50,000 in 1980; a substantial increase is possible once the appropriate framework and enabling policies are implemented.

Given tourism's link to different service industries such as retail trade and restaurants that also cater to domestic residents, it is not easy to quantify the economic contribution arising solely from tourism activities. Suriname's Bureau of Statistical Services has estimated that hotel and restaurant services together had accounted for between 2.5 and 2.8 percent of GDP at basic prices between 2006 and 2010; this translates into an average contribution share of 2.6 percent over the 5-year period. In terms of balance of payments, the estimated total tourism expenditure of US\$156.6 million between 2006 and 2010 was approximately 10 percent of the total export earnings over that period.

The chapters that follow provide more detailed analyses of the key real sector industries in the economy.

Chapter

2

An Analysis of the Bauxite Sector in Suriname: 1980-2012

Introduction

Bauxite is a sedimentary rock and the ore from which aluminum is produced. Because its specific properties allow for many applications, aluminum is utilized in various industries, such as construction (including housing), the armaments, and aircraft, among others. Historically, the aluminum industry has played an important role in the economy of rich and poor countries. For an extended period, the bauxite industry played a dominant role in Suriname's economy.

The social and economic structure of the country is the result of historical developments. To formulate macroeconomic policies, it is of utmost importance to map and analyze the key sectors in the economy. Suriname's economy is still dominated by the production and export of raw materials. Until the 1920s, agriculture was the main economic activity, but as of the 1930s, the dominant position has been occupied by the bauxite industry. The bauxite sector was one of the largest foreign exchange earners of the country. For many years, it was also the largest source of income of the country. In this context, this paper aims to describe in detail the key developments in this sector over the past three decades.

The effects of the bauxite industry on the economy can be assessed in terms of its contributions to balance of payments, public finances, and gross domestic product (GDP). Various reports of the bauxite companies and policy documents of the government indicate that the current bauxite reserves covered by the existing concessions will be depleted in 2015, which accounted for the departure of one of the major bauxite

companies in Suriname. Provision of new concessions by the government will extend the residence of the company in Suriname. As a result, it is important to understand the industry so that good policy could be made even as the search continues for other potential sectors that could help contribute to the development of the country.

Objective and Scope

This paper aims to comprehensively describe and analyze the developments of Suriname's bauxite sector. The research focuses on the effect of these developments on the national economy.

Period of Coverage of the Research

The development of the bauxite industry in Suriname dates from the year 1910, although not all data are available. This paper is therefore limited to the period 1980–2012, but it aims to highlight the key events before the year 1980.

Method

This paper is based on a literature review and collected statistics on the bauxite industry in Suriname. Moreover, through open discussions with various experts in this field, an attempt was made to gain more insight of the sector. This paper has been developed from the results of earlier studies and sector information in the annual reports of the Central Bank of Suriname and the reports of the Bauxite Institute of Suriname.

Structure of the Paper

This research starts with a historical account of the bauxite industry to provide the background for the contextual framework of current activities. This section explains the historical importance of the bauxite industry in the world and its origin in Suriname. It also outlines the establishment and departure of investors and the signed joint-venture agreements. The next section reviews the institutional framework that highlights the development of regulations and their effect on the economy, the sector itself, and the investors. The fourth section describes the macroeconomic impact of the sector on the national economy, focusing on the important economic variables of the country. In the final section, the conclusions and recommendations are given.

Historical background

This section provides background information on the bauxite mining sector in Suriname to understand its origin. It starts with a discussion of the world bauxite industry in general, followed by the country characteristics. In this paper, the bauxite industry includes all activities on the mining of bauxite and further processing into alumina and unwrought aluminum. Last, the history and development of the bauxite industry in Suriname are discussed. This part will cover the emergence of the sector in Suriname, the established companies, the signed joint-venture agreements, and the departure of the second biggest company in the sector.

Emergence of the Bauxite Industry Worldwide and in Suriname

Bauxite ore derives its name from the area in France where the French expert, Paul Bert, who discovered it in 1821 hails from. This material consists mainly of 52 percent alumina, 27.6 percent iron oxide and 20.4 percent water (Kalpoe, 1983). Since the discovery of bauxite ore, many scholars have attempted to extract the aluminum metal out the raw material. American scientist Charles Hall and his French counterpart Paul Héroult succeeded in 1886 in developing a suitable industrial process to derive aluminum from alumina independently from each other. The following year, the Austrian expert, Karl Bayer, discovered an inexpensive method to produce alumina from bauxite. These two discoveries heralded the beginning of the bauxite industry. The so-called Bayer-Hall-Heroult process has up until now been the technological foundation on which the total bauxite industry is based.

At present, the world bauxite industry is dominated mainly by multinational companies in a few developed countries—namely, the United States, Canada, and some European nations, which controlled the industry also during the colonial period. Today, the aluminum industry is dominated by Canada, China, the Russian Federation, and the United States, while the alumina industry is controlled by Australia, Brazil, China, Jamaica, and the United States (Suriname, 2012). Raw materials are produced largely by developing countries, whereas the value added occurs predominantly in Western countries. This dominance of a small number of multinational companies in the industry is a historical situation that began during the First World War. However, this industry expanded after the Second World War as a result of the work of private individuals and public companies. Some of the big private companies have kept their dominant position because their historical advantage has allowed them to seize the best opportunities that have defined the development of this industry in the countries where they operate. In the last two decades, China has emerged as a dominant player on the global aluminum market. The country is expected to significantly increase its share of global aluminum consumption over the next 5 years. Analysis of the supply side indicates that the world market is shifting toward the Middle East because cheap energy is available in the re-

gion, while aluminum producers in Western Europe and North America constantly or permanently reduce their production capacities to deal with profit losses (visiongain, 2012).

The industry is considered an international oligopoly with the potential for cartel-like behavior being adopted by both the firms and certain bauxite-producing countries. Its oligopolistic structure is a result of the previously mentioned high degree of production concentration, which is reflected in the variety of processing companies that operate as subsidiaries of large multinationals. Product differentiation, large-scale production, interdependence, and increased use of advanced technology are also major factors. Even though the multinationals in the bauxite industry are not considered to be world giant companies compared with multinational companies in other industries, their influence within the limits of this industry and on the national economies of most bauxite-producing countries is still enormous.

To gain greater advantage from the bauxite industry, the producing countries established the International Bauxite Association in 1974¹ (Kalpoe, 1983). Initially, this association consisted of the member countries: Australia, Guinea, Guyana, Jamaica, Sierra Leone, Suriname, and Yugoslavia. During the year of establishment, these countries together accounted for more than 80 percent of the world bauxite production and owned more than 90 percent of global bauxite reserves (Kalpoe, 1983). The Dominican Republic, Ghana, Haiti, and Indonesia subsequently became members of the International Bauxite Association. They tried to reach the goal of the Association by introducing a common price policy for bauxite. For various reasons, the Association has not fully achieved its objectives and has not constituted a major counterweight against the bauxite multinationals. One of the reasons is the lack of common pricing policy, which according to the theory of cartels, is the tool that reflects the power of cartels. Another reason is that Australia, the largest bauxite producer in the world, did not fully cooperate with the pricing policy even though it is a member of the International Bauxite Association. Nevertheless, the Association still exists and pursues its objectives.

The Bauxite Mining Sector in Suriname

Suriname has a rich supply of natural resources, including large mineral and timber reserves and considerable opportunities for agriculture, industry, and fishing. The economy is dominated by the mining industry with exports of alumina, gold, and oil, accounting for about 91 percent of total exports of goods as of 2011. This industry is also a major contributor to public finances. In 2009, the total tax and nontax revenues

¹ The International Bauxite Association is the industry's counterpart that can be compared with the oil industry's Organization of the Petroleum Exporting Countries.

from these mainly extractive sectors² accounted for 36.3 percent of government revenues, making the economy highly vulnerable to mineral price volatility (Artist, 2009). During earlier decades, bauxite had the largest contribution to government revenues; nowadays, the oil sector occupies that position. Other export products include bananas, shrimp, fish, rice, and lumber.

The emergence of the bauxite sector in Suriname was not the result of a deliberate national strategy. This sector owed its development to the high demand for bauxite during the First World War. In the forefront of this development was the Alcoa. In mid-1915, Alcoa sent a number of experts to Suriname to investigate the bauxite deposits, which by then were used only for paving roads. When their presence and interest for bauxite became known, it caused a bauxite stir in Suriname. Many people applied for domain land for speculative purposes. In 1916, Alcoa established the Suriname Bauxite Company N.V., which started with a share capital of 1 million Surinamese guilders. In a very short time, this company gained control over bauxite deposits on both domain land and various private areas. In Suriname, the company focused on two centers of mining: one at Moengo in the northeastern part of the country and the other around the Comewijne River in northern Suriname.

In the United States, the demand for aluminum was driven partly by World War I, even as the shortage of bauxite increased. The shortage was caused mainly by the stagnant imports from Europe (Suralco, 1996). Therefore, Suriname Bauxite Company accelerated the research of bauxite samples in the United States, but the absence of legislation made the export of bauxite impossible. In 1918, Suriname Bauxite Company presented the first bauxite regulation, but the Dutch government delayed its approval. According to the government, the duties were too low and they had no experience with such companies. After many discussions between the company and the Dutch government, the first bauxite regulation was approved in November 1919 and implemented in 1920 (Suralco, 1996). The regulation has brought great developments for the sector.

After the adoption of a second bauxite regulation in 1924, the commencement of the Brokopondo project in 1958 was another important development. After the Second World War, the dominant idea in Suriname was to process bauxite further into alumina and aluminum. However, this process required a great deal of energy to make the process feasible. After a prolonged period of negotiations, the Brokopondo agreement was signed in 1958, which resulted in the construction of the Brokopondo³ complex. Before this agreement was signed, Suriname Bauxite Company was renamed to Suralco (Suriname Aluminum Company) in order to be considered a Western Hemisphere Trade Corporation (Kalpoe, 1983). A new aluminum smelter was constructed and powered by

2 The main extractive industries are bauxite, gold, and oil.

3 The complex consisted of the hydroelectric dam with a capacity of maximum 189 megawatt, the alumina plant with a capacity of 1.4 million tons per year, and the aluminum smelter with a capacity of 63,000 tons per year.

energy from an installed hydroelectric powerplant built as part of a dam in the Suriname River. As of 1965, Suriname was able to also process a substantial portion of bauxite domestically. This process ensured that Suriname had in place an integrated aluminum industry. The production and export of bauxite during the years 1957–1964 remained almost stable, around 3.5 million metric tons, but increased to 4.4 million metric tons in 1965, the year processing of bauxite started. Unfortunately, the smelter was closed in 1999 because of cost-efficiency reasons and because it was very environmentally unfriendly. The production of aluminum ended that year.

Suriname was once the largest producer and exporter of bauxite in the world. During World War II, it provided the United States with 80 percent of the raw material for aluminum processing. Suriname's world share had risen to more than one quarter of world production after the Second World War, but it declined thereafter. Suriname lost its leading position to Jamaica in 1950, to Australia in 1969, and to Brazil in 1980 (Soekhnandan, 1997). However, this sector has experienced declines since 2010 because of the disappointing world prices and high production costs, such as personnel costs and higher prices of inputs⁴. Provision of new concession rights for new mines and favorable world prices will possibly contribute to the success of the sector in Suriname. At present, the share of Suriname in world bauxite production is relatively small, accounting for less than 3 percent of the world's production.

New Market Entrants

The high demand for bauxite during the World Wars brought Suriname to the attention of other companies. After several attempts by various companies to establish a company in Suriname, the Dutch mining company, Billiton, succeeded in 1938 in obtaining a permit to explore and mine bauxite. This was a period of recovery in the world aluminum market. Suralco and Billiton have since then been the only established companies in the sector.

Billiton started exploring bauxite in 1940 and began mining the following year. The first shipment took place in 1942 to the United States. Exports increased in 1943 to 83,000 tons and in 1944 to 200,000 tons. As a result of plummeting aluminum prices, exports declined to less than 100,000 tons in 1946. From 1947 on, bauxite production and exports of Billiton increased again to reach a total of 1.8 million tons in 1966. In the years thereafter, major changes occurred, such as introducing nationals in the management team, constructing new mines after old ones were exhausted, and cooperating jointly with Suralco (Scholtz & Witcomb, 2006).

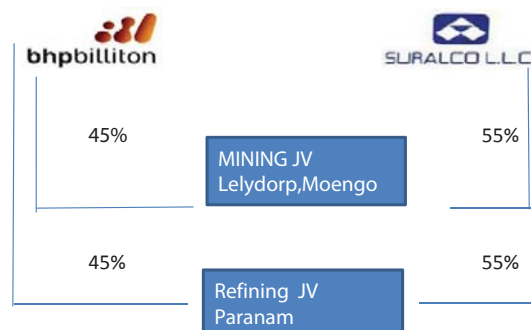
4 Caustic soda and fuel oil.

In 1963, Billiton concluded a toll agreement with Suralco to process bauxite into alumina, leading to the construction of the alumina refinery at Paranam. On March 14, 1984, Suralco and Billiton signed two joint venture agreements, one for mining and one for refining. In the mining joint venture, the share of Suralco was 76 percent, while Billiton had 24 percent (Artist, 2009). In the refining joint venture, Suralco and Billiton participated for 55 percent and 45 percent, respectively (Artist, 2009). From that day on, all bauxite ore was processed to alumina, which meant that the export of metallurgical and special bauxite was discontinued.

In 2001, Billiton merged with Broken Hill Proprietary Limited (BHP) to form the world's largest resources company, named BHP Billiton, and in 2003, the joint venture between Suralco and BHP Billiton was renewed. The government of Suriname signed two agreements with the newly formed joint venture for the exploration and exploitation rights of bauxite. The first was to allow Suralco to increase the alumina refinery capacity; the second was to permit new bauxite mining and refining operations for the company held jointly by Suralco (55 percent) and BHP Billiton (45 percent). In 2005, the production capacity of the refinery had increased to 2.2 million tons alumina per year.

Ownership Structure: Alumina Industry in Suriname From August 2003

Figure 2.1 Outline of the New Joint Venture Structure



Source: N.V. BHP Billiton.

The future of Suriname's bauxite industry reached a critical point by the end of 2008, when BHP Billiton officially announced its intention to withdraw its operations in Suriname by the end of 2010. BHP Billiton decided to leave because the company could not reach an agreement with the State on obtaining concession rights for new quarries (Central Bank of Suriname, 2009). BHP Billiton decided to leave also because the international price for aluminum and alumina declined sharply from US \$328.7 to US \$210.2 per metric ton. As of August 2009, the bauxite industry in the country is again 100 percent owned by Alcoa. BHP Billiton sold its interests in Suriname on August 1, 2009, to Alcoa, which is now registered as Alcoa Minerals of Suriname Ltd (N.V. AMS). The macroeconomic impact of the departure of BHP Billiton is discussed in section 4.

Institutional Framework

The regulatory and legal framework of any economic activity is supposed to guide a State to the highest degree of effectiveness. Appropriate regulation and legislation are supposed to ensure that the State earns a fair share of income retained by the economic activity and that the rights of local communities are protected. Furthermore, they are supposed to ensure environmental protection. In principle, regulations and legislation exist to manage risks through the use of standards or particular requirements. This section focuses on the institutional framework of the bauxite sector. A brief description is given of the different legislations that govern the operations in the bauxite sector, emphasizing those that have introduced structural changes to the economy.

History of Mining and Bauxite Legislation

The Mineral Ordinance in Suriname was legislated in 1882 (GB1882 #19). It was a copy of the French legislation on oil. The colonial government deemed it necessary to develop a mining policy and to institutionalize mining activities because of the exploitation of gold in Suriname. This Ordinance differentiated between exploration and exploitation on private-owned property and government-owned property. In case of intended activities, land owners were required only to provide a written notification to the authorities; however, before research or mining activities commenced, a permit from the official authorities was needed.

However, legislation specifically for the bauxite sector was not available until 1919. When the first bauxite law was approved, it was promulgated in 1920 and covered only exploration and exploitation of bauxite on government property. The Bauxite Act of 1919, which enabled the company to undertake its first export in 1922, was beneficial to the government and contained the following important provisions (Kalpoe, 1983):

- The levy for the first year would be Sf 0.10 cents per hectare, Sf 0.20 cents in the second year, Sf 0.50 cents in the third year, Sf 0.75 cents for the fourth year, and Sf1 for each subsequent year;
- The minimum production was set at 10 tons per hectare starting the fifth year.
- The maximum duration of the concession was for 50 years;
- The export of bauxite exploited on government domain land would be charged an additional fee of Sf 0.25 per ton.

The second bauxite law was adopted in 1924 followed by additional regulations which were spurred by the many amendments to the Mineral Ordinance, which, in turn, was prompted mostly by developments in the gold industry of Suriname. The government's experience with regulating the gold sector was utilized to institutionalize the bauxite sector. The many amendments of the Mineral Ordinance required a consolidation of the

legislation, which was completed in 1932, 1938, 1952, and 1954. To oversee the whole bauxite sector in Suriname, the Bauxite Institute of Suriname was established by Decree E-9 on February 17, 1981. The goals of this institute were to achieve all rational and sustainable development of all bauxite deposits in the country and to obtain a fair share from the profits of the bauxite industry for the Surinamese government (Bauxite Institute of Suriname, 2011). The Bauxite Institute of Suriname can be considered the specialist institution of the sector on behalf of the government. It has contributed actively to the creation of various agreements between the State and the bauxite companies, including the following:

- The various levy agreements, which were aimed at extracting extra income from the sector for the government and increasing production and export of bauxite;
- The bauxite agreement of January 1993, with the bauxite companies, primarily focused on maintaining and enhancing efficiency, expansion of the alumina refinery and research to expand the bauxite reserves. (Bauxite Institute of Suriname, 2011)

In 1986, the Mineral Ordinance was replaced by the Mining Decree 1986 (decree E-58). This Decree presumes the United Nations Declaration on Permanent Sovereignty over Natural Resources. The main objective of this Act was to provide a legal framework for an orderly development of bauxite mining (Bauxite Institute of Suriname, 2011). It offered the government the opportunity to align the development of the mining sector within a mining policy that is in consonance with its national economic policy. This Act also provides legal guarantees for the domestic and foreign investors in this sector. Nevertheless, its implementation created a number of challenges stemming from the necessity to take into account the ecological, cultural, health, and other aspects of the indigenous people as well as the incorporation of illegal small-scale mining activities. This law should be regarded as the main Bauxite Act, followed, at a later stage by specific regulatory products. The different acts established for the bauxite sector include the Brokopondo Agreement of 1958, the Levy Act of 1974, the Protocol of 1984, the Bauxite Agreement of 1993, the Memorandum of Understanding of 2003, and the Protocol of 2003.

The Brokopondo Agreement of 1958, the Levy Act of 1974, and the Bauxite Agreement of 1993 have had profound effect on the economy; against this background, they are discussed at length in the following section.

The Development of the Brokopondo Agreement

Background

In Suriname, the idea to process bauxite locally into alumina and aluminum provided many challenges. The major challenge was that the refining process required an enormous amount of energy. At the time, the availability of oil was not known, so the

most plausible solution was the generation of Hydro-Energy by utilizing Suriname's wetland richness. In 1950, the Dutch engineering firm, W.J. van Blommenstein, proposed to build a dam on the Suriname River. As a Dutch company, Billiton Ltd, was the first eligible company for this option. For various reasons, such as the high construction costs, the Dutch authorities refused the request (Suralco, 1996). The Surinamese authorities were interested and sought financial support from the World Bank. One year later, a team of experts from the World Bank was given the responsibility to determine whether such a dam was economically feasible. This team determined that the dam was feasible and the World Bank was willing to give a loan to Suriname under the condition that The Netherlands provided a warranty backing. It was also proposed to build a smelter to use the bulk of the generated energy. However, the Dutch government refused the warranty claim, citing budgetary constraints (Suralco, 1996). Nevertheless, Alcoa appeared to be interested and as such led to the signing of the Letter of Intent in 1957 and then to the signing of the Brokopondo Agreement in 1958.

The Agreement

All major activities of Suralco are defined in the framework of the Brokopondo Agreement, which includes the following interesting points:

- Suriname would make all needed land and waters available for building the dam;
- Suriname would move population, buildings, and other assets from the area that would be submerged;
- Alcoa would account for all the necessary costs for the construction of the dam and other associated buildings;
- A 20-year concession for exploration in a 500,000-hectare large region and the rights to exploit 20,000 hectares for 75 years;
- Construction of an alumina refining facility and an aluminum smelter at Paranam by Suralco;
- Fiscal incentives involving duty-free import of all materials necessary for the construction and maintenance of the dam, the alumina plant and aluminum smelter for a period of 75 years;
- No duties would be imposed on exports of bauxite, alumina, and aluminum for 75 years;
- The agreement will end in 2033 when the bauxite deposits are expected to be exhausted. Ownership of the hydroelectric plant will subsequently be transferred to the Surinamese government.

The Impact of the Agreement

According to the Brokopondo Agreement, the investments led to structural changes in the Surinamese bauxite sector. Suralco invested more than US\$ 150 million to build the Afobaka hydropower plant. The plant came into operation in 1965, but it never reached its installed capacity of 189 megawatts (Kalpoe, 1983). Nevertheless, Suriname became the first developing country with a fully integrated aluminum industry. During the period 1964–1967, the expenditures in the bauxite sector led to an average growth rate of real per capita income to accelerate to an average of 10 percent per year (Kalpoe, 1983). Unfortunately, this growth rate lasted for only 4 years because after 1967, the growth rate declined to less than 2 percent per year. Construction also contributed to an increase in employment. About 2,500 workers were employed in the construction phase, but employment dropped in 1965 when the program entered the production phase. The processing of bauxite into alumina and aluminum is very capital-intensive and consequently did not lead to a strong employment growth in this sector. By placing the area under water, a large number of people had to move, which led to the urbanization of Maroons. This increased migration to the city provided additional problems for the government, because the urban region offered insufficient opportunities in terms of adequate housing and employment. In addition to the aforementioned effects, this Agreement increased dependence of the national economy on the activities of a multinational company, promoted and strengthened monoculture in Suriname as a result of the absence of any major linkages to the rest of the sectors, and worsened income distribution.

Originally, Suralco used most of the electricity for its own aluminum production activities and also sold a part of the generated energy to the State. However, the smelter was considered inefficient by international standards; its costs were higher than those of other smelters in the industry. In 1999, aluminum production ceased, and all generated power is now sold to the State. The alumina refinery operates efficiently, and, by 2005, its total capacity was increased to approximately 2.2 million metric tons per year.

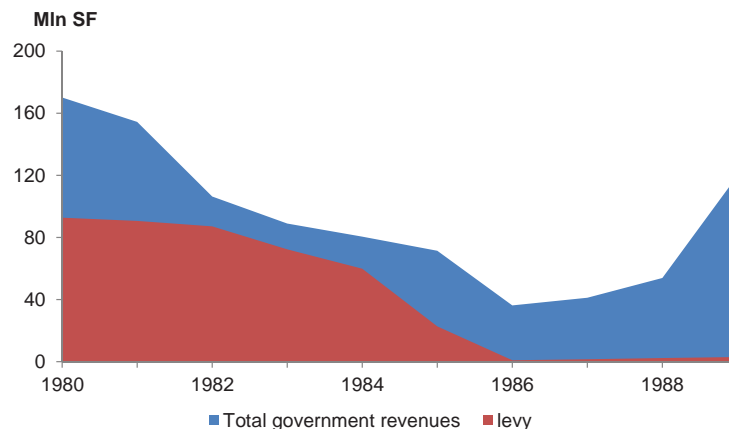
The Levy Act of 1974

In 1973, oil prices were increased by the Organization of the Petroleum Exporting Countries (OPEC); this increase had a negative effect on oil-importing countries. A direct consequence of this action of the OPEC countries was the increase in the membership of the International Bauxite Association, whose main objective was to use the association to draw maximum benefit from the exploitation of bauxite. One of the methods used to derive maximum profit was through the imposition of a levy on the multinationals, ostensibly to be used for productive investment to diversify the economy. This additional revenue was intended to broaden the national economy in the respective member countries and could provide some relief for the adverse effects of the oil crisis. Jamaica was

the first country to introduce the bauxite levy in 1974, followed by Suriname in that same year. This tax was determined annually. However, this levy received much international criticism. The bauxite companies felt that the levy would affect the competitiveness of the countries as well as the competitive position of aluminum in relation to other metals. This could have unpleasant consequences for the bauxite industry. Nevertheless, the figures on the profitability of the four largest bauxite multinationals showed that profit margins were not affected by the levy (Kalpoe, 1983).

Introducing the levy increased Suriname's fiscal revenues. The country succeeded in getting a greater proportion of the export earnings from this sector. In the period 1974–1985, about US\$491.2 million in bauxite levy was paid to the government. This amount was approximately US\$177 million more than the remaining revenues obtained from the bauxite sector in that period. The collection of the levy was suspended in 1989 as a result of deteriorating competitiveness. Suriname had to compete against Australia, the largest bauxite producer, which had not introduced the bauxite levy. Unfortunately, the objective of the levy was not realized, because the extra income was used for consumption purposes by the State instead of investment in the country (Soekhnandan, 1997). The bauxite levy should have created great opportunities for Suriname's economy, but it was ultimately used to increase the civil service and increase apparent prosperity (Kalpoe, 1983).

Figure 2.2 Levy Contribution to the Total Government Revenues (in millions sf)



Sources: Ministry of Finance and Bauxite Institute of Suriname.

The Bauxite Agreement of 1993

During the 1980s, an austerity policy was implemented by the government aimed at limiting imports and payments to other countries in order to counter further deterioration of the foreign exchange reserves. This was the beginning of the development of a

parallel market in foreign currency. Excess demand in the economy originating from the parallel market exerted an upward pressure on the exchange rate, resulting in price explosion (Soekhnandan, 1997). During this period, surrender requirements were in place for export and import enterprises in Suriname. These requirements implied that the purchase and sale of dollars were required to be made through the central bank at the official exchange rate of US\$1 = Sf 1.80. Consequently, this measure affected the liquidity of the bauxite companies because their daily local transactions were done at the high parallel market exchange rate of approximately US\$1 = Sf 6.64.

Since 1983, the issue of exchange rate adjustment for the bauxite companies was the source of continuous debate for these companies. In 1992, the government introduced a multiple exchange system allowing certain sectors to transact business at an exchange rate higher than the official rate of Sf 1.80. However, the bauxite companies were not eligible for this because of the government's concern that introducing a higher exchange rate in that sector would signal a virtual devaluation of the currency of Suriname, given this sector's significant effect on the economy. The overvalued exchange rate had caused the bauxite companies significant losses. To ensure business continuity and to commit the necessary investments for the expansion of the sector, the Bauxite Agreement of 1993 was signed. From that date, an effective exchange rate of US\$1 = Sf 8 was made applicable to the bauxite sector.

The devaluation of the local currency enabled the bauxite companies to transfer less foreign currency to Suriname for payments. Also, the profit prospects of the companies increased, because of the reduction of the share of labor costs in total costs. Profits continued to increase, after the unification of the exchange rate in 1994. These gains enabled the companies to invest out of their own resources; this had a positive effect on employment, directly or indirectly, and ensured the continuity of the sector.

Table 2.1 Average Production

	Before Bauxite Agreement, 1980–1993 (million metric tons)	After Bauxite Agreement, 1994–2007 (million metric tons)	Increase (%)
Bauxite	3.5	5.3	55
Alumina	1.5	2.2	45

Source: Authors' calculations, based on data from the Bauxite Institute of Suriname.

Table 2.2 Contribution to Government Revenues

	1980–1993	1994–2007
Bauxite sector (million SRD)	45.21	45.38
Total economy (million SRD)	432.55	329.81
Contribution (%)	10	14

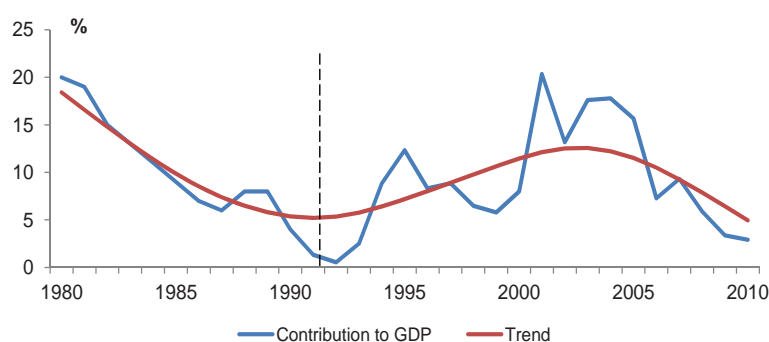
Source: Authors' calculations, based on data from the Bauxite Institute of Suriname.

Macro-economic Impact on the Economy

As previously indicated, the bauxite sector had a major effect on Suriname's economy. The macroeconomic contribution of this sector is analyzed in relation to its effect on employment (permanent and temporary), GDP, state revenues, and balance of payments. The analysis focuses on the period 1980–2012 because of lack of data before this period.

Effect on Gross Domestic Product

During the period after World War II (1957–1974), the bauxite sector played a dominant role in the country's economy, accounting for about one third of the country's GDP. The production and export of bauxite increased from around 3.5 million metric tons in 1957 to 4.4 million in 1965, the year when bauxite processing began. In the period 1957–1969, the average share of this sector in GDP was 30 percent (Centrale Bank van Suriname, 1981). With the addition of alumina and aluminum as export products, the relative importance of this sector increased significantly for the economy. During the period 1970–1974, the contribution of this sector to GDP rose to 32 percent. Bauxite production was expanded from 4.4 million metric tons in 1965 to 7.0 million in 1974. After 1974, the share of bauxite mining and processing in GDP declined, but there was resurgence during 1992 to 2003.

Figure 2.3 Contribution to GDP

Sources: Based on data from the Central Bank of Suriname and the General Bureau of Statistics.

Figure 2.3 displays the trend-cycle decomposition⁵ of the bauxite industry's contribution to GDP from 1980. On the basis of the trend development, three periods can be distinguished with regard to the share-in-GDP ratio. The first period, 1980–1992, experienced a downward trend; the second, 1993–2003, shows a rising trend; and the third, 2004–2011, displays a downward trend. In the first period, the sector suffered from the depressed demand on the international aluminum market caused by the world economic crisis in the early 1980s. The possible sources underlying this downturn were the international oil price increases in 1973 and 1979, which led to the increase of energy costs and consequently affected the production of the sector negatively. Also, the world crisis in 1981 resulted in large unsold quantities of aluminum on the world market, fueled by excess supply of aluminum by companies in Eastern Europe and low economic growth in most industrialized countries. As a consequence, demand for aluminum declined and the world market prices of aluminum collapsed, compelling the domestic bauxite companies to reduce production. In addition, domestic unrest severely disrupted production in 1987. The negative effects of these developments are reflected in declining production volumes and percentage shares in GDP. The revival of the ratio during 1988–1989 was primarily caused by the improvement of international market conditions. By the early 1990s, the deterioration of external market conditions and the overvalued exchange rate negatively influenced corporate investment decisions. As a consequence, production volumes and the value added of the sector declined.

The rising trend in the second period commenced in 1993 when, within the framework of the Bauxite Agreement of 1993, the government agreed upon a separate and higher exchange rate in exchange for higher investments by the bauxite companies. The higher US-dollar exchange rate in 1993 and the unification of all multiple exchange rates in 1994 contributed to the recovery of the companies' profitability, which provided new impetus for investments. Consequently, the share in GDP rose during 1993–1995. However, the industry experienced lower international aluminum prices during 1996–1998 caused by, on the one hand, excess supply of aluminum on the international markets and, on the other, the reduced global demand for aluminum induced by the 1997 Asian financial crisis.

The boom-bust cycles of the sector's share in GDP observed in the third period largely reflected the effect of developments in the international aluminum markets on the investment decisions of the domestic bauxite companies. In particular, the world economic crisis in 2008 severely affected the bauxite sector. The alumina refinery operated at 60 percent of its total capacity because production was reduced by 40 percent to cope with, on the one hand, the demand effects of the economic crisis and, on the other, the short lifespan of the active bauxite mines until new ones were ready for production (Bauxite Institute of Suriname, 2011). Negotiations with the Surinamese government on these new mines have not yet concluded. The short lifespan of the mines and the lower quality of the

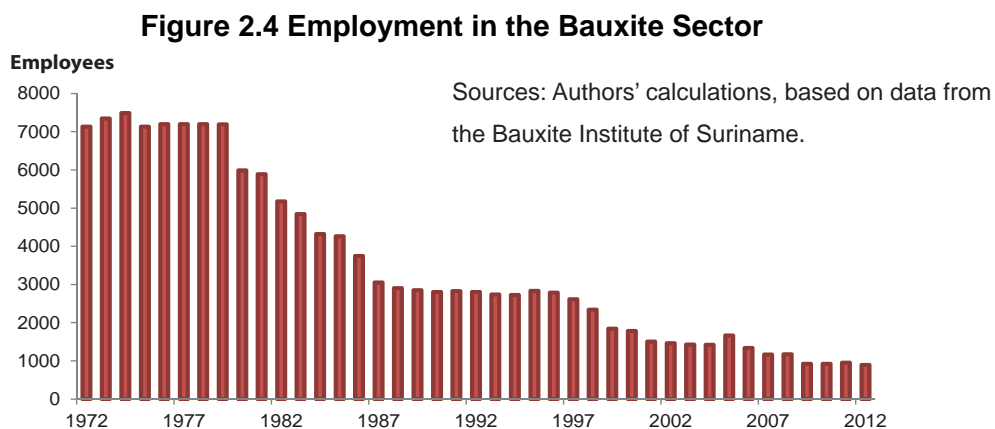
5 The Hodrick-Prescott Filter was used to derive the trend-cycle decomposition with $LAMBDA = 100$.

bauxite deposits required bauxite to be imported from Brazil. In 2010, nearly half a million tons of bauxite were imported from Brazil and processed to more than 200,000 tons of alumina (Bauxite Institute of Suriname, 2011). Despite these imports, the alumina refinery still operated about 20 percent below its maximum production capacity. The underuse of the refinery continued in 2011 and into the first half of 2012. The reasons of the underuse are the lower quality of bauxite ore in the existing mines, the weak developments in the world aluminum market, and the discontinuation of bauxite imports from Brazil because of the high domestic processing costs. The near-term expectations of the international market conditions are precarious. The parent company, Alcoa, announced its intention to reduce the alumina refinery output in the Atlantic region by an annual average of 4 percent (Bauxite Institute of Suriname, 2012).

Analysis of the contribution of the sector to GDP indicated that out of the 32 years, the industry has witnessed 11 years of upward trend, which is largely attributable to developments in the international aluminum market. Yet, it has made major contribution to the development of Suriname's economy. In general, it may be acknowledged that despite the declining contribution, the industry remains an important sector of the economy.

Effect on Employment

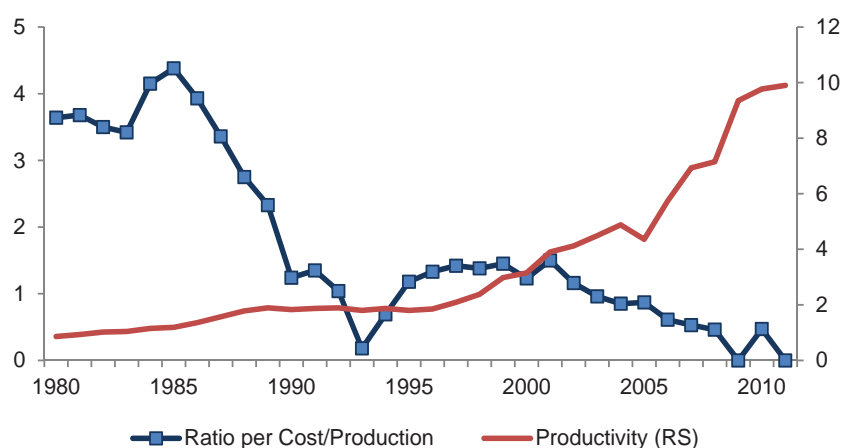
Driven by globalization developments, the aluminum industry is increasingly concerned with structural cost reductions and productivity improvements. Given that production technology is capital-intensive, it limits direct employment⁶ in this sector. As shown in Figure 2.4, employment in the bauxite industry has declined. In the 1980s, direct employment declined sharply and continued to decrease gradually. However, in the years before that period, the sector had employed many more direct employees in preparation for and implementation of large investments. Over a 40-year period (1972–2012), employment shrunk from 7,130 workers to only 896.



⁶ Total number of employees on the payroll of the organization.

Fierce international competition in a globalized world forced the industry to outsource certain production activities (Bauxite Institute of Suriname, 1990) and the departure of senior staff, which resulted from uncertain and unpredictable market developments in the country during the period 1993–1998, contributed to the further downturn of employment. Outsourcing, which further reduced employment, minimized the cost burden of the companies, allowing them to produce competitively. The ratio⁷ of real personnel costs in relation to production declined, as shown in Figur 2.5, suggesting that the outsourcing measures taken by the company increased the productivity⁸ of direct employees, thus enhancing competitiveness in the market place.

Figure 2.5 Productivity and Personnel Costs in Relation to Production (%)



Source: Authors' calculations.

The upward movement during 1993–2001 may be ascribed to the effect of the macroeconomic recovery and the unification of the exchange rate that enabled the company to enhance its profitability

Effect on Public Finances

Apart from its strategic importance to national output, the industry also has a significant effect on direct government revenues. The government receives its revenues from the bauxite companies mainly through taxes, such as income tax and royalties. In the past (1974–1985), the bauxite levy was the most important source of government revenues, but nowadays income tax has the largest share in total transfers from the bauxite companies. Because companies in the bauxite industry in Suriname are foreign-owned, tax revenues remain one of the major avenues through which they influence the rest of the economy.

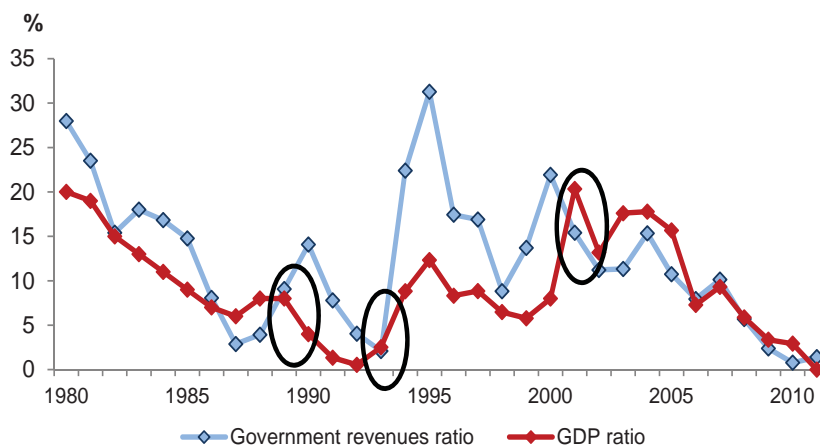
⁷ This ratio implies the share of labor costs in total output.

⁸ Productivity defined as value added divided by the numbers of direct employees.

The importance of the bauxite sector for the economy is analyzed in terms of transfers from the bauxite companies to the government as a percentage of total government revenues. Overall, these revenues had shown a declining trend until 1988. Thereafter, the series exhibited instances of peaks and troughs until 2001. From 2001 until 2012, a pattern of declining trend was exhibited as other sources of government revenues such as income taxes emerged.

The problems that the sector endured over the years also affected its contribution to government revenues. Over a 33-year period (1980–2012), the sector contributed an average of almost 10 percent of government revenue, with the least in 2012 (0.6 percent). The decline in global demand for aluminum increased production costs because of higher costs to process imported bauxite, and as such the cost of fuel oil was one of the main factors accounting for the decrease in 2012.

Figure 2.6 Government Revenues and GDP Ratios



Sources: Authors' calculations, based on data from the Bauxite Institute of Suriname and the Central Bank of Suriname.

A comparison of the share of the contributions of the bauxite sector to government revenues and GDP should portray more or less the same pattern because the bauxite sector is the largest contributor of both value added to GDP and government revenues. However, 1990, 1993, and 2001 experienced notable deviations in the development of both ratios. In 1990, government revenues expanded because of the extra dividend tax transferred to the government, which derived from the profits accrued in 1988 and 1989, while the decrease in the share in GDP resulted from decline in total production and export revenues for that year. The overvalued exchange rate was detrimental to the sector and consequently contributed to the sharp erosion of the state revenues in 1993, while reduced business performance resulted in a decline in 2001.

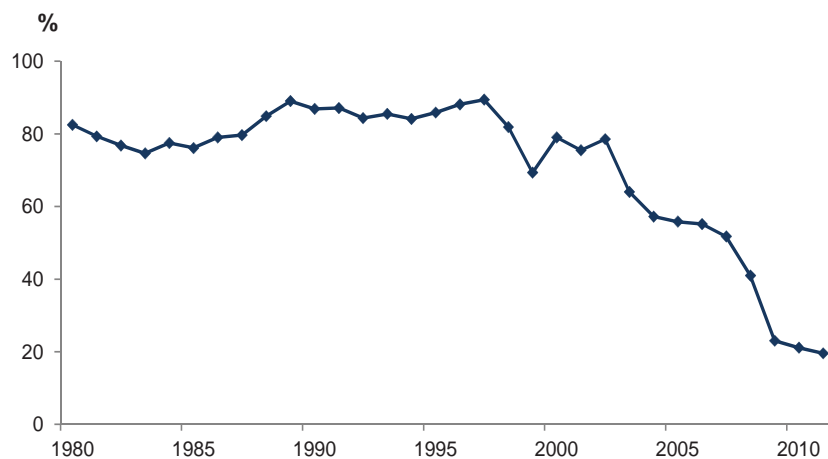
Effect on the External Sector

The unique role that the bauxite industry has played in the economy may be further illustrated through its share in total exports and in the financing of imports of the remaining sectors in the economy, as well as in its contribution to international reserves.

Share in Total Exports and Import Financing

Over a 33-year period (1980–2012), the annual average share of exports of the bauxite industry in total exports amounted 69 percent. The share in total exports was even higher at about 83 percent on average during 1980–1997, but it declined thereafter, ending at only 14 percent in 2012.

Figure 2.7 Contribution to Total Exports



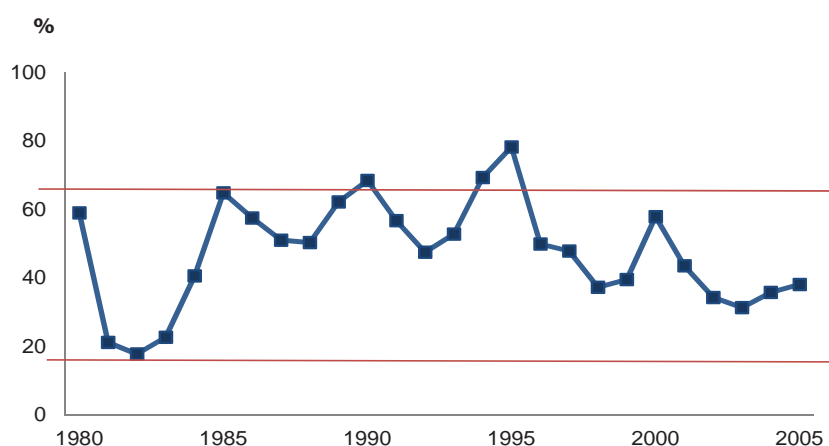
Source: Authors' calculations, based on data from the Bauxite Institute of Suriname and the Central Bank of Suriname.

More detailed analysis shows a slight upward trend of the contribution during 1980–1987, despite decreases in total exports of the country and exports from the bauxite sector.

After 1987, bauxite export values decreased gradually, along with its contribution to total exports, which reached only 13.5 percent in 2012. The contribution of the bauxite sector to the economy may be further emphasized by examining the extent to which government revenues from the bauxite sector helped to finance imports for the other sectors, excluding imports for the bauxite sector. The pattern for this import coverage ratio for the period 1980–2005 is presented in Figure 2.8. Overall, this ratio fluctuated between 30 and 70 percent during the period under consideration, indicating that it is possible that the government was able to finance 30–70 percent of the imports of the rest of the economy with the revenues from the bauxite sector.

The decline in the early 1980s was largely the result of the prevailing global recession, which affected export earnings through lower aluminum prices and export volumes of bauxite and alumina (Bauxite Institute of Suriname, 1983). During 1983–1985, the coverage ratio improved despite the decline of foreign reserves attributable to the bauxite sector. This was because the decline of the bauxite proceeds was proportionally less than the decrease in imports to the rest of the economy, which was affected by the suspension of the Dutch Development Aid in 1982. The government was compelled to take austerity measures in 1983 to control imports for the rest of the economy in order to slow down the depletion of foreign exchange reserves.

Figure 2.8 Contribution to the Financing of Imports of the Rest of the Economy



Source: Authors' calculations, based on data from the Bauxite Institute of Suriname.

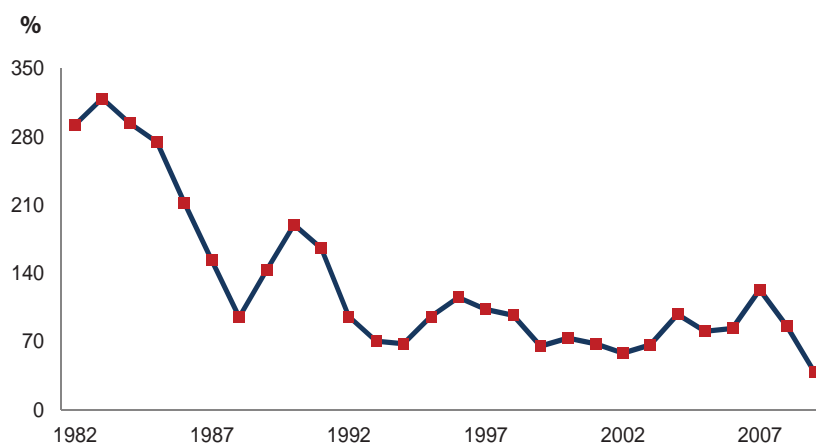
The coverage ratio generally improved from 1989—when it could cover 62 percent of national imports—and reached its highest coverage ratio of 78 percent in 1995, helped by improved profitability of the industry as international prices for alumina and aluminum increased. Over the period 1996–2005, there was a general decline in the coverage ratio to reflect the declining importance of the sector to Suriname's economy. In 2005, transfers from the bauxite sector covered only 38 percent of the imports from the nonmining sectors.

Contribution to the International Reserves

The contribution of the bauxite sector to changes in international reserves of the Central Bank of Suriname has declined throughout the period of analysis (see Figure 9). In the early 1980s, this contribution was the highest, amounting to US\$319 million, and the lowest of US\$38.7 million was registered in 2009. In recent years, the bauxite sector

dealt with, among other issues, declining international prices and lower quality of bauxite ore in the existing mines. Under these circumstances, the bauxite industry lost its dominant position in its share in total exports to the gold and oil sectors in 2008. The industry is currently facing new challenges and making investment decisions for the development of new mines in Suriname. With the development of these mines, the industry may continue to exist for at least another decade.

Figure 2.9 Contribution to Changes in the International Reserves



Source: Authors' calculations based on data from the Central Bank of Suriname.

Conclusions and Policy Recommendations

Conclusions

This paper aimed to describe key historical developments and institutional measures in the bauxite sector and to analyze its effect on the national economy. Analysis of the 1980–2012 data suggests that the bauxite industry was affected by external and internal factors. Internal factors included domestic unrest and overvalued exchange rate in relation to the US dollar, while the external factors were related to the negative demand and price effects of low economic growth in the industrialized countries and excess supply of aluminum on the world markets. The sector was an integrated aluminum industry of world class. However, in the second half of the 1970s, the industry lost its dominance in the international market. The industry has lost its dominance also in the domestic market since 2010 in the mining sector. The contribution to government revenues and the contribution to GDP and exports have dropped during the past 7 years. Despite the resurgence of the gold and oil sectors, the bauxite sector remains an important sector of Suriname's economy.

Analysis of the macroeconomic data (GDP, government revenues, and foreign exchange earnings) has revealed that the sector has made an appreciable contribution to the development of Suriname's economy, despite facing formidable challenges throughout the period of analysis. Its importance could have been even larger if some of the relatively large resources generated from the industry had been invested in identified activities to expand its potential linkages with the rest of the economy. Instead, transfers from the sector have generally been used for consumption-related activities, and the industry has largely remained a capital-intensive enclave sector with little effect on employment in the economy.

Policy Recommendations

Policymakers should shift their focus from using resources for consumption to using them for investment activities. Investment in human resource development may need greater emphasis so as to achieve a wider integration with the economy. A portion of the generated revenues should be reallocated to stimulate other potential sectors such as construction and tourism. In the present depressed market, it may be necessary to diversify activities in the bauxite industry to local value-added products in areas such as cookware and roofing sheets so as to widen the effect of the once-successful Pimba Doti Company.

Chapter

3

The Story of Gold: The Case of Suriname

Introduction

Gold has many applications; it is used in medicine, industry, and jewelry, and as a means of payment. This paper discusses the economic importance of this precious metal as a commodity. The gold industry in Suriname started as early as in the first half of the eighteenth century and underwent several periods of decay and revival. Since 1992, there has emerged a renewed interest in gold mining; this interest is determined mainly by the international gold price. One of the main factors that influence the international gold price is the condition of the American economy. The reason for this can be traced back to the Bretton Woods system where the US dollar was linked to gold. A deteriorating economic situation of the American economy, resulting in a depreciation of the US dollar, generally leads to an increase in the value of gold. International investors seek a safe haven in gold, making gold price rise. Until August 2001, gold price was stable for a long time. However, after the terrorist attacks of September 11, 2001, gold price started to increase. The price of gold grew slowly at first; amid the global financial crisis of 2008, it rose steadily and increased appreciably by 2012. Thus in only a decade, gold price increased more than five-fold from about US\$270 per troy ounce in 2001 to about US\$1,670 per troy ounce in 2012. The highest price for 2012 was US\$1,791 per troy ounce.

Suriname, a resource-rich country, greatly benefits from this rising trend of the international gold price. Before 2004, only small-scale gold mining existed in Suriname.

The small-scale gold mining sector is characterized by informality, which arose after the 1986–1992 civil war. The main reason for this informality is the outdated legislation that provides the sector with no identifiable governance structure to guide small-scale mining and the lack of government control in the interior. Because of the informal nature of small-scale gold mining, only a small group largely benefits from the revenues from this sector. In 1994, the Central Bank of Suriname initiated a purchasing program first to stimulate and regulate the gold sector and second to restore confidence in Suriname's currency by rebuilding international monetary reserves. In the initial phase, the Central Bank bought gold directly from gold miners, but in 2002 this task was transferred to gold buying companies, some of which also obtained a license to export gold in 2003. Other attempts to regulate the sector were also made by the government which took several measures over time. The latest measure occurred in 2011 when the government started a Gold Sector Planning Program in order to restore the authority of the central government in the interior and to legalize all illegal activities.

In 2003, Rosebel Gold Mine (RGM) started the construction of a gold mine that became operational in 2004. This was also the beginning of large-scale gold mining activity in Suriname. Later in 2004, the Suriname Gold Company N.V. (Surgold) obtained exploration rights for a period of 7 years. At the end of 2012, the government reached an agreement with RGM and Surgold for the expansion of the existing mine and the construction of a new mine. In 2013, these agreements were approved by Parliament.

Given the significant contribution of the gold sector to Suriname's economy since its revival in 1992, especially to the balance of payments and government finances, the need for better understanding of key developments in the sector cannot be gainsaid. This paper seeks to contribute to such efforts. The rest of the paper is organized as follows: The next section gives an historical overview of the main developments in the gold sector since the 1700s; the following section discusses the institutional framework in which the gold sector operates; and the last section analyzes the economic importance of the gold sector for Suriname from 1997 to 2011.

Historical Overview

After Christopher Columbus completed his voyage in 1492 to discover the Americas, he returned to Europe with gold and other precious artifacts he had collected. After his return, many Spaniards came to the Guyanas, which Suriname is part of, to look for gold. Since that time, many expeditions were held. This section gives an historical overview of the emergence of and developments in the gold sector in Suriname, discussing the rise and fall of the gold sector, the re-emergence of gold mining, and the introduction of foreign direct investment in the gold sector.

The Rise of the Gold Sector: 1718–1909

The first officially recorded exploration took place in 1718. After this first gold expedition, several attempts ensued by both private entrepreneurs and the government. After slavery was abolished in 1863, the Dutch colonial government encouraged the development of the gold industry by stimulating gold research and exploitation and by offering employment to former plantation slaves (Heemskerk, 2009) (Stichting Planbureau Suriname, 2003). The first gold exploration along the Marowijne River started in 1874 and a year later the very first gold purchase of 0.5 kg was carried out by De Surinaamse Bank (Heemskerk, 2010). In Bokopondo in the Rosebel area, gold was first discovered in 1879 when 600 small-scale miners were reported to have been working on the concession (Rosebel Gold Mine Suriname, 2008). A few years later, in 1885, gold was discovered by two Frenchmen in the Lawa region. The production in this area accounted for almost a third of total gold production. As a result, a dispute arose between France and Suriname over the situation in the Lawa region. This dispute is known as the *lawakwestie*. In 1891, the Tsar of Russia ruled in favor of Suriname. To facilitate further increase of production, mechanical extracting was introduced in 1896. Also, a railway that ran from Paramaribo to Dam (located at the Sara Creek) was built during 1905 and 1912 (Stichting Planbureau Suriname, 2003). This period was characterized by high levels of production. In 1908, they reached the highest level of about 1200 kg. However, the gold industry collapsed after 1908 because of a lack of management expertise, ineffective exploitation, widespread illegality, tensions between workers and concession holders, and the gold price freeze on the world market. In subsequent years, gold was again manually extracted, yet on a very small scale and typically for short periods of time (Heemskerk, 2010).

The Fall of the Gold Sector: 1910–1991

After 1910, gold production declined sharply; by 1976, production reached less than 2 kg per year. At the end of the 1970s, renewed interest arose in Suriname's gold deposits because of rapidly rising gold prices. In 1977, the government signed an agreement with a foreign company to jointly extract gold and other minerals and in 1978, the Geological Mining Service of Suriname introduced small suction dredges on the Lawa River. However, a lack of employees and money made it difficult to continue exploring and exploiting. All governmental geological activity in the interior was halted abruptly because of the war in the interior (1986–1992). The interior became inaccessible, and all river dredges were confiscated by armed Maroons who were organized as part of the Jungle Commando (Heemskerk, 2010).

The Re-emergence of Gold Mining and Foreign Direct Investment: 1992–Present

The first half of this period is characterized by the emergence of informal gold mining on a large scale, particularly after the war. With the increased participation by Maroons along with increasing international gold prices and the arrival of thousands of Brazilians, gold mining rapidly increased in the mid-1990s (de Vries Robbé, 2004).

In December 2009, unrest between the Maroons and Brazilian gold miners in the village of Papatam resulted in a broad discussion concerning the regulation of the gold sector. The new administration appointed the Gold Sector Planning commission with the main task to regulate the gold sector through what was dubbed the “Entry and Registration Campaign.” The next section discusses the details of the regulation efforts and the preliminary results.

In 1992, Golden Star Resources Ltd¹ (Golden Star) acquired the rights to explore in the Rosebel area. This agreement was replaced in 1994 by the Mineral Agreement between Golden Star, Grassalco, and the government of Suriname. Golden Star was granted the right of exploration for the Rosebel property for 5 years (Rosebel Gold Mine Suriname, 2008). The construction of the gold mine, however, started only in 2003. Gold price then rose above US\$300 per troy ounce, which was, according to the feasibility study, the price at which gold mining would be profitable (De Ware Tijd, 2003). In the following year, the Canadian gold mining company, Cambior², started commercial production of the Rosebel Gold Mine in Brokopondo. This was also the beginning of large-scale gold mining in Suriname. In December 2011, the government and IAMGOLD signed an agreement (Heads of Agreement) that outlined the preconditions for the expansion of the Rosebel Gold Mine (RGM), involving an investment of up to US\$800 million. At the end of 2012, a definitive agreement was reached. This allowed Suriname to acquire 30 percent participation in the new mine.

In another agreement, in 2004, the government granted the Suriname Gold Company N.V. (Surgold N.V.) the right to explore for 7 years the Nassau area in the eastern part of the country. Both parties eventually finalized the negotiations for a mineral agreement, which outlined the key economic and legal terms for the development and operation of the Merian Gold Project. Suriname will hold 25 percent of the value of the new mine of Surgold.

The agreement between Suriname’s government and RGM was approved by the Parliament in April 2013, thereby extending the terms of the existing agreement by 15 years to 2042. This new arrangement will enable RGM to target softer rock at a significantly reduced power rate. Two months later, the agreement with Surgold was also

1 In 1994, Golden Star entered into an agreement with Cambior, Inc., granting Cambior the option to earn an undivided 50 percent of Golden Star’s interest (www.iamgold.com).

2 In 2001, Cambior acquired Golden Star’s 50 percent interest in the Rosebel property; in 2006, IAMGOLD acquired Rosebel as part of its acquisition of Cambior, Inc. (www.iamgold.com).

approved by Parliament. With this agreement, Surgold acquired exploitation rights in the Merian area in eastern Suriname for the following 25 years.

Institutional Framework

This segment describes the structure of the gold sector, the role of the main actors, and the legal and regulatory framework that guide the sector's general operational activities.

Structure of the Gold Sector

The Mining Decree of May 1986 distinguishes between large- and small-scale mining and defines small-scale mining as “the reconnaissance, exploration, and exploitation of a mineral deposit whose nature, mode of occurrence, and quantity allows for economic mining by simple means and techniques.” A small-scale gold mining license therefore contains the rights to reconnaissance, exploration, and exploitation of gold for a maximum of 2 years, with the option to renew. For large-scale gold mining, the rights to these different mining stages have to be applied for separately. The maximum duration for these rights is, respectively, 2, 3, and 25 years, also with the option to renew. The aforementioned definition for small-scale mining no longer applies to small-scale gold mining because of the heavy machinery currently being used in the sector.

Actors in the gold sector can be divided into two broad categories. The first consists of participants who are directly or indirectly involved in small- and large-scale gold mining and the second includes official authorities responsible for facilitating and regulating gold mining operations. The small-scale gold sector includes both gold miners and mining service providers who work directly in the fields. Service providers include machine operators, All-terrain vehicle drivers, commercial sex workers, and cooks. In the beginning, gold miners were mainly Creoles who had left the plantations and were living in Paramaribo. The involvement of Maroons and Amerindians in the interior was limited to jobs such as carriers, guides, and performers of other support services. Since the 1990s, however, after the interior war, the majority of gold miners has been Maroons and Brazilians. Miners pay royalties of 1 percent at the buying houses together with a commission of 2–3 percent. As mentioned earlier, the small-scale gold sector has an informal character. There is very little government control in the interior. Many of the gold miners lack the necessary mining rights, and it is estimated that more than half of all gold miners are illegal Brazilians (*garimpeiros*). As a result, it is very difficult to collect data about the sector.

The involvement of concessionaires in the small-scale gold mining sector varies. Some concessionaires operate on their own concessions. They own the machines and

pay the miners, excavator operators, security personnel, cooks, and other workers. The concessionaires or their representatives conduct daily management. Other concessionaires are closely involved, but the machines are owned by independent entrepreneurs. These entrepreneurs pay 10 percent of their gold production to the concessionaires for the right to mine and a fixed monthly fee to hire larger equipment. Owners of other companies on the concession also pay a fee to the concessionaires. In return, the concessionaires provide good infrastructure, order, and security. In other cases, the concessionaires are hardly involved and only come occasionally to collect payments. Last, there are areas that are claimed by domestic residents as part of their ancestral territory. There might be a formal concession holder who is, in this case, not actively involved. Payments are collected by the head of the family or clan who claims rights based on traditional grounds (Heemskerk, 2009).

Another group in the small-scale gold chain is made up of the gold buyers and exporters. They are independent companies that buy gold from the gold miners. These companies are solely allowed to buy, sell, and export gold. There are eight gold buying companies of which five also have the license to export. In addition to these five companies, one obtained a unique license to export gold in exchange for the right to import fabricated golden jewelry. To obtain a gold-buying or export license, one had to present a business plan in which the monthly minimum amount of gold purchases or exports is stated. The currency commission monitors whether they reached their annual quota. If not, they may lose their license. Gold exporters pay royalties of 1 percent, consent duty of 0.1 percent, and income and profit tax.

IAMGOLD Rosebel Goldmines N.V. and Suriname Gold Company N.V. (Surgold) operate in the large-scale gold mining subsector. RGM is 95 percent³ owned by the Canadian company IAMGOLD and 5 percent by the government of Suriname and is located in the district of Brokopondo in the northeastern part of Suriname. The arrangements between RGM and the government are stipulated in a separate mineral agreement. Regarding royalty payments, this agreement distinguishes between ordinary royalties of 2.25 percent and extraordinary royalties of 6.5 percent. The ordinary royalties must be paid in pure gold over the total amount exported. The government receives 2 percent, and the other 0.25 percent goes into a fund. This fund is designated for the development of natural resources. The extra ordinary royalties are paid in cash when gold price rises above US\$425 per troy ounce. RGM also pays income tax of 36 percent of net profits and 25 percent tax on wages. Surgold is equally owned by Alcoa and gold multinational, Newmont. The company recently completed the exploration phase in the Nassau Mountains in the eastern part of Suriname.

Another participant in the first category is the Kaloti Suriname Mint House. The Mint House, which is now under construction, will melt and refine gold to produce gold bars according to international standards. After operations start, Suriname will export

3 Until the new mine is operational.

refined gold instead of unrefined gold. The mint house is a joint venture between the government of Suriname, the domestic private sector, and Kaloti Jewelry Group (headquartered in Dubai in the United Arab Emirates).

The second category of actors in the gold sector includes the government, the Currency Commission, and the Central Bank of Suriname. Several ministries and government departments also have responsibilities in the gold sector. The most important one is the Ministry of Natural Resources, which is responsible for managing all activities in the mining sector such as policy implementation, monitoring, surveillance, and the provision of mining rights. In the ministry, the Geology and Mining Department is responsible for issuing mining rights (Ministerie van Natuurlijke Hulpbronnen, 2007). Another government-related body is N.V. Grasshopper Aluminum Company⁴ (Grassalco), which operates under the Ministry of Natural Resources and has several mining rights for exploration and exploitation of minerals and iron. Grassalco has gold concessions at the Lely Mountains, Maripaston, and Goliath Mountains.

The Currency Commission is a legal entity, whose composition and operational procedures are determined by the president. The commission is responsible for the implementation of the Surinamese foreign exchange regulations and arrangements concerning currency transactions (Deviezen Commissie Suriname, 2012). For the gold sector, the commission is responsible for the issuance of licenses for the purchase, export, and import of gold. Buyers and exporters of gold are obliged to submit monthly reports about their purchases and exports. This reporting is necessary for the Currency Commission to determine whether they are meeting their annual quota. The Currency Commission also administers gold exports by RGM (Heemskerk, 2010).

The present role of the Bank is to sample, assay, and determine the purity and weight of the gold destined for exports. On the basis of purity and weight, the mandatory royalty payments are established. This only applies to gold from the small-scale gold sector. RGM performs all these measures in its own lab (Mac Lean, 2012). Furthermore, the Bank is designated to sell gold to jewelers, although jewelers rarely go to the Bank to buy their gold (Denswill, 2012).

Regulatory and Legal Framework

Before the Mining Decree, the gold industry was regulated through the so-called Mineral Act of September 1882. This act was drafted because of the growing interest in gold and formed the legal basis for this sector. It gave guidelines on how the exploration,

4 N.V. Grasshopper Aluminum Company (Grassalco) was founded on August 27, 1971, by the Minister of Construction Dr. Ir. Frank Essed, the Minister of Finance, Harry Radhakishun, and the acting president of the Central Bank of Suriname, with the objective to form joint ventures with foreign companies for the exploitation of bauxite in West Suriname. In 2012, the name of the company was changed to State Mineral and Mining Company.

exploitation, and transportation of raw gold should be carried out. In 1894, the Act on Gold Tax became effective. The amount of taxes that would be levied for crude gold and the way in which the amount owed to the State would be determined was elaborately described in this Act. A tax of 7 cent per gram had to be paid. Regulations concerning the sending of gold abroad by parcel were laid down in the Decree of May 1895. The Currency Regulation which stipulates the use of gold as Suriname's monetary reserve was introduced in 1947. Around the same period, additional regulations regarding the purchasing and the many applications of raw gold also came into force.

Nowadays, the Mining Decree is the main act governing the exploration and exploitation of minerals in Suriname. Under the Mining Decree, minerals are classified in the following five categories (Article. 5): bauxite; radioactive minerals; hydrocarbons; other minerals, excluding building materials; and building materials. Gold is classified under category d: "other minerals."

The most important laws and regulations relevant to the gold sector are as follows:

Stage	Legal Instrument
Reconnaissance:	Mining Decree
Exploration:	Mining Decree
Exploitation:	Mining Decree
Processing:	Mining Decree; The Currency Regulation; Resolution on rules regarding extraction, processing and the transport of gold; The Security Law; The Nuisance Act.
Trade:	The General Orders 1 and 5 of the Currency Commission; State Decree regarding the sending of gold parcels abroad; The Bank Act; The State Decree on Permits for Businesses and Occupations.
RGM operations	The Gross Rosebel Act

At present, Parliament is in the process of preparing two laws: an amendment of the Mining Decree and a new Gold Act. These two laws focus on the regulation of the small-scale gold mining sector. The main subjects are as follows: taxation of small-scale gold miners, adjustments in percentages of royalties, and gold mining on water.

Attempts to Cope With Informal Gold Mining

As previously stated, the small-scale gold sector is characterized by informality, which is confusing because the law underpinning the field of small-scale mining is outdated and the government generally lacks control in the interior.

Informal gold mining was an important financing source for the war in the interior. After the war, informal activities picked up and gold was smuggled to neighboring countries. To restore confidence in the Suriname currency by rebuilding gold reserves, the Bank restarted the purchase of unrefined gold in 1994. This gold was directly purchased from gold miners. Other objectives were to stimulate the development of the domestic gold industry, to regulate the gold market and to prevent smuggling (Central Bank of Suriname, 1993-1996). Back then, the Bank was the only official gold buyer. Gold purchases were intended for sale to jewelers and for export.

In the beginning only a small portion of the miners offered their gold for sale to the Bank. At that time, gold was directly sold to jewelers and other interested parties. The Bank offered a lucrative gold price, which gradually attracted many gold suppliers. However, the gold was mixed with other materials. As a result, the Bank sometimes paid too much for low-quality gold. In 1996, another system was introduced, in which gold-buying companies purchased gold on behalf of the Bank. They were obliged to sell all the gold to the Bank, where it was tested, weighed, and labeled in the gold laboratory. According to estimates, the amount of gold bought by the Bank accounted for only a quarter of total production. To stimulate the legal purchase of gold, the Bank lowered the provisions from 3 to 1 percent in 1997. In 2002, the gold market was partially liberated by granting export licenses to gold buying companies. The market was fully liberated in 2003 when they were no longer obliged to sell their gold to the Bank (Mac Lean, 2012).

In 2011, the government started a Gold Sector Planning Program to restore the authority of the central government in the interior and to legalize all illegal activities. The essential element of the program was that the information collected during a countrywide Entry and Registration Campaign could guide the authorities to formulate new policies and work on social facilities. This could lead to sustainable development of regions and communities working in and/or profiting from the small-scale gold mining sector.

The policy and management teams of the Gold Sector Planning Program are, on behalf of the government, responsible for the coordination and execution of the planning activities. Mining service centers are being established in the interior and will function as an extension of the government in order to provide government guidance and information to local citizens. Each mining service center will become a permanent establishment with a multidisciplinary team of employees, consisting of representatives of different ministries with different backgrounds and expertise. In the near future, mining service centers will also provide other services such as tax services, banks, buying houses. Two mining service centers are already operational in Snesi Kondre in the district of Marowijne and Anapaike in the Sipaliwini district near the border with French Guyana. Four more need to be set up in other strategic locations. Near the mining service center in Snesi Kondre, a school of mining has been established to train the gold miners in the use of modern and safe techniques to extract gold without the use of mercury (Dompig, 2012).

The activities of the Gold Sector Planning Program are carried out in three phases:

1. The Entry Phase (already implemented): All persons working in and/or profiting from the small-scale gold mining were called upon to come and register their name, work area (concession), and nationality at the nearest mining service center or head office in Paramaribo
2. The Registration Phase (in progress): During the registration phase, all personal information gathered during the previous phase will be further complemented with information concerning the applicants' work in the small-scale sector. This information forms the basis for the application for legal documents and permits. Everyone who successfully completes the registration phase will receive a Gold Sector Registration Card, which will entitle them to work legally in the gold mining industry and to gain access to governmental facilities to be created in the next phase. Successful completion means having all identification documents and permits.
3. The Facilities Phase (in progress): In this phase, the government will work on facilities for sustainable community development in order to improve working and living conditions for communities working in or profiting from the small-scale gold mining sector. Facilities will be based on the needs of each community (Ordering Goudsector, 2011). In this regard, 7,000 hectares was recently assigned to small-scale gold miners who worked illegally in the concession of RGM. With the help of the commission, the miners are prospecting for gold in that area. At a later point in time, an additional 15,000 hectare will be assigned to other illegal miners.

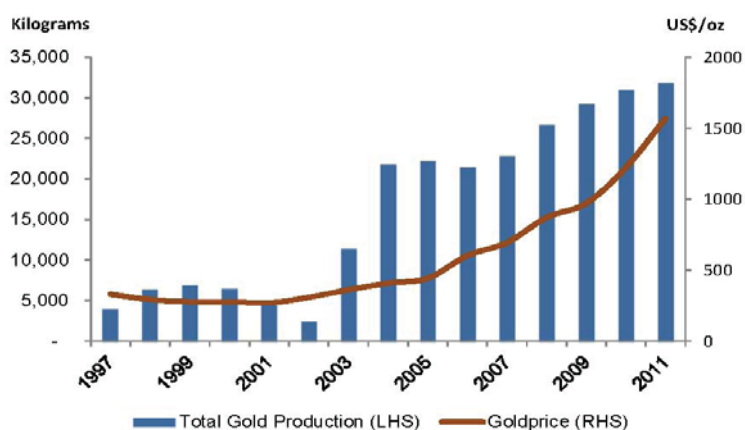
Impact of the Gold Sector on the Economy

Gold mining was always driven by developments in international gold price. In recent years, gold price reached its highest level ever in history. As a result, the gold industry in Suriname began to flourish. This section is about the increasing economic importance of the gold sector. An analysis is made of the contribution of the sector to GDP, employment, public finance, and the balance of payments and international reserves for the period 1997–2011.

Gold Price and Gold Production⁵

In Suriname, gold production is strongly influenced by international gold price. Figure 3.1 shows the development of total gold production and international gold price between 1997 and 2011. During 1999 and 2001, the price was nearly stable around an average of US\$285 per troy ounce. Gold mining was less attractive during that time, which can be seen in the decrease in production. Other factors that caused production to decrease were the exhaustion of easily accessible mining areas and an increase in fuel prices. In 2001, gold purchases by the Bank declined because of the limited availability of foreign exchange back then (Stichting Planbureau Suriname, 2003).

Figure 3.1: International Gold Price and Total Gold Production



Source: Central Bank of Suriname, IAMGOLD, www.kitco.com.

After the terrorist attacks on the United States on September 11, 2001, gold price started to increase. They increased slowly at first until 2005; after 2005, a moderate increase was noticeable but after the global financial crisis of 2008, which started in the United States, gold price increased rapidly.

The change in 2003 is not only because of the increase in gold price but also because of the liberalization of the gold market in Suriname. Gold miners were more willing to sell their gold to the buying companies than to the Bank. In 2004, RGM started commercial production. Since 2004, total gold production consists of gold from both the small-scale (60 percent) and large-scale (40 percent) gold mining sector. In 2006 and 2007, the increase in small-scale gold production could not compensate for the decline in RGM's production. During this time, there were conflicts between management and

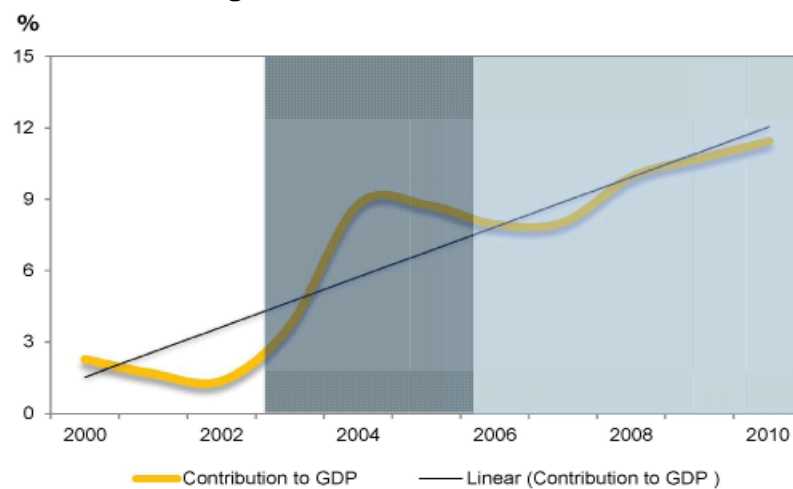
⁵ There are no firm numbers for gold production from the small-scale gold mining sector. Available data for this part of the gold sector consist of gold purchases by the Bank (1997–2002) and gold exports (2003–2011) and will, for the purpose of this paper, be assumed equal to production.

workers concerning the implementation of human resource policy, the acknowledgement of union representation for labor, and the collective labor agreement. These conflicts led to the shutdown of mining operations. Other factors responsible for the decline in production were the increase in production costs resulting from an increase in fuel prices and higher salaries, a decline in the quality of gold (less gold per quantity of processed ore), and weather conditions (Redjodikromo, 2006-2007).

Real Economic Activity

This sub-section describes the contribution of the gold sector to GDP. The small- and large-scale gold mining sectors have linkages to other sectors of the economy. Not only in the interior, but mostly companies in Paramaribo benefit from activities in the gold sector. These companies include oil companies, transportation companies, and suppliers of various inputs required for gold mining. The gold industry uses enormous amounts of fuel. The purchase of fuel is therefore one of the largest expenses for gold miners. The biggest part is used for operation of machineries and the rest is used for transportation of workers, equipment, and food to the fields. Transportation is carried out by boat, plane, or road. Transport companies are used for transportation of workers, equipment, and food to the fields. Suppliers include companies that are responding to the demand of the gold sector. They focus on the import, the sale and after sale service of excavators, suction and spray equipment, earthmoving equipment, metal detectors, chain saws, and mercury. Others who also benefit from the gold sector are concessionaires, gold buyers, jewelers, landlords of houses, taxi drivers, hotel owners, and supermarkets. These are linked mainly to the small-scale gold mining sector (Dompig, 2012).

Figure 3.2. Percentage Contribution of the Gold Sector to GDP



Source: General Bureau of Statistics.

The contribution of the gold sector to GDP closely follows the trends in gold production and thus can be explained by the production cycle. In general, an increasing trend can be observed in the contribution (Figure 3.2); however, we can distinguish between three periods. In the first period, 2000–2002, the downward trend in contribution to GDP may be traced back to declining gold prices, which made gold production not attractive. The second period, 2003–2005, marked the construction of the Rosebel Gold Mine, which led to an increase in gold-related activities. In 2004, when RGM started its gold production, gold contribution to GDP increased drastically to 8.8 percent. In the third period, 2006–2010, the contribution of the gold sector was generally below trend. Movements in the line chart suggest that from 2008 gold contribution would be above trend. In 2008, operations expanded to compensate for the decline in the quality of gold. Nevertheless, given that RGM's production is more or less fixed, increased production came through increases in small-scale gold mining activities. According to the trend line, the output of gold-related activities would have contributed between 2.0 percent of GDP in 2000 to 12.0 percent in 2010.

Employment

Because there are no data available on the number of people working in the small-scale sector, it is difficult to estimate the effect of the gold sector on employment as a whole.

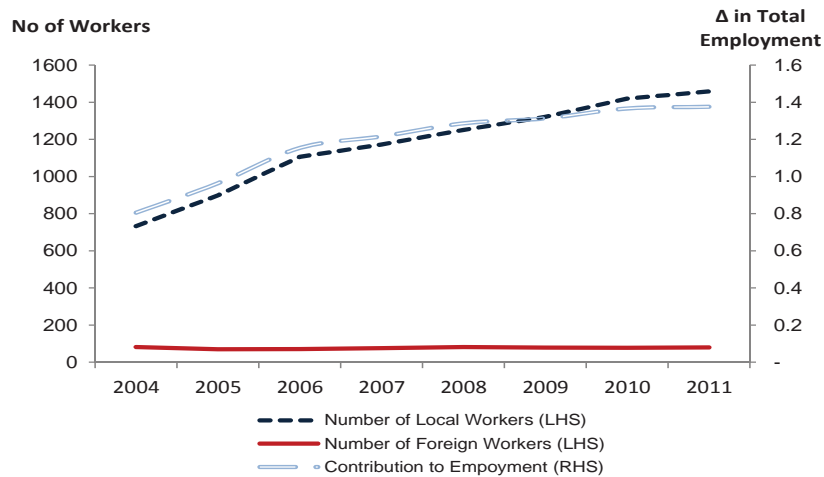
It is estimated that in 2011 around 14,500 people were registered through the planning program; this number includes not only gold miners but also mining service providers. On the basis of the number of camps and number of people needed for one operation, it has been estimated that almost 40,000 people, of whom 12,000 are Brazilians, directly work in the small-scale gold mining sector. From the 12,000 Brazilians who work in this sector, half are illegal (Dompig, 2012). If the 6,000 illegal Brazilians are subtracted, then the 34,000 people working in the small-scale gold mining sector represents 32.1 percent of total workforce in Suriname.

At RGM, there are foreign and local workers. In 2005 and in 2006, there was a remarkable growth of local workers of about 23 percent. The following years saw a growth of approximately 5 percent per year, which further slows down to 2.7 percent in 2011 (Figure 3.3). Still, it is important to mention that the number of local workers almost doubled over the 8-year period. It increased from 733 in 2004 to 1,458 in 2011. The number of foreign workers fluctuates around an average of 77 people per year.

Because of its capital-intensive nature, the large-scale gold mining sector has an average contribution of only 1.2 percent to the workforce since it started in 2004. It was estimated that when the construction of the gold mine starts, Surgold would attract about 750 people. During the mining phase (slated to start in 2015), a maximum of 1,200

people per year are expected to work in the mine (Public Meeting, 2012). Therefore, contribution to employment may increase appreciably between 2013 and 2015.

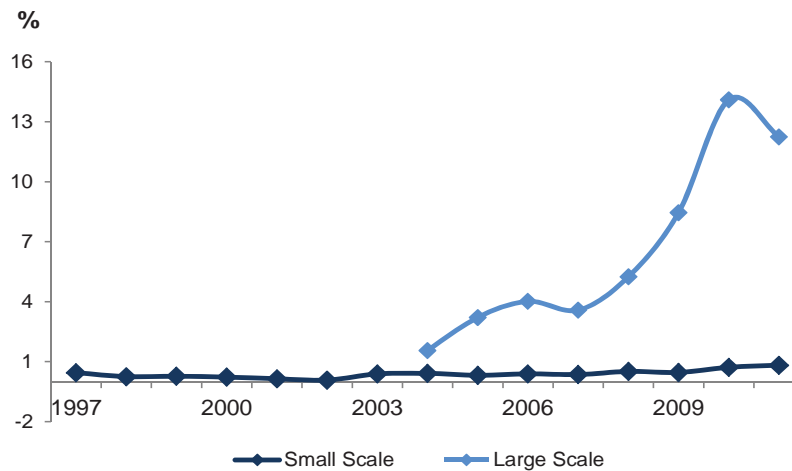
Figure 3.3: Contribution to Employment (in percent) and Number of Workers at RGM



Source: RGM.

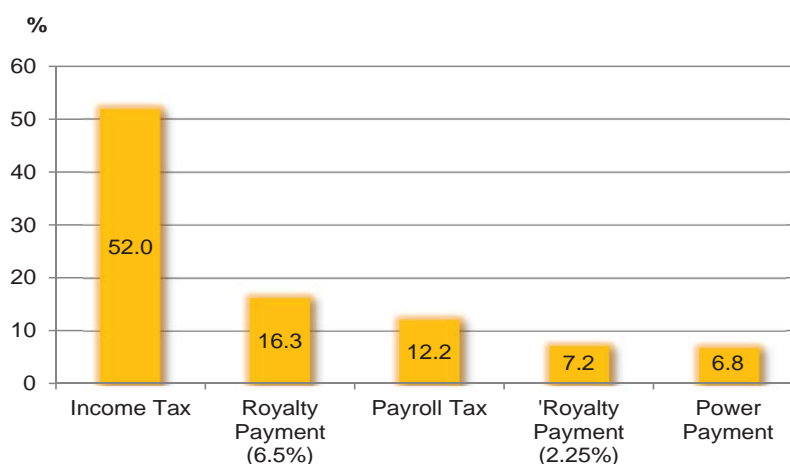
Government Finances

Participants in the small-scale gold mining sector are required by law to pay the following to the government: royalties of 1.0 percent of total export value, sales tax, payroll tax, retirement provisions of 2.0 percent of income, and tax on profits of 36.0 percent of net profits. Because of the informal character of the small-scale gold mining sector, tax collection is very difficult. According to a report of the Planning Office of Suriname, tax collection was only 0.5 percent of total estimated production value during 1995–2001. Without any significant results, the tax office attempted several times to improve tax collection (Stichting Planbureau Suriname, 2003). The only significant contribution to government revenues during the period in consideration is through the payment of royalties. In 2011, however, the government collected an additional amount of SRD 21.1 million as a result of the registration of those working in and around the mines. This amount was paid by legal local and foreign gold miners. Although production in the small-scale gold mining sector is much higher than production of RGM, the former's contribution to government revenues is very minimal (Figure 3.4). For the period in consideration, the average contribution is only 0.4 percent, while RGM contributes for 6.6 percent (2004–2011). This is not surprising given the informal character of the small-scale gold mining sector.

Figure 3.4: Gold Revenues as a Proportion of Government Revenues

Source: Central Bank of Suriname, RGM.

With regards to RGM, government revenues consist of ordinary and extraordinary royalties of, respectively, 2.25 percent and 6.5 percent, income tax of 36.0 percent of net profits, tax on wages of 25.0 percent, custom duties, power payment to the Ministry of Natural Resources, property payments, and dividend of 5.0 percent. Looking at the development of RGM's average contribution of 6.6 percent for the period 2004–2011 (Figure 3.4), it is clear that RGM's contribution to government revenues has been increasing. Payments to the government grew from 1.5 percent in 2004 to 14.0 percent in 2010. The drop in 2007 and 2011 is relative given that total government revenues grew stronger in these years compared with the previous period. The main source of RGM's payment to government comes from income tax, which accounted for 52.0 percent (Figure 3.5).

Figure 3.5 Main Components of RGM Payments to the Government (2004–2011)

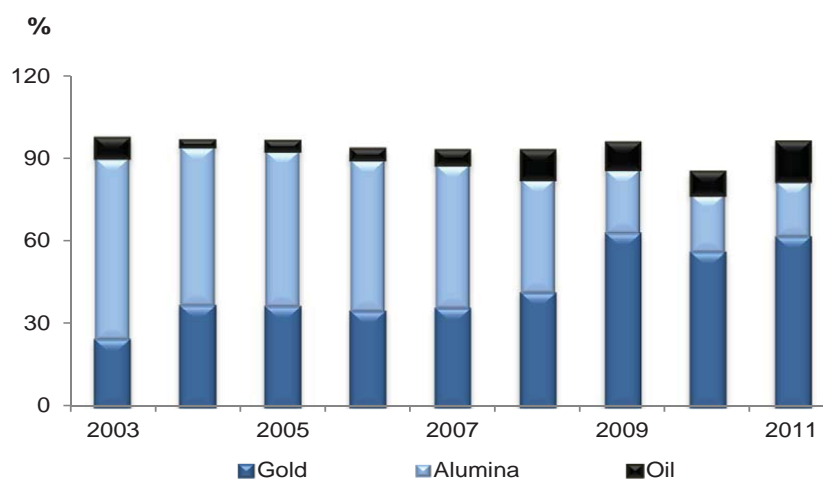
Source: RGM.

In 2006, there was a disagreement between the government and RGM about the time and amount of income tax RGM had to pay. It was a difference in interpretation of that particular article in the agreement regarding the payment of taxes. On the basis of the agreement, RGM was exempted to pay income tax until maximum return on investment was reached, which should be, according to the feasibility study, in 2007. Because of the positive development in international gold prices, the government of Suriname argued that RGM was already making profits in 2005. Therefore, the Minister of Finance and the Minister of Natural Resources put pressure on RGM to start paying income taxes earlier than was expected. Finally, after many discussions, RGM agreed to pay tax from 2005 (Santi, 2006).

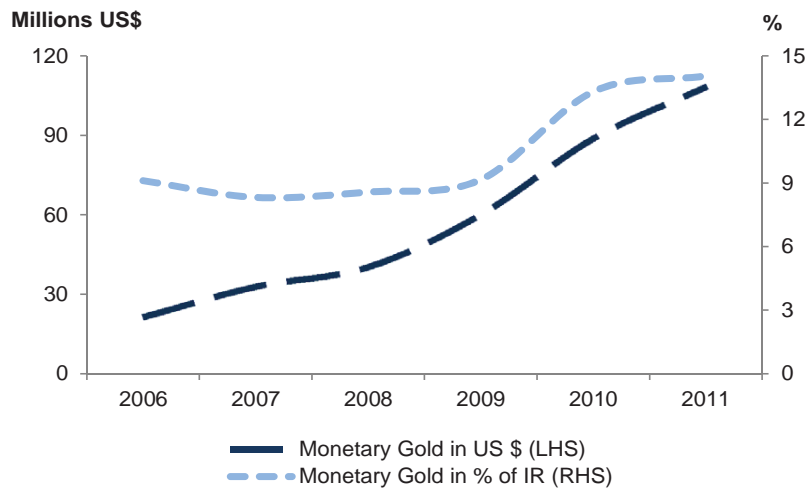
Total Exports and International Reserves

The examination of the importance of the gold sector for the balance of payments is limited to an analysis of its contribution to total exports. It is difficult to determine the value of imports attributable to the small-scale gold sector because imports destined for this sector are not separately registered. Suriname is a commodity-exporting country; more than 90 percent of all exports come from the mineral sector, of which gold plays a major role since recent years. The share of gold exports in total exports grew from 24.3 percent in 2003 to 61.4 percent in 2011. Consequently, the contribution of gold to total exports relative to the other sectors within the mining sector is also moving upward (Figure 3.6). The declining importance of the bauxite sector, which once was the lifeblood of Suriname's economy, is noticeable.

Figure 3.6 Contribution of the Gold Mining Sector in Total Exports



Source: Central Bank of Suriname.

Figure 3.7 Growth of Monetary Gold

Source: Central Bank of Suriname.

International reserves increased from US\$238.3 million in 2006 to US\$772.3 million in 2011, while the share in international reserves attributable to gold rose from 9.11 percent in 2006 to 14.1 percent in 2011. The accretion in the quantity of monetary gold is caused by the purchase of royalties (paid in pure gold by RGM to the government) by the Bank. Figure 3.7 shows the development of monetary gold in US dollars and as percentages of international reserves.

Conclusions and Recommendations

Conclusions

In Suriname, the gold industry started as early as in the first half of the eighteenth century (1718) and went through several periods of decay and revival. These periods correspond to periods of low and high international gold prices, given that gold price is one of the most important factors driving this sector.

Before 2004, only small-scale gold mining, which is more informal in nature, existed in Suriname. From 2004 onwards, mining activities within the large-scale gold mining started to contribute to the economy. On the basis of the findings of this study, it can be stated that with the exception of government revenues, the largest contribution to the economy comes from the small-scale gold mining sector. On average, 60 percent of total gold production comes from small-scale gold miners. Because produced gold is predominantly intended for exports, it is also the largest contributor to total exports and thus to the balance of payments. By the end of 2011, the gold sector's contribu-

tion to total exports increased from around 24 percent in 2003 to more than 60 percent, making this sector the biggest foreign currency earner. With regard to employment, the small-scale gold mining sector contributed approximately 32 percent of total workforce in 2011, whereas the large-scale sector contributed only 1.2 percent. The low contribution of the large-scale sector can be ascribed to the low labor-intensive nature of the sector. Because of its informal nature the small-scale gold mining sector covered on average only 0.4 percent of total government revenues during the entire research period while the large scale covered 6.6 percent of which the majority comes from income tax.

Recommendations

To get a better indication of the contribution of the small-scale gold mining sector to the economy, it would be necessary to, in the first place, focus on finding methods (techniques) for a reliable estimation of gold production in this sector. Second, to continue the gold sector reforms that should reassert government authority in the interior and to legalize all illegal activities. Legalization of these activities would lead to increased government revenues and will be redistributed to other parts of the population. In this way, a much bigger part of Suriname's population can benefit from our natural wealth.

With regard to the large-scale gold mining sector, because this sector is the responsibility of a foreign multinational, the government of Suriname should put effective systems in place to monitor the quantity of total gold produced and exported.

Furthermore, Parliament should expedite the process of establishing the planned Savings and Stabilization Fund to smooth out revenues coming from not only the gold sector but the mining sector as a whole, and mostly to be able to save for future generations. As is the case with most primary commodities, revenues from the gold sector are likely to be volatile. Therefore, receipts need to be managed carefully to maximize their effectiveness to the economy, more so because gold is a non-renewable resource.

To more accurately measure the gold sector's effect on the balance of payments, it is necessary to be able to determine the import content of inputs for gold production. Therefore it is essential to have a system whereby imports, intended for use in the gold sector, are registered. That should allow for a more accurate estimate of gold's contribution to international reserves.

Chapter

4

The Oil Industry in Suriname: 1980-2012

Introduction

Natural resources are very important drivers of economic growth in many countries. On the basis of their speed of regeneration, natural resources can be divided into renewable and nonrenewable resources (Permane, 1996). One such nonrenewable resource is mineral oil. Starting with the industrial revolution at the end of the nineteenth century and the discovery of the combustion engine, the importance of this nonrenewable resource has increased generally over decades.

The International Energy Outlook (2006) stated that 40 percent of the world's energy demand is covered by mineral oil. Consequently, excessive volatility in the world market price of oil tends to have significant effect on many economies and hence on global output. The recent oil price developments are caused by geopolitical events in the Middle East (for example, in countries such as Iran, Libya, and Syria), economic slow-down in the emerging economies and recession in the countries of the European Union. This, among other factors, has an effect on prices of other commodity goods in the world economy.

Suriname has several natural resources, namely bauxite, gold, and oil. The exploitation of mineral oil contributes significantly to Suriname's economy in recent years and is one of the main foreign currency earners. Its increasing importance as a foreign currency earner has been made possible through higher output as a result of increased investments in the sector. The exploitation of oil in the economy has affected gross domestic product (GDP), employment, government revenues, and balance of payments.

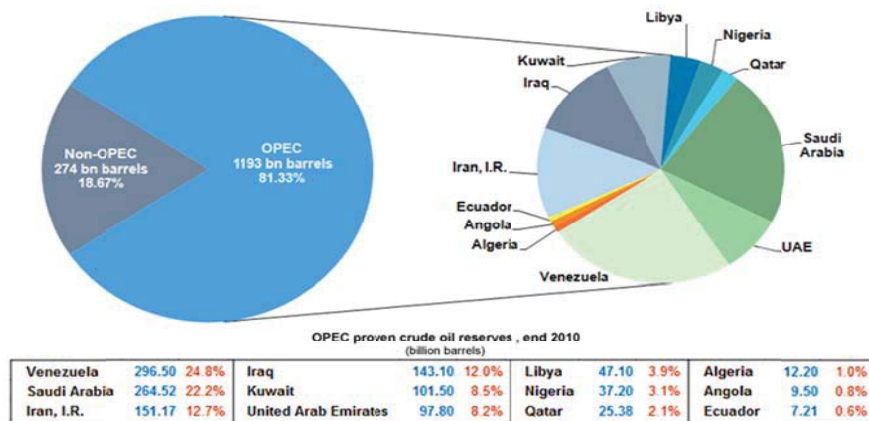
This paper attempts to determine what effect the oil sector¹ has had on the national economy between 1980 and 2010. To illustrate the macroeconomic significance of this sector several indicators are used, including GDP, employment, public finances, and balance of payments. The extent to which the economy is dependent on minerals will also be examined.

This paper is structured as follows. First, a brief description is given on the significance of oil in the world economy and on the characteristics of Suriname's economy in the historical background. The development of the oil sector in Suriname is then highlighted, including the institutional issues that have influenced the operation and development of the sector. Next, the macroeconomic impact of the sector on the economy is described. Conclusions and some policy recommendations are provided last.

Significance of Oil for the World Economy

The physical presence of the stock of oil reserves is not easy to map. The Organization of the Petroleum Exporting Countries (OPEC) stated in their Annual Statistical Bulletin 2010/2011 that proven crude oil reserves stand at well above 1.190 billion barrels. Proven crude oil reserves are estimates that include oil that can be produced economically through application of improved recovery techniques following successful completion of pilot testing.

Figure 4.1 OPEC Share of World Crude Oil Reserves, 2010



Note: OPEC = Organization of the Petroleum Exporting Countries.

Source: Central Bank of Suriname.

Figure 4.1 illustrates the relative shares of proven oil reserves in the world. Among the OPEC countries, Venezuela has the largest share (24.8 percent), followed by Saudi

1 Staatsolie Maatschappij N.V. is the only active oil-producing company in the oil sector in Suriname.

Arabia (22.2 percent), Iran (12.7 percent), Iraq (12.0 percent), and Kuwait (8.5 percent). Other countries such as the Libya, Nigeria, and the United Arab Emirates have relatively smaller shares².

The importance of oil³ for the world economy is signified by the use of this commodity as an economic and strategic resource. Its use as an economic resource hinges on its role in industrial and economic development to the extent that the world organizational system relies on the commodity to drive economic expansion. Given their higher industrial and economic development levels, developed economies depend relatively more on this nonrenewable resource compared with developing countries. It is expected that as the emerging economies, led by the BRICS economies⁴, increase global oil demand, this will have an effect on the world market price of oil in the first place and on commodity prices in general if the supply of the oil-producing economies remains relatively unchanged.

Historically, oil-producing countries have used oil as a strategic resource to exert influence. Besides this, they also tend to have an economic motive behind their actions. In the oil crisis of 1973, the Arabian oil-producing countries increased oil price and lowered their production. This strategy not only resulted in excess demand but also in a sharp increase in the world market price of oil, and it consequently boosted the oil-producing economies. The effect on the rest of the world was enormous because of the price-setting arrangements among the OPEC countries. Non-oil-exporting economies have had to contend with rising inflation, increased budget deficits, and soaring public debt as a result of high oil prices.

Table 4.1 Top Five World Oil-Producing and Oil-Consuming Economies (2010 Estimates)

Top Five Oil-Producing Economies		Top Five Oil-Consuming Economies	
Country	BBL/day	Country	BBL/day
Saudi Arabia	10,520,000	United States	18,690,000
Russia	10,270,000	European Union	13,680,000
United States	9,688,000	China*	8,200,000
Iran	4,252,000	Japan	4,363,000
China	4,073,000	India	2,980,000

Source: <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2173rank.html>

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- 2 OPEC share of World Crude Oil Reserves 2010.
 - 3 The mineral crude oil is a mixture of hydrocarbons that exists in a liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities (OPEC).
 - 4 BRICS is a grouping acronym that refers to the countries of Brazil, Russia, India, China, and South Africa, which are deemed to be on the cusp of advanced economic development.

The Oil Industry in Suriname

Introduction

For a better understanding of the importance of the oil sector on Suriname's economy, it is relevant to provide information on the characteristics of the economy. Suriname's economy was structured along the lines of a colonial plantation economy and a neo-colonial raw material producing economy, without a strategy to enhance the production structure (Centrum INDEX, 1984:23). This is revealed by the composition of the basket of the country's export products, which consists mostly of raw materials (Verhees et al, 1984:42) and is dominated by a few products, namely alumina, oil, and gold. Predominantly foreign companies are active in the mining industries, which, because of their high capital and low labor intensity, are relatively not contributing significantly to employment.

Suriname has a relatively small population and therefore a small domestic market. An inadequate physical infrastructure is usually a drag on production. The small production base translates into a limited range of products produced domestically, which triggers the need for imports and therefore lays the basis for an open economy. As a consequence, there is a direct effect of the developments at international level on Suriname's economy (van Schaaijk, 1991:29).

Developments in the Oil Sector

Institutional

Staatsolie Maatschappij Suriname N.V., the State Oil Company of Suriname, known in short as Staatsolie, was founded on December 13, 1980, as a limited liability company and incorporated under Surinamese law. The Republic of Suriname is the sole shareholder. In addition to general legislation, Staatsolie is legally governed by two specific laws: the Mining Decree of 1986 and the Petroleum Law of 1990. On the basis of these laws, Staatsolie has mining rights to explore for and to produce hydrocarbons in Suriname as an independent operator or with other oil companies. On behalf of the government, Staatsolie assesses the hydrocarbon potential while promoting, contracting, and monitoring the activities of the foreign oil companies. Some other activities of this integrated oil company include refining, marketing, and distributing oil products and producing electricity (Staatsolie Annual Report, 2010).

Foundation of Staatsolie Suriname N.V.

The Geological and Mining Service of Suriname discovered crude oil while drilling for drinking water in the coastal area (Calcutta, Saramacca district) in 1965. One year later, oil was found in a different place in the same district, while in 1967 oil was found at

Weg naar Zee in Paramaribo district. Dutch oil company, Shell did some exploratory drilling, but the oil findings were, at a world market price of US\$1.80 per barrel, not profitable back then.

The oil crisis in 1973 and 1979 led to a continuous increase in the world market price of oil. Accordingly, the import of oil derivatives caused a burden on the monetary reserves of Suriname. It was realized that the local exploitation of oil could yield savings in import costs and import value for the economy (Annual Report Staatsolie, 1981). These main factors contributed significantly toward the establishment of Staatsolie Maatschappij N.V.

Oil Production and Export

Oil production started in 1982 with a daily production of 115 barrels of crude oil. Through boarder savings and bank loans, the oil production level gradually increased to 16,000 barrels per day (Staatsolie Nieuws, January 2006). At first, domestic oil production was used domestically. Starting with the bauxite company, Suralco as their first customer in 1982, Staatsolie also provided refined oil (Staatsolie-1500) to the local market for rice drying, food processing companies, soap companies, packing companies, and soft drink companies in 1984. With the help of Shell Trading Company, the first export to Trinidad took place in 1988. Staatsolie supplies the local market—as well as the Caribbean market—with diesel, fuel oil, and bitumen. Staatsolie sold 50 percent of its production locally in 2010, while the Caribbean market was provided with the other half, which included diesel, fuel oil, and bitumen (Staatsolie Annual Report 2010).

Subsidiaries

As part of their diversification strategy and to increase its access to the Caribbean bunker market, Staatsolie entered into a strategic partnership with Ventrin Petroleum Company Limited in August 2004 (Staatsolie Annual Report, 2010). Ventrin Petroleum Company is registered in Trinidad and Tobago and is involved in the bunkering of ships (Staatsolie Company Profile, 2006). Staatsolie acquired 30 percent shares in Ventrin in 2004 and increased their interest in 2008 to 98.4 percent (Staatsolie Annual Report 2010).

To help spread the risk involved in the oil exploration project, Staatsolie established the Staatsolie Paradise Oil Company N.V. in 2005 as a wholly owned subsidiary. This company primarily operates in joint operations with third parties. Paradise Oil Company and its partners operate through production-sharing contracts with Staatsolie.

Staatsolie took steps to diversify into electricity production in 2006 when the company started the commercial operations of a 14-megawatt power plant. This plant not only

supplies electrical energy but cogenerates steam for deliveries to the refinery of Staatsolie. In 2007, this plant was incorporated as a separate legal entity, Staatsolie Power Company Suriname N.V. A Power Purchase Agreement was signed in 2005 with the Energie Bedrijven Suriname. The power company supplies electrical energy to Energie Bedrijven Suriname for distribution in the greater Paramaribo network. In 2010, the thermal power generation capacity of Staatsolie Power Company Suriname was doubled to 28 megawatts (Staatsolie Nieuws no.1, 2011). The expansion of this power generation capacity from 34 megawatt to 62 megawatt has been completed in the first quarter of 2014.

As part of the expansion of Staatsolie Refinery, Staatsolie acquired the sales operations of Chevron/Texaco in Suriname in September 2011. These operations include 20 fuel-retailing stations, four storage facilities, and a storage facility for jet fuel. With this strategic acquisition, the facilities and the infrastructure have been put in place to bring high-quality diesel and gasoline fuel to the local market as from 2014. For this reason, Staatsolie established Suritex N.V., a subsidiary that will be active in the retail market.

Transportation of Crude Oil

Staatsolie's crude oil is transported mainly through pipelines. Initially, Saramacca crude oil to Staatsolie's customers was transported with tankers, which were built in-house. In 1992, a 55-km pipeline from the Saramacca to the Tout Lui Faut operations was constructed, followed by a 22-km pipeline from the Tout Lui Faut operations to Suralco Paranam. The latter went into operation in July 2000. In May 2010, a 315-meter pipeline, with a maximum capacity of 5,000 barrels per day, was constructed under the Saramacca River from Sarah Maria to the crude-fire power plant at Jossiekreek (Staatsolie Nieuws, June 2009).

Refinery and Refinery Expansion Project

Although a preliminary design for a refinery at the Tout Lui Faut location was ready in 1989, lack of finances delayed the construction of the refinery until 1995. Staatsolie started to refine oil in 1997. At present, the company produces fuel oil, diesel, and asphalt bitumen. As part of their 2008–2012 Strategic Plan, the company started an expansion project to increase its refining capacity from 7,000 to 15,000 barrels per day and to produce products with a higher added value (Staatsolie Annual Report, 2010). The expanded refinery will produce premium diesel, gasoline, fuel oil, and asphalt bitumen for the local market, while sulfuric acid will be exported. The preparations for the expansion started in 2002, and construction officially commenced on February 2012. The new refinery will be in production by the end of 2014 (Staatsolie Annual Report, 2012). With the output of the new refinery, Staatsolie will be able to cover part of the local market with gasoline, while the entire local demand for diesel will be covered.

TapaJai Hydro Power Project and Sugarcane-to-Ethanol Project

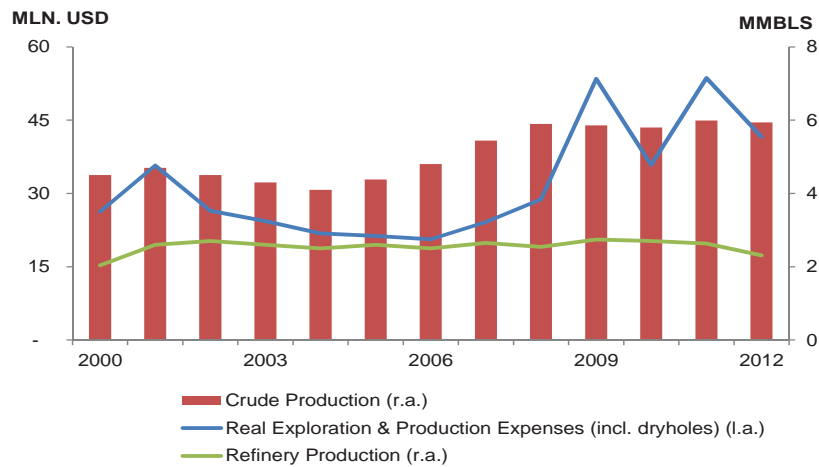
Following the international trend to seek alternative energy resources to complement oil, Staatsolie, as stated in their Vision 2020 document, decided to play a leading role in the sustainable development of Suriname's energy industry. As a result, two other energy projects have been executed: the Tapa Jai Hydro Power Project and the Ethanol Project. The goal of the TapaJai Hydro Power Project is to add 60-megawatt hydropower to the electricity grid by diverting water from the Tapanahoni River into the Brokopondo Lake (Staatsolie Annual Report, 2012). A technical study, as well as an environmental and social impact study for the TapaJai Hydro Power Project, was completed in 2010 (Staatsolie Annual Report, 2010). However, this hydroenergy project has been temporarily put on hold, as consultations with the residents in the area have not been completed. (Staatsolie Annual Report, 2012).

To produce high-quality premium gasoline, Staatsolie undertook a feasibility study for the production of ethanol, a biofuel produced from sugar cane, in Wageningen, Nickerie district, in 2010 (Staatsolie Nieuws no.1, 2011). A portion of the ethanol produced will be mixed with gasoline from the new refinery to produce automobile fuel for the local market, while the other part will be exported. Besides the production of ethanol, the feasibility of producing raw sugar and generating electrical power from the bagasse⁵ has been investigated. In the assessment phase of the sugarcane pilot project, an Agricultural and Industrial Solution Studies as well as an environmental and social impact assessment were undertaken. The pilot sugarcane cultivation project, a major component of the Agriculture Solution Study, consisted of a number of facets, including a selection of 14 sugarcane varieties to be tested, in vitro multiplication of these varieties, soil measurement, selection of the pilot area, building of field offices, and land preparations. The result of the environmental and social impact assessment studies indicated that the project will not have an adverse effect on the environment and that it was likely to have a positive effect on the community (Staatsolie Annual Report, 2012). International companies will be attracted to build the ethanol and sugarcane plant.

Investments

The activities in the investment program of Staatsolie can be divided into upstream and downstream activities. The upstream activities comprise explorations, crude production, reservoir studies, development drilling, and engineering and maintenance services. The refinery, retail, bunkering, and thermal power generations are part of the downstream activities as well as the business development projects such as the Sugarcane-to-Ethanol Project and the TapaJai Hydro Power Project (Gangaram Panday, 2013).

5 This is the dry, fibrous residue remaining after the extraction of juice from the crushed stalks of sugarcane.

Figure 4.2 Production and Investments in the Oil Sector, 2000–2012

Source: Staatsolie Maatschappij N.V.

Exploration activities to sustain and expand production remain the largest component in the investments upstream, whereas investments in the expansion of the refinery and the expansion of the power company (Staatsolie Power Company Suriname) form the bulk of the downstream projects.

The investments in exploration and production activities as well as the overall crude production all show a rising trend. As of 2008 crude production was sustained at a level of 16,000 barrels per day, while outlays to expand reserves continued to be made. Between 2000 and 2012, the refinery production remained relatively stable, around an average of 2.6 million barrels per year, given the maximum refining capacity of 7,000 barrels per day.

The Macro-Economic Impact of the Oil Sector in Suriname: 1980-2010

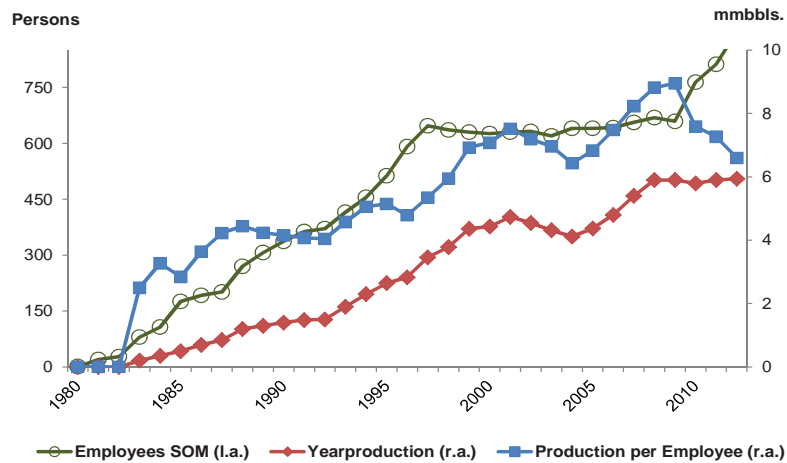
Introduction

With the relative decline of the bauxite sector in recent years, much attention and debate have shifted to the emergence of other possible drivers of economic activity in Suriname. Two of these emerging sectors are the gold and the petroleum sectors. In this section, the effects of the petroleum sector operations on employment are first discussed, followed by the effect on gross domestic product, government revenues, and balance of payments.

Effect on Employment

Employment in the oil sector has been strongly related to production (McLeod, 2005). The quick growth and the diversification of the oil company resulted in the identification of new areas for which additional qualified personnel was needed. Figure 3 gives an overview of the production per employee.

Figure 4.3 Productivity Development, 1980–2010



Source: Staatsolie Maatschappij N.V.

By virtue of Staatsolie being the only exploring, exploiting, and producing company in the oil industry in Suriname, there has been an ongoing hiring of and investment in personnel. This has led to a relatively high concentration of skilled employees (Staatsolie Annual Report, 1999) in the sector. With the ongoing diversification, not all aspects of the industry can be managed by Staatsolie, and the development of highly specialized and skilled employees is not always feasible or profitable. The company therefore enlists the services of contractors with these specialized skills. Through this, jobs are provided both within and outside the oil company. This gives much needed stimulus to employment, particularly in the ancillary and construction industries. Contractors are hired for civil engineering and specialized operations regarding oil (McLeod, 2005). In 2005, employees working in the service sector on contract to Staatsolie amounted to 480 people⁶.

⁶ It was not possible to get an updated figure from Staatsolie.

Table 4.2 Development of Employment in the Oil Sector, 1980–2010

Year	Total Economy	Staatsolie		Year	Total Economy	Staatsolie	
	Economic Active Population	Number of Employees	In		Economic Active Population	Number of Employee	In
1980	97,634	1	0.00	1997	93,463	647	0.69
1981	99,551	20	0.02	1998	98,581	636	0.65
1982	101,288	28	0.03	1999	105,394	630	0.60
1983	101,946	80	0.08	2000	110,600	626	0.57
1984	99,423	107	0.11	2001	113,447	630	0.56
1985	98,231	176	0.18	2002	116,368	632	0.54
1986	97,495	192	0.20	2003	119,364	626	0.52
1987	95,689	201	0.21	2004	122,437	641	0.52
1988	96,492	270	0.28	2005	132,600	636	0.48
1989	97,538	307	0.31	2006	136,573	642	0.47
1990	98,220	337	0.34	2007	138,602	656	0.47
1991	98,360	363	0.37	2008	139,756	669	0.48
1992	91,383	371	0.41	2009	139,904	659	0.47
1993	93,113	415	0.45	2010	141,554	764	0.54
1994	89,535	455	0.51	2011	146,534	812	0.55
1995	89,799	513	0.57	2012	144,735	900	0.62
1996	97,831	591	0.60				

Source: Staatsolie/General Bureau of Statistics (ABS): Statistical Yearbook 2010; Statistical Papers (1997–2011).

Note: *The economically active population: district of Paramaribo and district of Wanica.

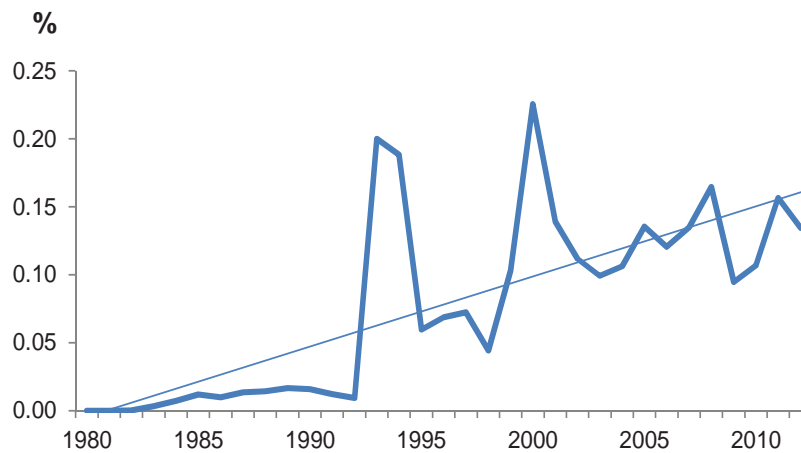
The number of employees working at Staatsolie in relation to the economically active individuals in the population (Table 4.2) shows an increasing trend. The ratio rose about 0.2 percent in the mid-eighties to 0.34 percent in 1990 and then to 0.57 percent in 2000, suggesting an average ratio of about 0.5 percent over this period. From 2001 to 2011, the average ratio remained at approximately 0.5 percent of the economically active persons.

The contribution of the oil sector to employment in Suriname is relatively marginal mainly because the oil industry remains more capital-intensive and less labor-intensive, in relation to other sectors (for example, agriculture). Nevertheless, output per employee from about 1982 has shown an increasing trend, suggesting some improvements in productivity.

Effect on Gross Domestic Product

The General Bureau of Statistics relies on the production method to compile GDP at current and constant prices. In Figure 4.4, output of the oil sector is presented as a percentage of the nominal GDP. As the figure illustrates, oil production began to have a perceptible effect on national output from about 1985 when it registered about 1 percent of GDP. This rose gradually up to about 2 percent in 1989 and 1990. After marginal declines in 1991 and 1992, the industry's contributory share jumped to average about 19.5 percent in 1993 and 1994, on the strength of rising production, and a devaluation of the Surinamese guilder that magnified the value of oil output relative to GDP. As the effect of the devaluation started to affect all domestic prices, national output also expanded sharply, and the contributory share of the sector slowed to average about 6 percent between 1995 and 1998. The share rose to 10 percent in 1999 as a result of increasing domestic production and rising world market price for oil. The industry registered its highest contributory rate of 23 percent in 2000, thanks to rising production volumes, an increase of 58 percent in the world market price and another sharp devaluation of the local currency. Between 2001 and 2003, under the combined effect of stagnant production and domestic price increases attributable to the exchange rate adjustment of 2000, the oil sector contribution to national output averaged 12.5 percent of GDP.

The Surinamese dollar replaced the guilder in 2004 and as the currency remained relatively stable up to 2010, changes in the contributory rate was determined solely on the basis of domestic production and changes to the world market price for oil. During that period, the contributory rate averaged about 12.3 percent. The rate rose to 14.5 percent between 2011 and 2012 largely on the strength of an increase of 40 percent in the world market price. Even if the periods 1993, 1994, and 2000 are excluded to discount the effect of the changes in the exchange rate, the oil sector's contribution to national output still averaged 10.8 percent between 1995 and 2012 (see the Appendix). This serves to emphasize the steadily increasing importance of the oil industry to growth in the national economy.

Figure 4.4 Ratio of Oil Output to GDP

Source: Staatsolie N.V.; Central Bank of Suriname.

Effect on Public Finances

Revenues stream from the oil sector to the government consists of tax (direct and indirect) and nontax revenues. The direct taxes include income tax and payroll tax, while dividends (interim and final) can be regarded to be the most significant nontax revenues from oil to the government. Taxes are based on the financial result as shown in the income statement⁷ of the annual reports of Staatsolie.

In Figure 4.5, revenue streams from the oil sector is presented as a percentage of the total government revenues in the period 1994–2011⁸. In this study government revenues from the oil sector consist of income tax and dividend payments. The contribution of the oil industry to the public finances is influenced by production volume of oil, international oil prices, and exchange rate.

Between 1985 and 1993, the production volume of oil was relatively low and as a result, the contributions to the public finances in this period were marginal. The same applies to the years 1991 and 1998. The contribution of Staatsolie to the government budget in these two years was extremely low as the company did not make profit due to relatively low international oil prices. Only the payroll taxes were paid to the government.

Figure 4.5 displays a general upward trend in the contribution of the oil sector to government revenues over the period 1994–2011. Between 1994 and 1999, the average

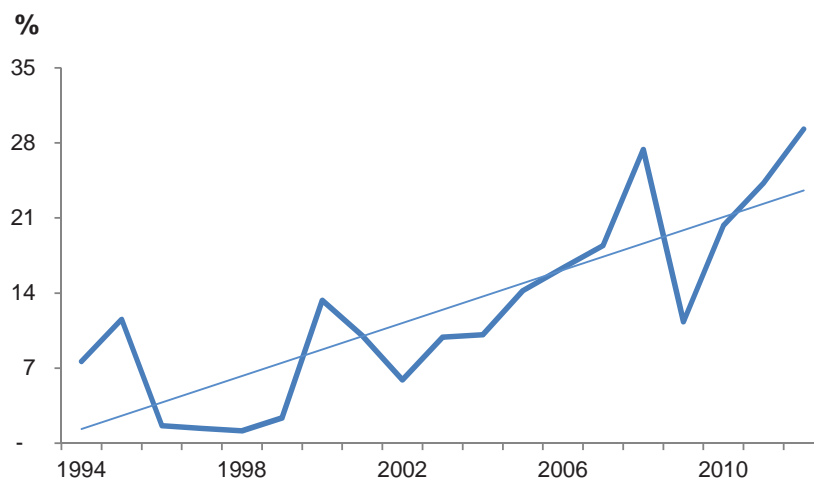
7 The distribution of earnings takes place in accordance with Article 28 of the articles of association, which stipulates that net earnings reflected in the balance sheet and income statement are adopted by the Annual General Meeting and are placed at the disposal of the General Meeting of Shareholders (Annual Report 2009).

8 As a result of lack of data, public finances on a cash basis are used.

share of the oil sector in the government revenues was 6 percent. The commissioning of the refinery in 1999 positively affected the revenues of the oil company and hence the revenues to the government. A steady increase in the international oil prices led to an average contribution of 13 percent in the period 2000–2004. The increase in government revenues in 2000 was mainly the result of the devaluation of the Suriname guilder, as the increases in production volume as well as the increase in the world market price of oil were marginal⁹. The small dip in 2004 was caused by a decline in production volume.

Between 2005 and 2011, the contribution to the government budget was 20 percent on average mainly because of a strong increase in oil prices internationally, as the demand for oil worldwide sharply increased. This increase in price reached its peak in 2008 and, together with an increase of 7.8 percent in production volume, resulted in a contribution of 27 percent to the public finances in 2008.

Figure 4.5: The Share of the Oil Sector in Government Revenues, 1994–2011



Source: Statistical Compendium Central Bank of Suriname, Staatsolie Maatschappij N.V.

Note: Exchange rate of Central Bank of Suriname is used for the conversion of the oil revenues.

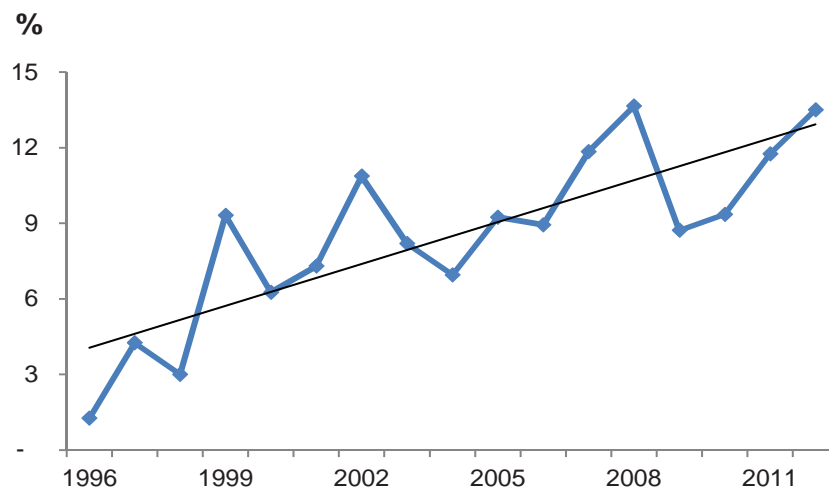
During the global recession of 2009, demand for oil waned somewhat and international oil prices declined. This, along with a marginal decrease in production volume, resulted in a sharp decrease in contribution to the public finance. As the international recession started to bottom out in 2010, oil prices started to increase again, rising by 25 percent in 2010 and 40 percent in 2011. As a result, the contribution of the oil sector to government revenues increased by 20 percent and 24 percent, respectively.

⁹ The official exchange rate increased by 120 percent to Sf 2,157 in 2000.

Effect on the Balance of Payments

The direct effect of the oil sector to the balance of payments can be measured through the exports and imports figures of this sector. In Figure 4.6, the revenues of the exports of the oil industry are presented as a percentage of the total export revenues of the economy of Suriname and are calculated for the period 1995–2010. This method is used for analytical purpose¹⁰. The oil exports revenues in this research include exports of crude and derivatives (bunkering revenues are not included).

Figure 4.6 Exports of the Oil Sector as Percentage of Total Exports, 1996–2010



Source: Central Bank of Suriname/Staatsolie Maatschappij N.V.

The exports of the oil sector as percentage of the total exports of Suriname's economy is influenced by the production volume of the oil sector and the price of oil, which are linked to the international oil prices. Between 1996 and 2000, the average contribution of the oil sector to total exports of the economy amounted to 4.8 percent. The increase in contribution in 1999 was due to the increase in production and oil price in 1999 of, respectively, 15.87 percent and 41 percent. Oil export revenues as percentage of the total exports between 2001 and 2005 were on average 8.5 percent. The slight increase of oil export revenues in 2002 was the result mainly of an increased oil price of 14 percent to US\$21.74 per barrel.

Between 2006 and 2011, the average contribution of the oil sector to total exports of the economy amounted to 10.7 percent. The increase was caused mainly by oil price increases as well as increases in oil production. Oil price increased during that period by 117 percent to US\$101 per barrel. Oil production on a yearly basis was gradually increased from 4.80 million barrels in 2006 to 5.99 million barrels in 2011. As a result of the global recession of 2008, oil price dropped from US\$78.98 in 2008 to US\$57.66 in 2009, but rose again to US\$72.82 in 2010. The drop in the contribution of oil exports to the economy in 2009 and 2010 may be attributed to price effects (Figure 4.6).

¹⁰ Data on import revenues for the oil sector and transfers could not be tracked.

It may therefore be inferred that over the period 1996 to 2011, the petroleum sector made a steadily increasing contribution to total export earnings and hence to the accumulation of international reserves.

Oil Sector Dependence¹¹

It is an established fact that the economy of Suriname depends highly on the mineral sector. The average mineral dependence index between 2005 and 2009 was 50.74 percent (Central Bank of Suriname, 2009), while in 2010 the mining sector accounted for 85 percent of total exports (Central Bank of Suriname, 2010). The extent to which the economy of Suriname depends on oil has also grown steadily over the years. In the period 1996–2000, the economy on average depended for 4.6 percent on the oil sector for its overall generated resources; this increased to 7.0 percent between 2001 and 2005 and further rose sharply to 21.6 percent between 2006 and 2010 (Table 4.3).

Table 4.3 Oil Dependence of the Economy, 1996–2010

Year	Output of the Oil Sector as ratio of GDP (%)	Oil Revenues as ratio of Government Revenues (%)	Oil Exports* as ratio of Total Exports (%)	Oil Dependence (%)
1996	3.8	1.4	6.4	3.9
1997	3.7	1.5	4.1	3.1
1998	2.1	0.2	3.3	1.9
1999	5.4	3.7	8.5	5.9
2000	4.8	13.5	6.3	8.2
2001	7.2	8.5	4.4	6.7
2002	6.1	8.6	6.1	6.9
2003	6.4	10.8	2.6	6.6
2004	4.3	9.2	2.8	5.4
2005	6.7	16.4	4.9	9.4
2006	7.3	18.7	5.5	10.5
2007	9.4	20.5	23.2	17.7
2008	12.2	34.0	52.3	32.8
2009	6.6	12.5	39.5	19.6
2010	8.6	23.1	33.0	21.6

Source: Staatsolie/Central Bank of Suriname.

Note: *Export of oil and derivatives (bunkering not included).

¹¹ The oil sector dependency ratio is calculated as an average of oil contribution to value added, government revenues, and total exports.

The increasing dependency of the economy on the oil sector involves high risks, due to the volatility of the price of oil on the world market. A drop in the oil prices can lead to a decreased contribution to the government revenues. The vulnerability of the economy can be decreased through properly planned and sequenced adjustments over the medium term. An obvious strategy that can lessen the dependency on the oil sector or reduce the vulnerability of the economy is a diversification of the economy through increased investments in other production sectors. The establishment of a wealth fund to save the extra revenues during times of high oil prices and the use of this fund for targeted investments or in times when the economy suffers from lower revenues is a positive step in this direction.

Conclusions and Recommendations

Conclusions

An increase in production together with a high price for oil on the world market should lead to an increase in GDP and a significant increase in the contribution of oil to government revenues. Because the oil industry is capital-intensive, the contribution to employment is marginal. However the share of the sector to exports has grown steadily. This is mainly as a result of the rise of the world market price of oil and to a lesser extent to increased oil production. The international reserves are also positively influenced by the oil industry. The positive influence of the oil industry of Suriname's economy is thus patently clear, but the relatively high dependence of the economy on the oil industry and, indeed on the mining sector, needs to be adequately addressed with judicious policies.

Recommendations

The government needs to deliberate with stakeholders in the oil industry to devise a framework and effective strategies in order to increase the industry's share in national output. They need to focus not only on fiscal measures, but also on nonfiscal measures. Appropriate conditions need to be created for durable and long-term growth of the oil sector even as measures are put in place to diversify the economy. That calls for intensified measures to invest in exploration activities to expand the available petroleum reserve base.

Establishing an investment fund to save the extra oil revenues from high oil prices is also a necessity. This investment fund may be used for investments in other sectors in order to diversify the production system so as to decrease the vulnerability of relying on a narrow production base. It can also help to protect and stabilize the economy in times when revenues drop significantly and as a buffer for future generations.

Appendix**A.4.1 Oil Sector's Contribution to National Output**

Year	Crude Production (in bbls.)	Brent Oil Price (in US\$)	Exchange Rate (USD-SRD)	Production Value (in SRD)	Nominal GDP (in SRD)	Nominal GDP (%)
1980	—	36.83	1.8	—	1,589,700,000	0
1981	—	35.93	1.8	—	1,778,100,000	0
1982	6,000	32.97	1.8	356,076	1,830,400,000	0
1983	116,000	29.55	1.8	6,170,040	1,767,200,000	0
1984	245,000	28.78	1.8	12,691,980	1,728,300,000	1
1985	418,000	27.56	1.8	20,736,144	1,746,500,000	1
1986	682,000	14.43	1.8	17,714,268	1,782,000,000	1
1987	801,000	18.44	1.8	26,579,640	1,959,700,000	1
1988	1,237,000	14.92	1.8	33,229,426	2,321,800,000	1
1989	1,380,000	18.23	1.8	45,273,665	2,712,600,000	2
1990	1,436,000	23.73	1.8	61,326,500	3,884,000,000	2
1991	1,533,000	20.00	1.8	55,197,341	4,481,000,000	1
1992	1,641,000	19.32	1.8	57,069,887	6,069,000,000	1
1993	1,975,000	16.97	87.02	2,916,821,426	14,578,000,000	20
1994	2,305,000	15.82	419	15,276,283,934	81,136,000,000	19
1995	2,600,000	17.02	412	18,228,267,295	305,683,000,000	6
1996	2,830,000	20.67	406	23,747,679,802	345,426,000,000	7
1997	3,460,000	19.09	406	26,820,503,217	370,569,000,000	7
1998	3,800,000	12.72	406	19,617,722,562	444,340,000,000	4
1999	4,400,000	17.97	995	78,673,000,608	762,210,000,000	10
2000	4,500,000	28.50	2200	282,104,947,080	1,250,927,000,000	23
2001	4,700,000	24.44	2200	252,749,833,974	1,818,729,000,000	14
2002	4,500,000	25.02	2550	287,141,860,305	2,569,900,000,000	11
2003	4,300,000	28.83	2650	328,525,861,825	3,314,169,000,000	10
2004	4,100,000	38.27	2.75	431,437,875	4,057,500,000	11
2005	4,380,000	54.52	2.78	663,870,594	4,899,000,000	14
2006	4,800,000	65.14	2.78	869,282,370	7,206,323,000	12
2007	5,400,000	72.39	2.78	1,086,704,845	8,060,530,000	13
2008	5,900,000	97.26	2.78	1,595,258,520	9,698,054,000	16
2009	5,860,000	61.67	2.78	1,004,653,636	10,638,423,000	9
2010	5,795,703	79.50	2.78	1,280,836,357	11,991,818,000	11
2011	5,990,857	111.26	3.35	2,232,829,867	14,259,252,000	16
2012	5,935,674	111.67	3.35	2,220,497,079	16,539,502,000	13

Source: Staatsolie/Central Bank of Suriname.

Chapter

5

The Banana Industry in Suriname: 1971-2011

Introduction

Agriculture, especially the cultivation of fruits and vegetables, is gaining global importance and is being triggered by rising personal incomes and awareness of healthy food. Moreover, falling transportation costs, improved technology, and evolving international agreements are stimulating a substantial growth in the volume and variety of global trade of fruits and vegetables.

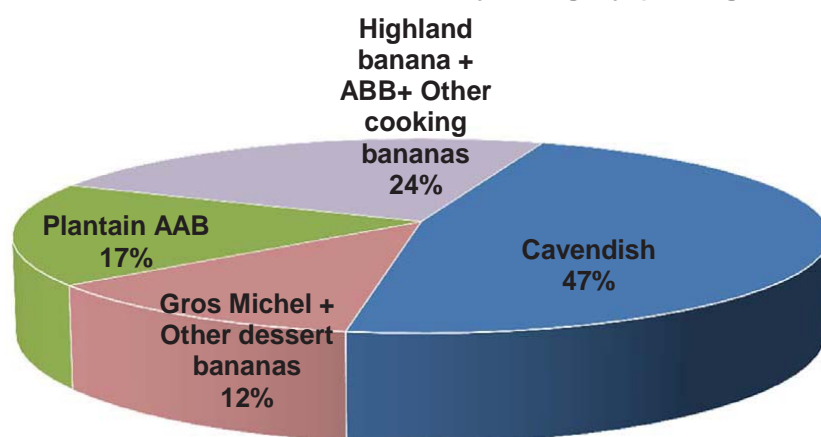
For developing countries, trade in these products has been attractive in the face of highly volatile or declining long-term trends in the prices of many traditional export products. Although many developing-country suppliers have entered the market, relatively few have achieved significant and sustained success, reflecting the fact that the industry is highly competitive and rapidly changing. Still, the aggregate picture is favorable.

Since the 1980s, international trade in fruits and vegetables has expanded at a higher rate than trade in other traditional agricultural commodities. Over the years, three regions, the European Union, the North American Free Trade Agreement area, and Asia (East, Southeast, and South), have remained major suppliers and consumers of agricultural products. A substantial share of their trade is intraregional, particularly that of the European Union. All three regions, however, depend on Southern Hemisphere countries in Latin America, the Far East, Africa, and the Caribbean for imports of juices and off-season fresh fruits.

An important and well-known agricultural product is banana. Latin America dominates the world market for bananas given that 7 out of 10 exported bananas are produced in this region¹. Bananas may be considered among the most well-known and popular fruits in the world. On average, each person in Europe eats 10 kg of bananas a year, which is about 100 bananas. Bananas are grown in more than 150 countries, and 105 million tons are produced per year. Fresh and processed fruit and vegetable products accounted for 16.7 percent of total agricultural exports from developing countries in 1980–1981. By 2001, this share had increased to 21.8 percent.

In general, cultivated bananas are often divided in two categories: dessert or sweet bananas, where the Cavendish subgroup is leading with a 47 percent share of global banana production (see Figure 5.1); they account for 43 million tons per year and are of huge economic importance for many countries in the South. Almost all bananas traded worldwide are Cavendish. The second category is the cooking bananas (plantains and others) account for 45 million tons; locally consumed bananas, which are also a staple food in many tropical countries, play a major role in terms of food security².

Figure 5.1: World Banana Production by Category (average 1998-2000)



Source: FAO Corporate

Description of the Sector

The banana is not a tree, but rather a high herb that grows up to 15 meters. Almost 1,000 varieties of bananas exist in the world, subdivided in 50 groups. The most common variety, the Cavendish, is produced for exports.

The banana value chain consists of the production, the logistics of exports and imports (with its different operations of ripening and retailing). Banana is considered the

1 <http://www.ers.usda.gov/publications/wrs0406>.

2 <http://www.bananalink.org.uk/allaboutbananas>.

fourth largest horticultural crop in the world with an estimated production of 55.2 million metric tons as of 2012. It is widely grown in countries in Africa, Asia, Europe, Oceania, Latin America, and the Caribbean. India is reported as the largest producer of bananas, accounting for about 20 percent of total world production in 2012. The production is intended mainly for their domestic market. Exports largely come from Ecuador with 31 percent (5.3 million tons) of the world total exports. Developed countries account for more than 85 percent of the world banana imports, and the United States is the main importer whose share amounts to 33 percent.

Retailers have an important role in the international banana trade. Conveying bananas from growers (plantations) to their destinations (shippers, ripening facilities, and consumers) requires a high degree of integration between all stages. This explains the involvement of multinational vertically integrated organizations in the international banana trade. Five large companies—Dole, Chiquita, Del Monte Fresh Food, Noboa, and Fyffe's—dominate the world export market (78 percent).

The banana industry has different operators from suppliers of input to consumers (see Table 1), but the market can be qualified as an oligopsony. This means that the number of buyers are few, even though the number of growers are many.

Table 5.1 Market Structure of the Banana Industry

Operators	Market Form
Suppliers of input and equipment	Few suppliers (oligopoly)
Producers/growers	Many (perfect competition)
Shipping	Few operators (oligopoly)
Marketers: importers/wholesalers/ripeners	Few wholesalers (oligopoly)
Retailers	Few retailers (oligopoly)

Source: Stichting Behoud Bananensector Suriname, May 2012.

Banana growers worldwide are highly dependent on suppliers of input on one hand and marketers on the other. These growers are maneuvered into a weak bargaining position, leaving them as price takers, while the marketers become price makers (Koenders, 2009).

To encourage the banana industry in Suriname, the State owned company Surland N.V. ("Surinaamse landbouwbedrijven") was established in 1971. Surland N.V. was later converted into SBBS ("Stichting Behoud Bananensector Suriname"). It is the only banana exporter in Suriname and exports to the European Union. The African, Caribbean and Pacific Group of States (ACP) banana-producing countries export around one million tons of bananas yearly, mainly to the European market. Suriname exported around 70,000 tons of bananas in 2011 (SBBS, 2012).

Objective, Scope, and Method of Paper

The objective of this research paper is to extensively describe the banana sector in Suriname. Since the SBBS is the only banana-exporting company in Suriname, in this paper this company largely represents the banana industry of Suriname. For purposes of analysis a scope of 40 years, from 1971 to 2011, is chosen because it generally provides a long unbroken series to allow for a good understanding of the banana sector. In some cases a different starting date is chosen due to the lack of statistics.

This paper seeks to provide a thorough overview of one of the main production sectors of Suriname. Besides a literature review, the analysis is supported by relevant sectoral and macroeconomic data.

This paper is organized as follows. After the introduction in which the importance of agriculture to the world is discussed, the next section highlights the historical background of the banana-industry in Suriname. This is followed by an overview of institutional issues affecting the banana sector. It discusses the relevant processes and legislations that are in place to stimulate the banana sector. The final section discusses the effect of the banana sector on Suriname's economy, with a focus on its influence on macroeconomic variables such as gross domestic product (GDP), employment, public finances, balance of payments and the international reserves. The paper ends with conclusions and policy recommendations.

Historical Background

The history of cultivation of banana in Suriname begins in 1905 when a total of 3,000 hectares of banana plantations replaced the then-existing cacao plantations. However, after only 5 years, banana production was made impossible by the Panama disease and the plantations were formally deserted by 1910 (SBBS, 2012).

Over the years there were some attempts to breathe new life into the banana sector, though without any success. This remained the case until the government decided in 1957 to set up a division of the Ministry of Agriculture, Animal Husbandry and Fishing ("LVV"), and put it especially in charge of the centralized purchase of bananas from individual farmers and the establishment of large plantations.

A second intervention was made by the ordinance of August 21, 1971, when the government incorporated existing plantations of Bacoven into one entity called Surinaamse Landbouwbedrijven N.V. (Surland). At first, Surland had four plantations in Saramacca, Nickerie, Santo polder and Boma polder. In the 1980s, Santo polder and Bomapolder were divested because they were not profitable and there was labor shortage.

Surland is a state-owned enterprise that initially was responsible for the production and sale of agricultural products, besides bananas. Surland in the course of its history had two export products, namely rice and bananas.

For almost 30 years, up to April 2002, Surland performed fairly well. But in the early nineties the banana industry became a low performance industry with a steady decrease of export volume from 40,000 tons a year in the 1980s to less than 30,000 tons in the 1990s.

The European Commission requested the twelve traditional banana suppliers of the ACP countries to present a strategic paper on the banana sector in order to identify the necessary actions to be taken for improving their competitiveness under free market conditions. The strategic plan for Suriname was formulated in June 1999 and was known as the JEXCO report.

According to the European Commission Council Regulation No. 856/1999 that followed, because of a World Trade Organization decision against the European Union banana regime, a Special Framework of Assistance program for the 12 traditional ACP banana-producing countries was established. A contract was signed with Sofreco, a French consulting company, for implementing a technical assistance program financed by the European Union, to design and implement a re-structuring program aimed at getting the sector able to compete on the European markets by 2005.

With continuous losses in production, decreases in the market price and internal problems, the financial situation worsened and led the company to bankruptcy. Surland closed its doors on April 4th 2002.

To restructure the banana sector and relaunch banana production independently from Surland, a new entity namely Stichting ter Behoud van de Bananensector Suriname (Foundation for the Restructuring of the Banana sector in Suriname), in short SBBS, was established in October 2002. A revised strategic plan for the restructuring of the banana sector, covering the period 2002–2006, was designed and adopted by the Council of Ministers on August 28th 2002 and endorsed in November 2002. The overall objectives of SBBS were to establish a sustainable and competitive banana industry in a liberalized world market by improving cost efficiency through increasing productivity and production quality. Also the financial support of the European Community was secured. The production operations were relaunched in June 2003; exports started in March 2004 and new marketing and shipping contracts were selected.

SBBS controlled nearly 95 percent of the banana-producing area with a capacity of 2,365 hectares. SBBS plantations are installed on two estates located in Saramacca, the Jarikaba estate and in Nickerie, the Nickerie estate.

Even though Suriname is near the Caribbean, South American, and North American markets, the country has a history of commercially exporting bananas to Europe.

The European Union market remains the most attractive one, mainly because its average export price is amongst the highest in the world, higher than in Eastern Europe, North America, and Japan market prices.

Also, the preferential agreements that the ACP countries had with the European Union gave them preferential access to those markets. These agreements have historically been framed by a series of conventions, starting as early as in 1957 with the establishment of European Economic Community. The best known of these conventions was the Lomé Convention, which granted unilateral preferences based on nonreciprocal basis, aid and trade and commodity protocols (Woelkens, 2004). Because of the substantial and direct effect on the banana industry in Suriname, the conventions will be reviewed in the section on institutional issues.

Surland exported to Europe under a marketing agreement with Fyffes, which also provided shipping facilities. On the domestic market the company did not sell bananas but its waste products were utilized for cattle breeding. Since its establishment in the 1970s, Suriname banana industry relied on its sole distributor Fyffes Company, which holds the monopoly of the Surland banana trade. The last agreement with Surland was signed on December 10, 1998, for a period of 5 years until December 31st 2003. Fyffes supplied all packing materials without charge, and organized the shipping service. Since January 1999, the EU-ACP licenses for Suriname have been transferred to Fyffes according to the new European Union regulation. The licenses on C-quota for Suriname fruit obtained by Fyffes are estimated at 32,000 tons. Fyffes also imported banana from other Caribbean islands such as: Belize, St Lucia, St Vincent and the Grenadines, Dominica and Grenada, making them very powerful in determining prices in this region.

Until 1999, banana was loaded from two locations, both Nickerie and Paramaribo. The shipping service was organized, owned and operated by Fyffes. After 1999, a bridge was built, allowing road transport and loading at one location, the New Haven port in Paramaribo.

Institutional Issues

The legal system of Suriname provides a framework for free private entrepreneurship, which is firmly embedded in the country's Constitution and other laws.

The legal basis for the production of bananas is stated in the ordinance of August 1970 when the government of Suriname transferred all existing government banana plantations into the state corporation, Surland N.V. The state held 100 percent of the shares of the company, divided into 99 percent shares owned by the government and 1 percent owned by the National Planning Office of Suriname. The management of Sur-

land consisted of a Board of Directors, appointed by the shareholders. This Supervisory Board appointed a general manager, assisted by a management staff, with the responsibility to ensure that the corporation's policy was implemented correctly. Surland conducted its business from two locations, the Jarikaba operation in the Saramacca district and the Nickerie operation in the Nickerie district. Surland³ was established with the two goals: planting and operation of large agricultural enterprises in Suriname, especially the banana culture; and purchasing, processing, and marketing of agricultural products.

Given that the primary objective of Surland was exporting bananas, this agricultural product was not sold on the domestic market. The legal basis for banana exports is the foreign exchange law, which is also applicable to all export business in Suriname. This law allows export businesses to transact their business on the basis of both a Surinamese dollar (SRD) account and a foreign currency account with a local commercial bank. The latter account requires a license from the Foreign Exchange Board. Subject to some general reporting regulations, there are no restrictions on transactions with relations abroad, once the required license is granted. Exporters are not obliged to sell their foreign currency proceeds to the Central Bank, but they need to be deposited into an account of a local commercial bank in Suriname.

Tax holidays may be granted for investment in capital goods. There is no branch profit tax or withholding tax on different kinds of transfers. An exemption from the payment of customs duties may be granted for the import of raw materials. The banana sector is exempted from sales tax or turn over tax based on the Sales Tax Code of 1997.

Overall banana exports from Suriname have been regulated under the aegis of the European Union banana regime which originated from various facets of special agreements negotiated between the African, Caribbean, and Pacific Group of States (ACP) countries and the European Union. These included the Lome Conventions (I–IV), the Cotonou Agreement, and the Economic Partnership Agreement. The European Union banana regime has a significant effect on the organization of banana production, trade, and competition.

Before 1992, Suriname and the other ACP member countries enjoyed nonreciprocal trading arrangements with the European Union partners (under the Lome Conventions, I–IV) whereby banana exports enjoyed duty-free access to the European Union markets subject to the ACP member countries respective export quotas.

The emergence of the single European market at the end of 1992 affected the ACP countries preferential access to European Union markets. Nevertheless, negotiations between the Caribbean ACP member countries and the European Union led to the latter agreeing to Caribbean countries' preferential access until the end of the Lome IV convention in 1999. From July 1993, a European Union banana regime was set up to

3 Statutes of Surland N.V., published in Governments advertisement journal of June 4, 1971.

give effect to this new provision for the Caribbean banana exports. Regulation 404/1993 set up importation quotas and customs rates which varied from 40 percent to 80 percent of a country's export quota according to origins as well as subsidies mechanisms for European Union member countries. However, in 1996, the World Trade Organization ruled that the Lome IV convention provisions were not compatible with World Trade Organization regulations, effectively ending the cross subsidies that had benefited ACP member countries for many years.

The Cotonou Agreement, which was signed in 2000 and implemented in 2003, replaced the Lome Convention which had been the basis for ACP–EU development cooperation since 1975. Under the Cotonou Agreement, the nonreciprocal trade preferences which the European Union provided to the ACP countries under the Lome conventions were replaced by a new scheme called European Partnership Agreements to take effect from January 2008. This new scheme provides for reciprocal trade preferences between the European Union and ACP member countries. By this, not only would the European Union member countries provide duty-free access to its markets for ACP exports, but the ACP countries (except the least developed ones) would also provide duty-free access to their own markets for European Union exports.

To help protect the small banana-producing states of the Caribbean from competing directly with bigger lower cost producing countries in the European markets, the European Community negotiated a separate banana protocol with the Caribbean states plus Dominican Republic (CARIFORUM), which also took effect from January 2008.

This provided a general and stable framework for the imports and exports of goods between the European Community and the CARIFORUM countries and is compatible with the World Trade Organization. The banana protocol allowed CARIFORUM countries and Suriname to benefit from a duty free and unlimited access of banana exports to the European Union market. However, the ACP preference margin was reduced by the World Trade Organization's Geneva Agreement between the European Union, the United States, and Latin America that banana producers signed in December 2009. That Agreement cut the tariff which the European Union then applied to the Latin American banana-producing countries from €176 per ton to eventually €114 per ton over a period of seven to nine years. At bilateral level an additional reduction was expected to take place from 2012 to 2020.

With the gradual erosion of trade preferences for the European Single Market, Surland experienced difficulties to compete. This forced the company to close in 2002. After the closure of Surland the government embarked upon a process of institutional reforms in the banana sector. It set up a new foundation to restructure the sector and to lay the groundwork for eventual privatization of the banana industry. The new company was called Stichting Behoud Bananensector Suriname (SBBS), or Foundation for the Preservation of the Banana sector in Suriname. The supervisory board was replaced by

a foundation board and was charged with the tasks to set goals, take decisions and appoint a general manager.

The main objective of SBBS is to establish a sustainable and competitive banana industry in a liberalized world market by improving cost efficiency through increasing productivity and production quality. According to the statutes, SBBS⁴ was established with the following goals:

- Developing initiatives to restructure and manage the privatization of the banana sector;
- The establishment of healthy structures for the exploitation of entrepreneurial culture within the banana industry;
- The relaunch of the banana company, gradually oversee its growth and promote the export of bananas.
- With the creation of a new banana company, the assets of Surland were sold to the new entity, SBBS, and the government as the sole shareholder contributed working capital.

Impact of the Banana Sector on the Economy

Banana is still an important industry for countries in Latin American and the Caribbean region, although in Suriname its economic importance has been overshadowed by the dominant mineral sector. The banana industry contributes to the export of goods, generates domestic income, and has linkages with other economic sectors. It provides jobs to inhabitants of the rural areas, where people often lack the skills or training to get employed in other sectors. Its importance extends beyond its direct economic contribution, as it also provides other indirect positive effects in Suriname in relation to food security (supplying the local market) and helping to feed animals in the life stock sector. SBBS is also involved in social activities through donations and education. The banana sector has much potential but also faces major challenges.

Effect on Employment

The banana sector has been a major employer in the agricultural sector in Suriname over a long period of time. The industry absorbed a steadily increasing number

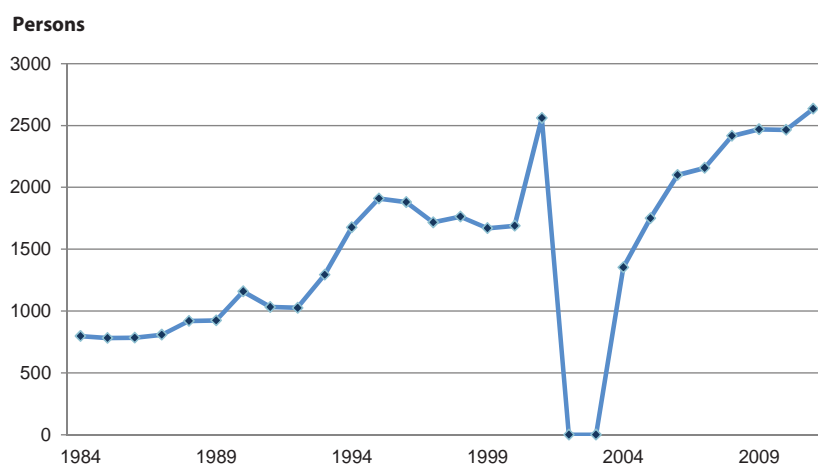
4 Statutes of SBBS, Statuutswijziging t.n. SBBS.

of employees from 1984 (approximately 800 persons) until 2001 (about 2,600 persons), achieving an average employment level of 1,355 persons per year, over the 18-year period. With the closure of Surland in 2002, all the workers were laid off but in 2011, only 8 years after the relaunch in 2004, the industry employed 2,650 workers (Figure 5.2). Relative to national employment, however, the sector's effect has been only marginal. It averaged from 1.5 percent (1991–1995) through 2.2 percent (1996–2001) to 2.4 percent (2006–2011). However, considering an average household of five family members, it may be inferred that approximately 13,250 people derived their sustenance from the banana sector in 2011. Moreover, there has been a significant improvement in human capital development within the banana industry and, with an average monthly salary of about US\$440 per month, salary and secondary facilities have been among the best in the banana-producing countries in the Caribbean.

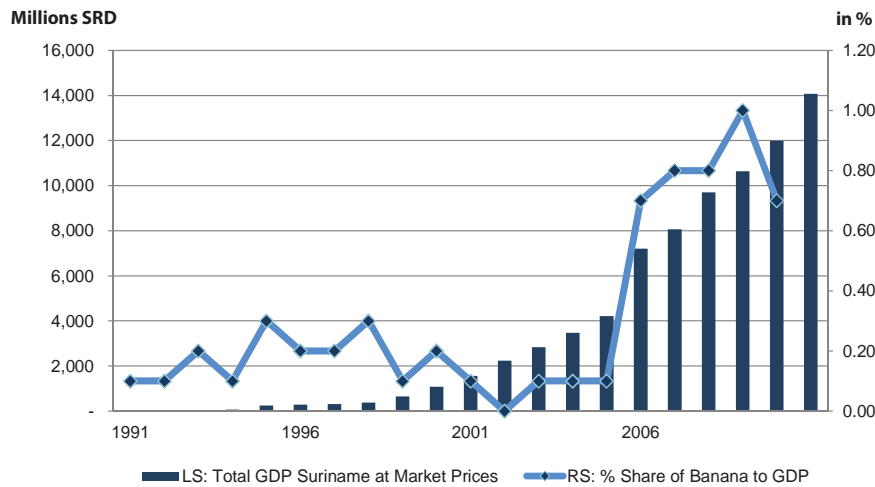
Effect on Gross Domestic Product

The banana sector is important for Suriname's economy. Over the 20-year period from 1991, output of the banana industry has represented an average of 0.3 percent of GDP. The banana industry had its highest output in 2009 with an estimated share of 1 percent of GDP and reached its lowest in 2002 with no contribution to GDP as a result of the closure of Surland (Figure 5.3). Therefore, in relation to GDP, the banana sector had only a minimal impact. As GDP increased in 1992, the share of the banana sector to GDP remained the same, and in 1993 as GDP decreased, the share of the banana sector increased.

Figure 5.2 Employment in the Banana Sector, 1984–2011

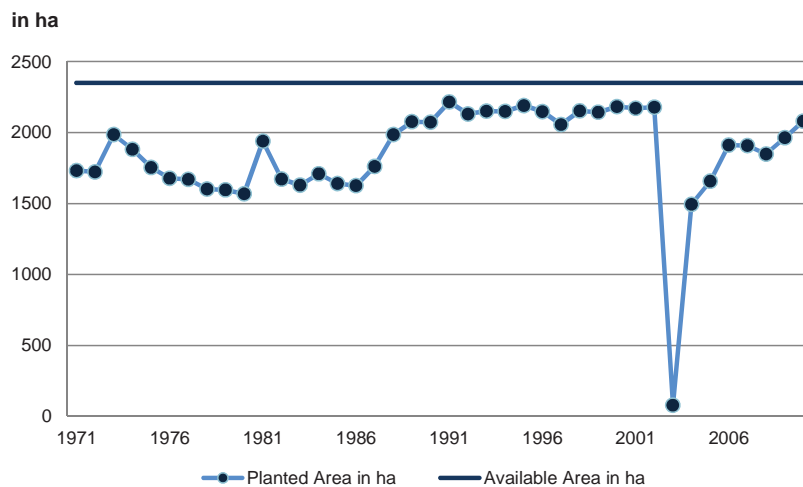


Source: Central Bank of Suriname

Figure 5.3 Percent Share of the Banana Sector to GDP, 1991–2010

Source: General Bureau of Statistics and Central Bank of Suriname.

Suriname has large agriculture production areas with agroecological advantages (optimal climatologic conditions, abundant water for irrigation, natural resistance against some banana diseases) allowing for more modern management methods and opportunities to expand. The SBBS' production activities take place in two separate production areas, the Jarikaba and Nickerie estates. The Jarikaba estate is located 30 km from Paramaribo, and covers 1,353 hectares of available land. In 2012, 958 hectares were in production. The Nickerie estate is located near the township of Nieuw Nickerie, 240 km north of Paramaribo. The plantation covers 1,012 hectares of land, of which 894 hectares are presently in production.

Figure 5.4 Production Area and Available Area, 1971–2011

Source: Central Bank of Suriname.

Banana production from 1971 to 2011 may be divided into three subperiods, beginning with the stretch from 1971 to 1988 (when Surland was formed) during which an average production area of 1,731 hectares was cultivated. From 1989 to 2002, the area of cultivation expanded markedly to more than 2000 hectares, with an average of 2,144 hectare planted area. After operations were resumed in 2004 under the SBBS, following the closure of Surland in 2002, there has been a steady increase in the production area encompassing an average of 1,838 hectares in only 6 years (Figure 5.4).

Table 5.2 Productivity Yield (in tons/ha)

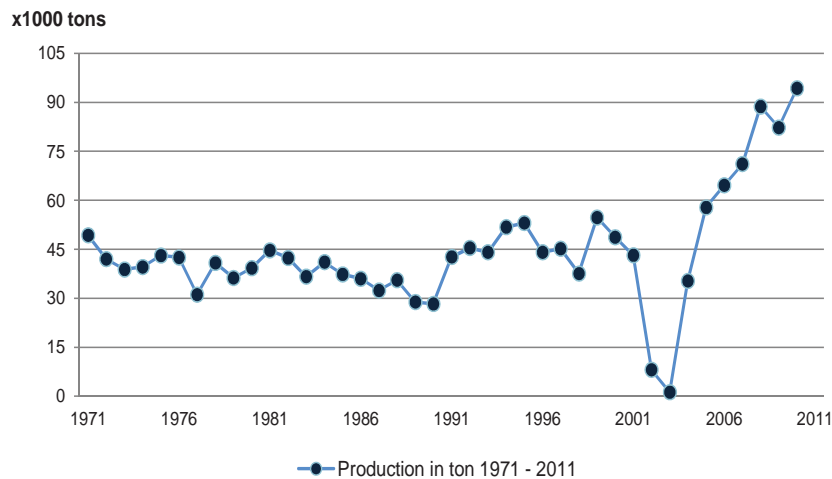
1971–2001	2004	2005	2006	2007	2008	2009	2010
20.5	23.6	34.9	33.8	37.3	48.0	41.9	45.3

Source: Stichting Behoud Bananensector Surinam, May 2012.

The productivity outturn in the Surinamese banana industry has generally been low when compared with other regional countries, but over the period of analysis, it has been trending upwards (Table 5.2). Productivity varied between 13.3 and 25 tons/ha (1971–2003), with an average that never went beyond 20 tons/ha. The average in other countries is usually between 40 and 60 tons/ha). This structurally low productivity translates into high cost of production. As a result, the banana industry steadily lost competitiveness.

Output and productivity trends improved markedly after 2004 with the help of a restructuring program and an European Union–sponsored investment initiative known as Special Framework of Assistance. This initiative was established for the 12 ACP suppliers of banana, taking into account the eroding preferences of the European Union banana regimes, to help producers remove the productivity gap and become competitive under free-market conditions. This involved financial and technical assistance over the period 1999–2008, financed by the European Union and it amounted to 22 million euros, out of which 19 million euros were dedicated to the investment program and 3 million euros to technical assistance.

Spurred by the technical assistance and investment program, along with the restructuring program that was put in place after the formation of SBBS, banana production accelerated from 41.2 thousand tons (1971–2001) to 70.6 thousand tons (2004–2010; Figure 5.5) and productivity doubled to 40 tons/ha on average (2004–2010).

Figure 5.5 Production (in tons), 1971–2011

Source: Central Bank of Suriname.

Despite the success of the Special Framework of Assistance program in raising output and productivity trends, the banana industry has accumulated large debts stemming from years of unprofitable operations. Over the past 26 years, the sector has accumulated US\$60 million debt (1985–2011), separated into 30 million in 16 years (1985–2000) and 30 million in nine years (2003–2011), amounting to 1 percent of GDP.

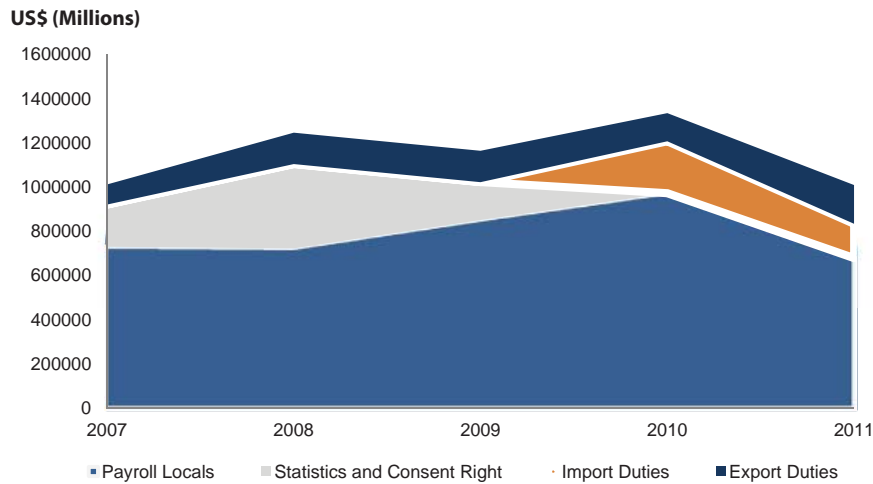
For the banana sector to have more impact on the economy as a whole, especially on GDP, banana producer, SBBS, needs to consider ways to improve competitiveness by producing more, reducing production cost and by adding value to their output. There are a number of ways this can be done: rationalizing the estates, privatizing SBBS, hiring professional management, adding value, changing the government's role into that of a facilitator and diversifying SBBS activity into the production of other products besides banana.

Effect on Public Finances

The banana sector contributes to public finances through direct and indirect revenues. Government income is obtained out of the different kind of taxes that SBBS pays and can be divided as follows: tax on profit; income tax (locals); fuel tax; sales tax and miscellaneous payments (statistics and consent duties, import duties, and export duties).

Although Surland also contributed to government income, information is not available for whole period of analyses; the data that is being analyzed, therefore ranges from 2007 to 2011. The biggest share comes from the payroll tax (Figure 6), 70 percent of all the taxes paid, amounted US\$800,000 on average a year. This is followed by statistics and consent duties, export duties, and import duties.

Figure 5.6 Government Income Components from the Banana Sector, 2007–2011



Source: SBBS, May 2012

Although the banana sector is in the process of reaching competitiveness at sustainable level, SBBS has not been able to operate profitably. Because of the continued losses from 1996–2011, the company did not pay any profit taxes, except for 2010⁵.

Table 5.3 Profits and Losses (in US dollars)

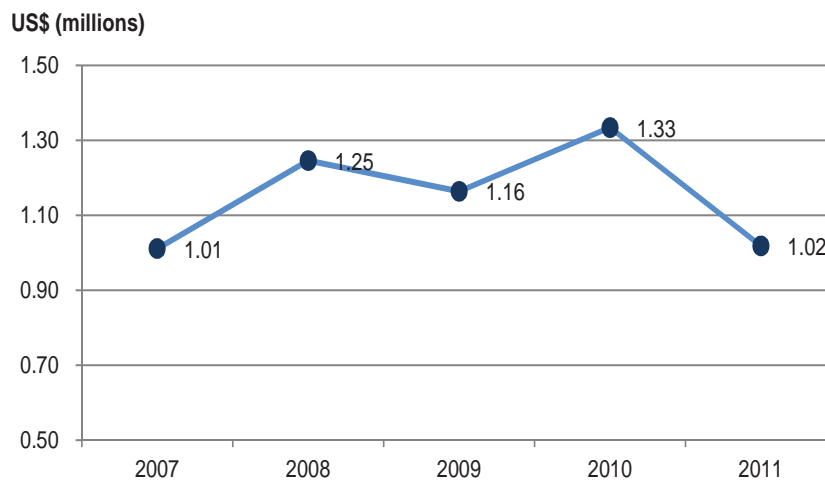
1996–2006 (average)	2007	2008	2009	2010	2011
-4,834,400	-1,947,657	-3,923,514	-989,321	3,830,313	-779,642

Source: Stichting Behoud Bananensector Suriname, May 2012.

The government income out of the banana sector is illustrated in Figure 7, showing that the banana sector contributed about US\$1 million directly (2007–2011) a year with a slight decline in 2011.

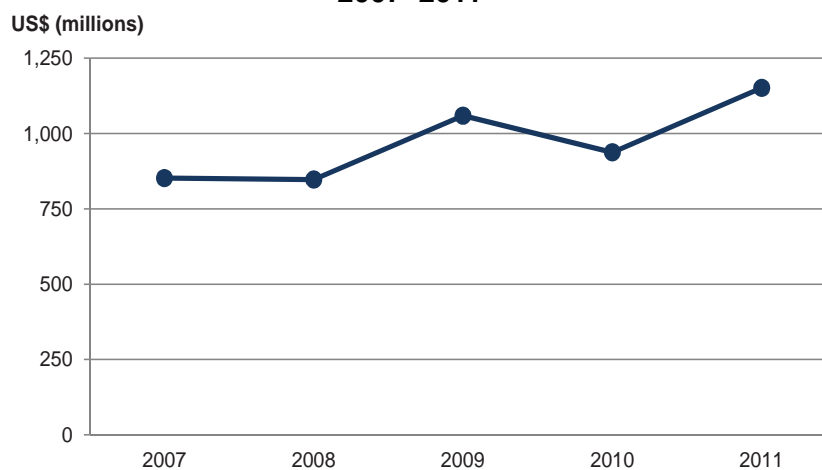
5 Fuel tax passed by the government as excise duty on gasoline price is not traceable from the statistics of SBBS. Similarly, sales tax is included in the purchases of goods and services and cannot be separately identified.

Figure 5.7 Total Government Income from the Banana Sector, 2007–2011



Source: Central Bank of Suriname.

Figure 5.8 Total Government Income, 2007–2011



Source: Central Bank of Suriname.

Table 5.4 The Share of the Banana Sector in Total Government Income, 2007–2011 (%)

2007	2008	2009	2010	2011
0.12	0.15	0.11	0.14	0.08

Source: Author's calculations.

Comparing this against total government income shows a share ratio between 0.08 per cent and 0.15 per cent. Although the direct contributions to fiscal revenues are marginal,

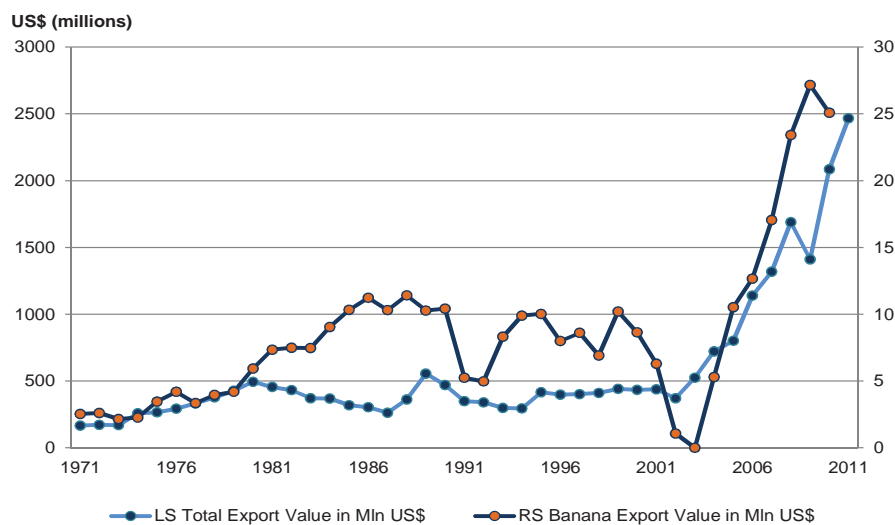
the spin-off impact on the overall economy has been noteworthy. It is estimated that other sectors linked to the banana industry produce approximately US\$10 million of goods and services, such as refrigerated transport activities of fresh fruit from Suriname to Europe. Some of other banana-related activities include the plastic and pallets industry, input suppliers, and transport companies. Therefore, it may be argued that the banana sector has contributed reasonably to the development of industrial and commercial activities and of the agricultural business environment in Suriname.

Effect on the Balance of Payments

Rice and bananas, the main export agricultural products of Suriname, account for approximately 76 percent of total agricultural production and about 96 percent of the total agricultural exports.

The total export value of bananas and the total export of Suriname are illustrated in figure 5.9. Banana is the fourth largest source of foreign currency earnings, contributing US\$25.1 million in 2011.

Figure 5.9 Export Value, 1971–2011



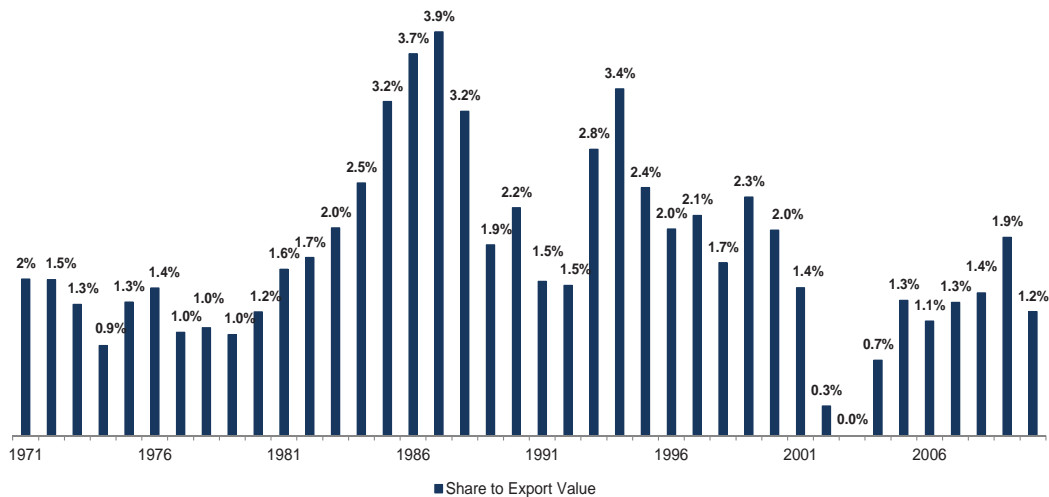
Source: Central Bank of Suriname.

Expressing this as a ratio of total export value suggests an average share of exports between 1 percent and 4 percent over the period 1971–2010, an average of 2 percent, excluding 2002–2004.

Before the closing of Surland, the export volume of bananas was between 23,000 and

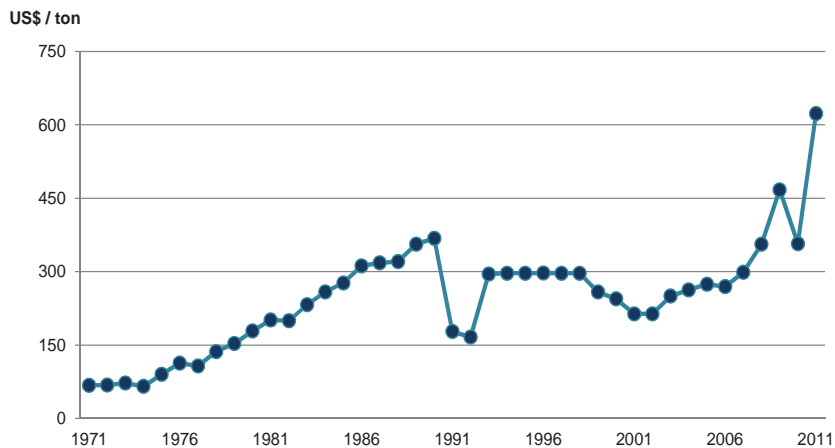
40,000 tons per year. After this period, with the re-entering of SBBS, bananas exports increased from 20,000 tons in 2004 to 70,000 tons in 2011 (Figure 5.9). The significant growth is the result of huge investment of US\$30 million in the banana industry through the Special Framework of Assistance program.

Figure 5.10 Shares in Export Values, 1971–2011



Source: Central Bank of Suriname.

Figure 5.11 Banana Export Price, 1971–2011

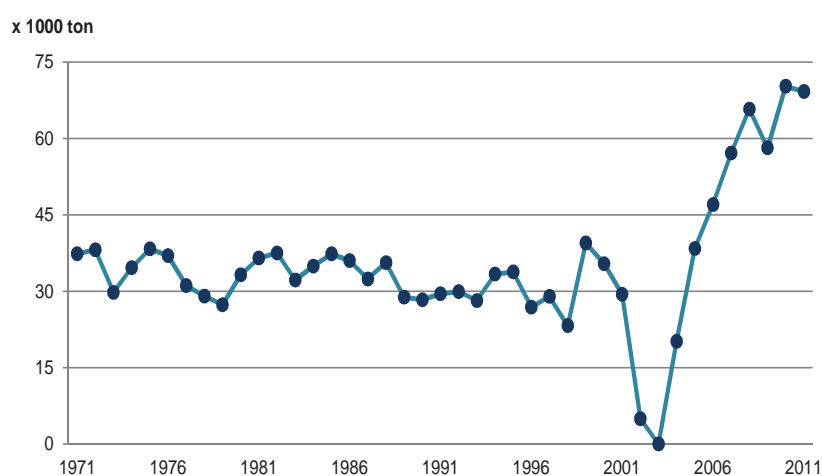


Source: Central Bank of Suriname.

These developments have had a negative effect on the performance of the banana industry. Because of the delicacy of the fruit, decisions had to be made quickly and were sometimes not in the best interest for the timely export of the product. There is also incoherence between the European Union trade policy and the European Union aid policy. On the one hand, European Union granted aid through the Special Framework of As-

sistance project of US\$30 million and on the other hand in the same period, the SBBS paid US\$15 million through licenses to retain access to the European Union market. Fortunately this is settled in European Partner Agreement (2008), where Suriname is benefitting from a duty free and unlimited access to the European Union market. Also, a new commercial contract with better pricing basis was set with 2 commercial marketers namely Agrisol and Compagnie Fruitière, resulting in an increased price of 1.2 euros/box from 2009 (Figure 5.10). The SBBS has diversified its export markets and 8 percent of its production was exported to Trinidad and Tobago at a profitable price in 2010.

Figure 5.12 Banana Export Volume, 1971–2011



Source: Central Bank of Suriname.

Conclusions and Policy Recommendations

Conclusions

Agriculture, especially the cultivation of fruits and vegetables, is gaining global importance, triggered by rising personal incomes and health-awareness.

This study aimed to describe historical and institutional developments in the banana industry in Suriname and its contribution to macroeconomic activities over the period 1971–2011. Activities in the sector have largely been spearheaded by public sector companies, namely Surland (1971–2002) and the SBBS (2002–present).

The analysis has revealed that the sector, though making marginal impact on GDP and public finances, has had a modest contribution to exports and employment,

because of the generally labor-intensive nature of the industry. Production in the sector contributed between 0.3 and 1 percent to GDP, while government income that originates from this sector were estimated to range between 0.09 percent and 0.15 percent. Also, the industry held between 1 and 3 percent of total employment while exports also contributed between 1 and 4 percent to overall national exports during the period of investigation.

Policy Recommendations

It is well-known that state-owned companies tend to be less competitive. Nevertheless, as was demonstrated during the period 2004–2011, significant productivity gains were achievable, once appropriate attention was paid to investment in banana-sector infrastructure, drainage and irrigation systems and improved work-place facilities. Also, given the labor-intensive nature of banana production and the fact that Suriname has a natural comparative advantage in producing the crop, it may be necessary to find ways to enhance its value beyond producing for exports. Value may be added through processes such as using the fruit for banana cake, juice extracts, banana flour, banana baby food or banana chips. Other ways through which production and competitiveness may be improved include the following:

- Rationalization of the SBBS estates;
- Privatization of SBBS;
- The hiring of highly skilled and experienced professional management;
- Changing the government's role into facilitating rather than producing;
- Encouraging private sector participation;
- Expanding export markets (for example to the region to counter the seasonal nature of the European markets and strengthen export values) and;
- Diversification to other fruits besides banana.

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- Diversification to other fruits besides banana.

Chapter

6

The Rice Industry in Suriname

Introduction

Rice, a cereal grain, is a staple food for more than half of the world population. In some cases, it contributes more than 70 percent of the human calorie intake. In some countries, rice is eaten in every meal during the day. As rice is usually grown for domestic consumption in most countries, a small percentage of the production (5 percent - 6 percent) is traded on the international market (Patent Lens, 2012).

It is presumed that rice was introduced almost 350 years ago in Suriname as a food source. From that moment on rice was cultivated, processed and consumed by different groups. Of all the different varieties available in Suriname it was the wet rice variety, introduced by the East Indians and the Javanese, which showed great potential and excelled to become the staple food of Suriname. But the development of this crop throughout the Surinamese history was not one of steady and constant growth.

The different forces that influenced the performance of the rice sector ranged from environmental, infrastructural, macroeconomic, political, social and international factors. At the beginning of the rice sector, the environmental and infrastructural issues challenged the stakeholders to increase their output. As the development of the rice sector progressed it became apparent that the political, social and macroeconomic environment had an equal share in determining the output of this sector. As a result, stakeholders developed different strategies to cope with the different issues at hand. The government, in particular, assumed different strategies and roles in order to develop the rice sector.

Objective and Scope

This paper focuses on the indicators, aggregates and citations of the rice sector to provide some information on the historical evolution of rice cultivation and production in Suriname.. The study aims to ascertain the possible driving forces behind the sector's development and its importance for the rest of the economy over the period 1955–2010.

Method

To obtain pivotal information, a literature review was conducted. The first phase was the identification of all available data and information “in-house”¹ and on the Internet. The second phase was to acquire the additional data using the snowball method, which consisted of several visits to relevant ministries, institutions and libraries and interviews with different sector specialists². The construction of a database, the evaluation of the gathered information and the reporting were all part of the last phase of this research paper.

To (re)acquaint the reader with the developments within the rice sector the institutional & historical developments of rice have been documented in the following section. This segment focuses on the different trends in the rice sector as deduced from the different data, citations and other sources. The section also discusses the factors that determined the different trends in certain periods. The next section assesses the economic impact that the sector has had on the economy over the period of analysis. In the last section some inferences derived from the study are presented.

Institutional & Historical Developments in the Rice Sector

The factors that influenced the production of rice ranged from investments, to macroeconomic developments such as volatility in export prices and the exchange rate. The policy of the government on the rice sector changed from centralized planning and support to centralized management of exports and local supply and ultimately to liberalization of the rice sector. But for a better understanding it is imperative to know that the institutional environment of the rice sector is not a set of cohesive rules, regulations and actions but it is an accumulation of ad hoc decisions (Suriname Business Forum, 2010).

1 This refers to the Central Bank of Suriname.

2 For an extensive explanation, please see Appendix 1.1.

The dynamics within the rice sector of Suriname can be revealed by assessing different consecutive time periods. The Anne van Dijk Rice Research Institute Nickerie (2009) distinguished several periods which were slightly altered as follows:

- Before 1900: The Introduction and Early Developments in Rice Cultivation;
- 1900–1949 : Rapid Growth in the Rice Sector;
- 1949–1974 : Further expansion of the Rice Sector;
- 1974–1992 : The Rise and Fall in Rice Production;
- 1992–2004 : Liberalization in the Rice Sector;
- 2004–2010 : Attempts to Revitalize the Rice Sector.

The Introduction and Early Developments in Rice Cultivation (Before 1900)

In all the citations regarding the cultivation and production of rice, it was not clear when rice was exactly introduced in Suriname. It is presumed that in 1664, Portuguese Jews from Brazil introduced this crop through Cayenne (Proplan Consultancy, 2006). In 1687, there was a mentioning of an export of 2 tons of rice to The Netherlands (Sital, 2002). Before 1780 there were dry rice crop cultivations in Suriname but Fred Oudschans Dentz stated that, as far as the record showed, rice was imported in 1780 from United States of America as food for slaves (Oudschans Dentz, 1931). Data from 1783 revealed that the export price of rice was two Surinamese guilders (Sf 2)³. In 1828 Hiemcke submitted a proposal to improve the overall agricultural production in the colony consisting of a proposal to replace the hack, spade, and shovel with the plow and harrow; and a proposal to stimulate the cultivation of rice and other crops.

In the first half of the 19th century, some very modest-scale farms were owned by some freed slaves and Maroons. Rice was cultivated on well drained peat soils in the coastal area or on newly cleared forest soils (slash-and-burn method) by the end of the dry season. The combination of the upland rice with the then existing technology made it possible to have three harvests in a year. The main harvest matured after four months and the first and second ratoons after three months. In 1880 a yield was recorded of 2,600 kg per ha for the main harvest. A field was sown every three years (Sital, 2002).

3 The author did not denote the quantity for which this value stood.

In the second half of the nineteenth century, Teenstra and Lans recommended the introduction of lowland rice (Sital, 2002) and proposed to experiment with large-scale farming in order to reduce cost and to offer a competitive price for exports. These plans were never executed due to external factors, namely the great economic difficulties in The Netherlands in the early nineteenth century (Sital, 2002).

In the last quarter of the 19th century, with the arrival of the East Indian and Javanese immigrants, lowland rice farming was introduced. These indentured laborers could cultivate this crop, mainly for their own consumption, during and after their contract period. Many Afro-Surinamese farmers started cultivating this crop around the beginning of the twentieth century.

Rapid Growth in the Rice Sector (1900–1949)

The real expansion of rice farming started in the last quarter of nineteenth century and carried through into the twentieth century (Appendix 1.2, Table 1). The drivers of growth of rice production were the increase of settlers, government support and the provision of technical know-how and experiments by the Agricultural Research Station, which was founded in 1903. The First World War (1914–1918) also strengthened the growth in output because the government imposed restrictions on food imports to deal with declining revenues from overseas. So, the scarcity of wheat flour primarily fueled the consumption of rice.

The growth in the production of rice carried through into the 1920s and the 1930s, where the government reported on the expansions in rice cultivation and the first signs of overproduction became evident. Suriname became a net exporter of rice, depending on the whims of a volatile rice market. Production kept rising until 1941 as more farmers entered into the cultivation of rice after being released from the plantations. Farmers also tried to increase their output in order to compensate for the decline in prices, which had been favorable in the period before 1931. During this period Government intervention was already evident in the form of setting minimum prices and banning exports of rice (Appendix Table A.6.2).

In the period 1941 to 1945, production declined as more laborers moved into bauxite mining and defense-related activities in the economy. Moreover, exports to Europe, the main market, were curtailed by the Second World War. Suriname did find new markets in North America, South America and in the Caribbean region but due to a shortage of shipping facilities, these opportunities were underutilized (Sital, 2002).

Further Expansion of the Rice Sector (1949–1974)

The planning phase, which lasted for more than three decades, started off with the Welfare Fund (1948–1954). The aim of this Fund with regard to the agricultural sector was to help acquire enough applied knowledge that could serve as a basis for the further development of the sector. The focus was primarily on improving the infrastructure of the small-scale farmers in order to boost their production (Centrale Bank van Suriname, 1982). In addition to the improvements of the infrastructure, some practical experiments were conducted. Large-scale mechanized farming was introduced by setting up the Prins Bernard polder and the Foundation for the Development of Mechanized Agriculture in Suriname, also called the Foundation for Mechanized Agriculture (Sital, 2002). At the end of the Welfare Fund, a report was drafted, which served as the basis for the Ten Year Plan. The rice sector was deemed to have a bright future provided that the infrastructure and cultivation methods were improved.

The Ten Year Plan⁴ (1955–1968) distinguished itself from its predecessor as being a well-designed and balanced plan with the first objective to ensure the provision of food for the growing population. The second objective was to create jobs for the growing labor force. The main measures were land remediation and reclamation, extension of credit to farmers, setting up of drying and storage facilities and the extension of information and education to farmers. The extension of credit to farmers boosted production, because farmers with insufficient collateral had access to credit. The drying and storage facilities improved the processing of paddy and offered the farmers, rice producers, exporters a place to trade (Centrale Bank van Suriname, 1982).

After the Ten-Year Plan, two consecutive Five-Year Plans (1968–1975) followed. These were different from the two prior plans as the focus was changed from small-scale farming to large-scale farming. The main argument was that the traditional farmer could not cultivate high standard agricultural products. The Multi Annual Development Plan 1975–1980 continued on the same path of the Five-Year Plans, in which the development of small-scale farming was almost entirely excluded (Centrale Bank van Suriname, 1982).

The planning phase, which was also a period of critical and diverse investments (1948–1980), marked significant developments in the rice sector. The objective of this phase was to increase production and to lower costs (improve efficiency). The main activities during this phase consisted of land reclamation and remediation, agricultural education and information, provision of credit for the agricultural sector, supplying of drying and storage facilities and the conduct of research in the rice sector. This sector underwent two major transformations. It shifted from a labor-intensive to a more capital-

4 That part of the Ten Years Plan that focused on agriculture and thus rice.

intensive sector and it was transformed from small-scale to relatively more large-scale farming.

During 1959–1986 the district of Nickerie became the dominant rice producing area in Suriname accounting for 83 percent of the total production (Sital, 2002). The reasons for the dominant position were (a) many farmers near Paramaribo took off-farm jobs; and (b) some innovations, such as tractors and large-scale farming, which were beyond the scope of the rest of Suriname, played into Nickerie's advantage in terms of production volume and efficiency.

During the Ten-Year Plan, the two Five-Year Plans and Multi Annual Plan the agricultural sector received Sf 130.6 million, of which Sf 31.9 million was directly allocated to the rice sector. The Foundation for Mechanized Agriculture, which was responsible for considerable parts of the production, conducted research that produced rice varieties well-known in Central and South America.

The Rise and Fall in Rice Production (1974–1992)

After a price hike in 1974 on the world market, prices for rice dropped rapidly in 1975. In order to hedge against the falling world market prices for rice, Suriname acceded to the Lomé Agreements in 1975 (Proplan Consultancy, 2006). The importance of this agreement stems from the fact that Europe was the main exporting market for Suriname for several commodities, such as rice. This agreement contained three concomitant measures⁵, namely a quota system, licensing and tariffs. First, the quota system had a strict benchmark for the exports of whole grain and broken rice to Europe per country. In total a maximum 145,000 tons could be exported in the case of Suriname. Second, apart from the country's quota, all exports had to be licensed. If and only if a licensed shipment fell within the quota, could Suriname export rice directly to Europe. These licensed rice exports to European markets were taxed but at preferential tariffs. The tariff on rice exports was not a fixed percentage. It depended on a basket price which was based on the world market prices for different rice varieties. If this basket price was low, tariffs could be partially exempted and in case of a high basket price tariffs could be increased. In general, the tariffs were 50 percent less than the tariffs applied to third parties (Agrotec SpA, 2003; Zalmijn, 2012)

Suriname had an additional duty-free way of exporting rice to Europe. Until 1997, Suriname exported rice to Europe without any quota through the overseas countries and

5 The measures were applied in a sequence, first the quota was set for each member country for a year. All shipment of the exporters within the quota had to be licensed. If and only if a licensed shipment was with the country's quota a preferential tax was applied.

territories of The Netherlands, principally The Netherlands Antilles. With these preferential conditions for rice exports, the rice sector steadily increased its production.

Although the conditions for rice seemed conducive between 1983 and 1994, the macro-economic climate of Suriname was a challenging one. The Inter-American Development Bank assessed the agriculture sector and outlined some factors that negatively affected rice and other agricultural production (Inter American Development Bank, 1997):

The maintenance of a chronically overvalued official exchange rate during the period 1983–1992 discouraged agriculture exports. The multiple exchange rate practices between 1992 and mid-1994 further deteriorated the incentives to produce. Export proceeds had to be exchanged against a lower official rate, while inputs, such as fertilizer, pesticide, and spare parts, had to be acquired at a higher nonofficial exchange rate;

Rapid inflation in 1994 adversely affected private investment of producers through confusing price signals;

The poor management of state-owned enterprises had a detrimental effect on the output of these companies. The boards of directors and upper management were mostly selected by virtue of their political affiliation rather than their technical capacities;

Strong labor unions were unhelpful to the “the health” of these state-owned enterprises. The labor unions could demand wages higher than productivities from these state-owned companies through strikes and this sometimes undermined the company’s strength to survive (solvency issues).

Apart from the prior mentioned issues, world market prices for rice were on a downward trend and in 1983 the Dutch Government suspended the extension of donor aid which financed the prior-mentioned planning phase. During this period it seemed that the small-scale farmers suffered less than the large-scale farmers due to the high service and maintenance costs in mechanized farming that the latter had to meet (Mohamed Lall S, 1993).

In 1980, it became clear to the government that it was losing some export earnings. There were several small rice exporters that were bidding against each other on the external markets. There was also a notion that the small rice farmers were cheated out of some benefits by the large rice traders who offered less than the minimum farm price. In order to solve these problems the government founded the National Rice Board. When the macroeconomic climate deteriorated and the government was confronted with de-

creased export revenues, the National Rice Board was converted into Surinamese Rice Exporting Company (founded in 1984, operational in 1985) as a limited liability company with the shareholders consisting of the government and the private sector (Ministerie van Planning en Ontwikkelingssamenwerking, 1989). This company had the monopoly on all rice exports until the liberalization of the rice sector in 1992.

The local supply of rice was managed by the Government through the imposition of maximum prices. These maximum prices were set to make primary commodities easily accessible and affordable for the population. This meant that the rice producers did not receive market-determined revenues for their rice.

The government also tried to increase efficiency through research. It established the National Foundation Rice Research Institute which was the successor to the Rice Research Practice. Both did not operate as expected due to a shortage of funds and expertise (Anne van Dijk Rijst Onderzoekscentrum Nickerie, 2009).

Though the government tried to turn the tide in early eighties, they ended up subsidizing the state-owned companies as well as the private entities in the rice sector. The infrastructure deteriorated and production capacity was underutilized. Production in the sector dropped.

Liberalization in the Rice Sector (1992–2004)

For the rice sector, production conditions reached an all-time low from 1992 to 1994 when the exchange rate was unified and the exchange rate regime liberalized. In 1997 a quota of 35,000 metric tons was set by the European Union for exports from the Dutch Overseas Countries and Territories; this ended the advantage that Suriname had for exporting rice tax-free via this route. But there were some indications after 1995 that the macroeconomic climate was improving. Suriname received donor aid from The Netherlands again; gold and crude oil were emerging as new sources of income for the local economy. Around that time the government adopted a structural adjustment program to improve the public finances and the overall economy.

The government liberalized the rice sector in 1992, which meant that rice exports were not monopolized by the Surinamese Rice Exporting Company anymore. Furthermore, the purchase of inputs, spare parts, and capital goods were liberalized as well. The mandatory surrender requirements of export proceeds were terminated. Exporters still had an obligation to keep their export earnings domestically but they did not need to exchange their foreign currency for domestic currency. The Government thereby retracted partially from the rice sector and focused its attention on control, research and support functions (Mohamed Lall S, 1993). One noticeable effect was that small-scale

farmers were pressured by the rice processors and exporters to sell at very low prices; another effect was that the exporters started bidding against each other on the export market, which lowered the maximum amount of revenues.

In addition to the aforementioned issues, the Foundation for Mechanized Agriculture came into financial difficulties in 1999 and around 2004 this foundation became bankrupt. In an attempt to utilize the land, the foundation was turned into Suriname Rice Operations which tried to lease patches of land to small rice farmers. This failed as well and a part of the estate was sold off to State Oil (the crude oil company of Suriname) for the production of sugarcane—a commodity for biofuel (Suriname Business Forum, 2010).

In this period, the government made an effort, through donor aid from the European Union, to revive the National Foundation Rice Research Institute. Its executing office, Anne van Dijk Rice Research Center Nickerie was founded in 1994. As the executing office, it was tasked with research in areas, such as breeding, crop management, post-harvest husbandry, communication and seed production, all with the objective to increase efficiency.

Attempts to Revitalize the Rice Sector (2004–2010)

Although the trends of the previous period were clearly visible for a greater part of this period, there were some clear efforts of rejuvenation in the rice sector. Evaluations were made in several reports⁶ regarding the rice industry in Suriname. These studies focused on different topics, but ultimately the main conclusions were almost uniform (Agrotec SpA, 2003). Some of them were as follows:

The infrastructure, such as drainage and irrigation, for the production of rice was deplorable;

- The infrastructure, such as drainage and irrigation, for the production of rice was deplorable;
- Lack of efficient seaport for the exports of rice;
- Lack of management to establish equitable benefits for the sector;
- Scarcity of credit for the sector;
- Insufficient investment to promote innovation and industry integration;

6 Recessie in de rijstsector: Prognose Voorjaar 1994; 2) Revitalizing Agriculture in Suriname; 3) Feasibility Study of the Cariforum Rice Industry.

- Lack of diversification in markets and high dependence on the European market;
- Shortage of skilled laborers in the sector;
- Lack of Quality Management Standards.

However, with the drafting of the Agricultural Sector Plan in 2004, the willingness to reinvest in the agricultural sector of Suriname reemerged. The donors were The Netherlands, European Union and Inter-American Development Bank. In this period Anne van Dijk Rice Research Institute Nickerie received institutional strengthening support. The revival of the Multipurpose Corantijn Project and rehabilitation of the Wakay drainage infrastructure were executed. Furthermore, credit was extended to farmers through an investment facility. The infrastructure of the polders was rehabilitated and the waterboards that were set up in the 1930s were revived. All these together had a noticeable effect on rice which will be discussed in the next section.

An amount of €46.2 million was reserved for the revival of the agriculture sector, of which €9.9 million was to be extended to agricultural production companies (Projectteam ASP, 2004). An amount of €19.2 million could be directly linked to the rice sector (ASP, 2004). Under a regional agreement with the ACP, the European Union extended aid up to €24 million to the Caribbean Forum of African Caribbean and Pacific States. Suriname directly received €9.2 million out of this agreement for technical assistance, training and seminars, water rehabilitation and financing purposes (European Commission, 2003). Most of these investments were merely to rehabilitate the deteriorated infrastructure. The notion is that actions at that time were merely an attempt to restore the old capacity and not to increase it (Ramautarsingh, 2012).

In 2002, the African Caribbean and Pacific States entered the Economic Partnership Agreement. The rules that controlled commodity exports to Europe changed. Suriname obtained free exports of rice to Europe which acted as stimuli for the local market (Agrotec SpA, 2003). A National Rice Plan was introduced in 2006, subsidies were extended to Anne van Dijk Rice Research Institute Nickerie and the Anton de Kom University of Suriname for research and there was an exemption from export tax for the rice sector (Centrale Bank van Suriname, 2007). Also rice farmers received restitution on diesel as a compensation for the higher domestic fuel prices and a credit facility was set up for farmers with the Agriculture Bank. In this period some of the infrastructure for the cultivation of rice, such as the Multi-purpose Corantijn Project, Corantijnkanaal and Sawmillkreekpolder, were rehabilitated (Centrale Bank van Suriname, 2008). Increased world demand for rice in 2008 caused world market prices to rise (Centrale Bank van Suriname, 2010) which resulted in higher exports and, in turn, provided incentives for higher rice production.

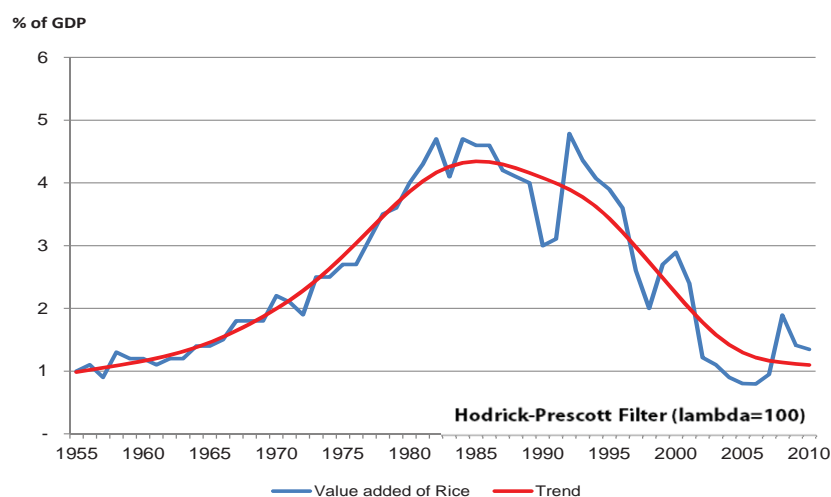
Effect on the Economy

This section focuses on the effect of the performance of the rice sector on key macroeconomic aggregates. Though this sector is one of the oldest in Suriname and government's involvement has been evident even from the beginning, the compilation of the relevant statistical aggregates on the sector has been inadequate. The string of data for most of the indicators differs in scope or by source. For instance, in some cases data dates back to 1955 in a continuous series, in others they are discontinued or non-existent⁷. Despite these challenges, an attempt has been made in this section to provide an understanding of how rice production, exports, and employment relates to the rest of the economy.

Value Added⁸ and Production

The value added between 1955 and 2010—in Figure 6.1—was as low as 0.8 percent of GDP (in 2005, 2006 and 2007) and as high as 4.8 percent of GDP (in 1982, 1984 and 1992). The average share to GDP was 2.5 percent over the 55-year period. More distinctively, the trend component in the value added grew steadily in the period 1955–1985 by 12.0 percent. In the subsequent period 1985 to 2000 it gradually declined by 13.2 percent. The cyclical deviation in the period 1955–1985 seems to be less volatile relative to the second period. A possible explanation is that the first period was marked primarily by investments, planning and seemingly stable macroeconomic climate, whereas the second period was characterized predominantly by macroeconomic instability, deterioration of infrastructure and lack of investments.

Figure 6.1: Value Added of the Rice Sector



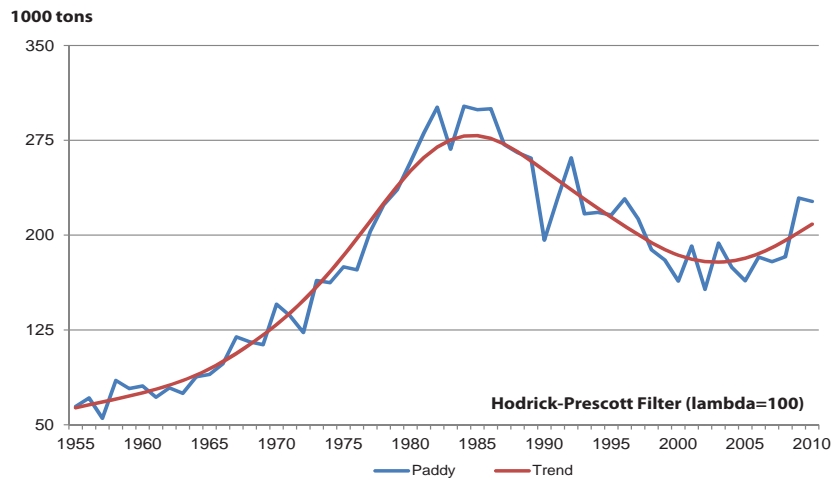
Sources: Central Bank of Suriname; General Bureau of Statistics; Sital, 2002.

7 For an extensive explanation, see Appendix 1.1.

8 For an extensive explanation, see Appendix 1.3 .

The value added in the rice sector follows a similar trend to that of paddy production (see Figures 6.1 and 6.2). In the period 2001 to 2010, a recovery is visible in the trend of paddy production which is not visible in the share of value added of rice to GDP. Though the value added of rice grew in real terms, the growth of other sectors, gold and crude oil, in Suriname's economy was far greater. An assessment of the production within the rice sector is a necessary complement to the trend in the value added.

Figure 6.2 Production of Paddy



Sources: Central Bank of Suriname; General Bureau of Statistics; Sital 2002.

An analysis of the production of dry paddy, the cultivated area and the yield per acre from 1955 to 2010 revealed an overall increase in these aggregates. On average, the cultivated area (Annex, Figure A.6.2) increased by 2.6 percent annually over the entire period of 55 years from 22,200 ha to 53,500 ha. The production of paddy grew on average by 4.6 percent annually over the same period, from 64,500 metric tons to 226,600 tons. The yield per acre (Annex, Figure A.6.1) also improved annually as well throughout the whole period by 0.8 percent from 2.9 ton per acre to 4.2 ton per acre. In general, three periods may be distinguished based on the movement in the three aggregates.

Between 1955 and 1986, an increasing trend is evident in the aforementioned aggregates, despite the volatility. The cultivated area showed an annual average increase of 7.4 percent during this 32 year period. On average, paddy output increased by 11.4 percent each year. The difference in growth rates can be partially explained by the yield per acre, which increased by 1.2 percent⁹. Both cultivated area and paddy production benefited from government investment and improvement of the world market price for rice after 1973 (Annex, Figure A.6.3). The years 1957, 1972 and 1983 showed significant drops in cultivated area, paddy production and in the yield per acre. For 1957 and 1972

9 The changes in the yield is often related to the information and skills level of the farmer, the access to technological innovations within the sector and institutional support (Fischer, Byerlee, & Edmeades, 2009)

these aggregates were affected by drought. For 1983, no explanation was provided in the available citations, but probably the suspension of the Dutch Development Aid at the end of 1982 hampered the financing of the sector temporarily.

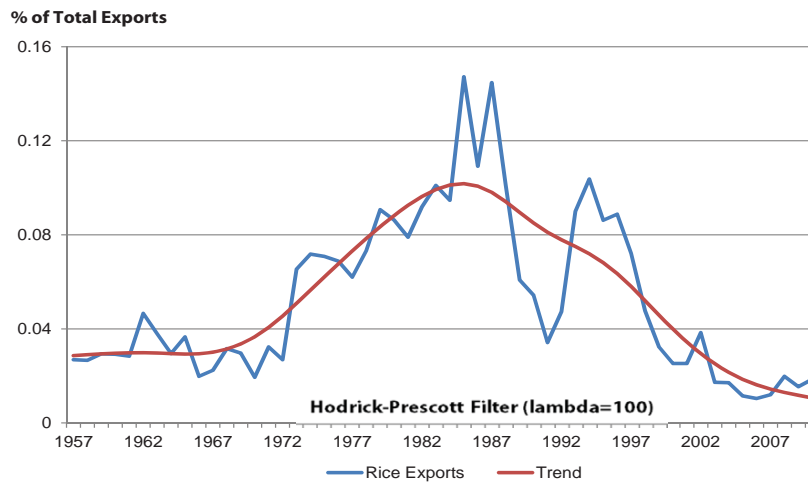
From 1986 until 2000, there was a drop of 41 percent in cultivation area. Paddy production fell by almost 40 percent. Annually, these two indicators decreased by almost the same average, of nearly 1 percent. The yield per acre was very volatile, and slightly declined by 0.2 percent annually over the stretch of this period. The decline in cultivation and production can be attributed to external factors rather than internal factors of the rice sector. The macroeconomic climate during this period was very unstable (see Appendix A.6.3) and the world market prices for rice were declining, nevertheless on average the efficiency within this sector within this period did not seem to decrease. In 1990, there was big drop in paddy production as a result of shortage of fertilizer and pesticide (Centrale Bank van Suriname, 1991).

The period 2001–2010 showed slight recoveries in terms of the cultivated area, paddy production and the yield per acre. The annual changes for these indicators were 0.6 percent, 1.9 percent and 1.2 percent, respectively. What is remarkable is that the cultivated area grew at a slower pace than paddy production. The difference in growth can be partially explained by the yield per acre, which benefited from the reinvestment in infrastructure, research and cultivation method. The macroeconomic conditions were more favorable in comparison with the previous period (see Appendix A.6.3). In addition, the exports to Europe were under a new agreement and the development of the world market prices could have acted as an incentive. In 2009 there was a drastic increase in cultivated area and paddy production, which was fueled by a rise in world market prices.

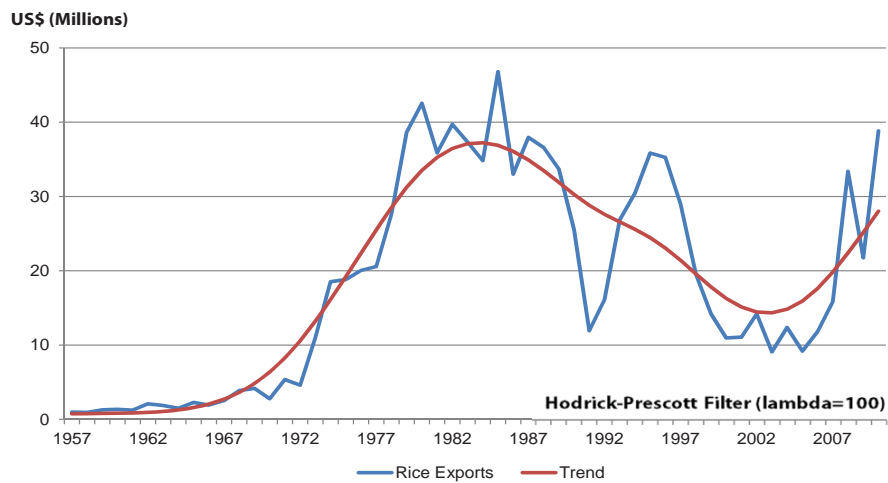
Exports of Rice and Rice Products¹⁰

The annual average share of rice exports in total exports during 1957–2010 was 5.2 percent (see Figures 6.3 and 6.4). But similar to paddy production there are three trends visible as well. The three periods are distinguished by an inclining trend (1957–1985) up to a 14.7 percent share in total exports, a declining trend (1986–2006) toward a 1.0 percent share and seemingly stable period after 2006. The recovery of the share in total exports after 2006 did not pick up as rapidly as the exports themselves. An explanation is that the export shares of other sectors (the mining sectors) have grown more rapidly than that of rice. Viewing the series over time, one can conclude that this ratio followed more or less the same pattern as rice exports.

¹⁰ For an extensive explanation, see the Appendix.

Figure 6.3 Ratio of Rice Exports to Total Exports

Sources: Central Bank of Suriname; General Bureau of Statistics;
Ministry of Agriculture, Animal Husbandry and Fisheries.

Figure 6.4: Rice Exports

Sources: Central Bank of Suriname; General Bureau of Statistics;
and Ministry of Agriculture, Animal Husbandry and Fisheries.

The value of rice exports increased from US\$980,000 in 1957 to US\$38.8 million in 2010 (see Figure 6.4). This annual average increase may be attributed to increases in export quantities and prices. The quantities traded on the export market increased by an average of nearly 19 percent annually over the 54 year period from 8,100 tons to 89,400 tons (see Figure A.6.4). The price per ton increased from US\$121.39 to US\$434.21 over the same period, which is an average increase of 5 percent per annum (see figure A.6.3).

The dynamics of these aggregates shows three periods with different trends. The first distinct period 1957–1985 is characterized by a steady increase of the export value of rice. This growth was fueled by the growth in export quantities (47.4 percent) and prices (7.6 percent). The export prices peaked in 1974 (Annex, Figure A.6.3) reflecting some demand and supply pressures on the international market for rice. These pressures were caused by the 1973/74 a sharp increase in oil prices through measures taken by OPEC, world economic recession, a natural disaster in India and political turbulence in the Middle East (Southwest Farm Press, 2008). During 1975–1985 the prices were mostly determined by the preferential market access conditions in the Lomé agreements between the African, Caribbean and Pacific States and the European Economic Community. Both export volumes and prices increased during the same period.

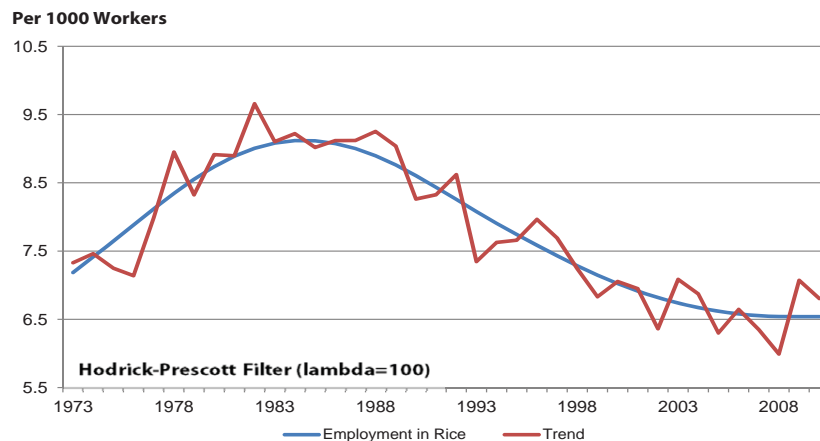
The second distinct period, 1986–2005, predominantly showed declines in prices and volumes. The export value fell by 72 percent during this period to reach a value of US\$9.1 million in 2005. This is a value that was surpassed more than three decades ago in 1973. Export volume declined by 64 percent, while export prices decreased by 24 percent over a period of twenty years. The downward trend in prices was determined by the changes in the agreements with Europe regarding the preferential treatment and international prices. As a consequence of these external factors, a reduction in paddy production followed. In 1990 there was a sharp decline in export value which was caused by a drop in paddy production due to shortage of fertilizer and pesticide (Centrale Bank van Suriname, 1991). In the period 1991–1993, there was a notable recovery in export earnings which was in part determined by the upswing in export prices of rice. In 2003 there was a significant drop in export value and quantities of rice owing to issues in the main export markets. The European Union demanded that part of the import tax had to be paid upfront and Jamaica started importing rice from the United States because of price differences (Centrale Bank van Suriname, 2004).

In the third distinct period, 2006–2010, there was a noticeable recovery of the export value which increased annually by an average of 45.7 percent. Export quantities increased on average by 23.1 percent annually and prices rose by an annual average of 10.4 percent. The export prices were for a greater part influenced by higher world market prices for rice, which peaked in 2008. The spike in world market prices for rice in 2008 was fueled by an increased world demand for agricultural goods, such as wheat and corn. As a substitute product, the demand for rice increased which fueled the increase in the world market price of rice (Food and Agriculture Organization of the United Nations, 2011). The decline in the production of paddy preceded the lower export volumes.

Employment in the Rice Sector¹¹

The trend of employment within the rice sector follows somewhat the trend of the production of dry paddy, value added of rice and export of rice products. Over a 37 year period (1973–2010) on average 7,811 employees worked in the rice sector. In 1982 employment reached its peak, while in 2008 employment was at its lowest point.

Figure 6.5 Employment in the Rice Sector

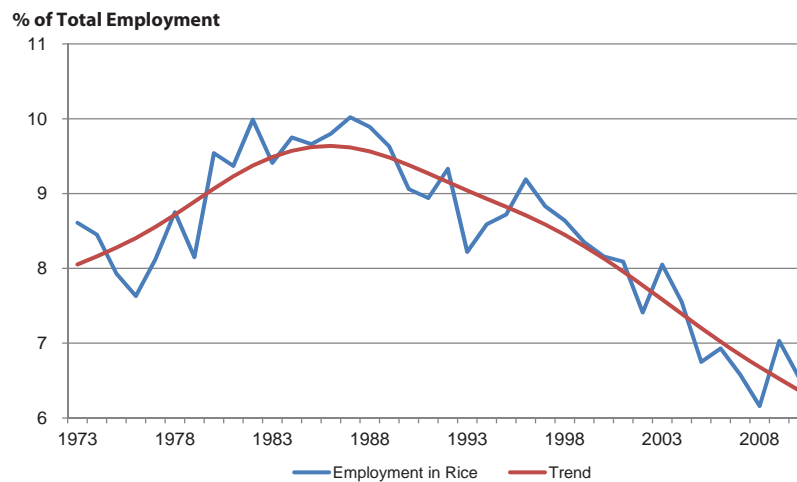


+Source: Algemeen Bureau voor de Statistiek.

The period 1973–1984 marked an upward trend of laborers entering the rice sector which reached its peak in 1984. From that point on the trend steadily declined until 2005 where it leveled off in the subsequent period. In the period of the upward trend on average 158 workers entered the sector annually, whereas in the period of the down-ward trend employment declined on average by 133 workers. In 1976 and 1993 the deviations from the trend were very high largely attributed to the drop in export prices for rice. The situation in 1993 could be attributed to the macroeconomic climate as described previously. The employment trend in rice follows the same downward trend as for general agriculture, although periods of significant cyclical deviations occur somewhat.

Over 57 percent of employment in agriculture is generated in the rice sector. The declining trend of employment in agriculture in the period under consideration suggests that other subsectors in agriculture were also confronted with employment losses; perhaps to the emerging sectors in the rest of the economy (Annex, Figure A.6.5). This is the reason why the share of the rice sector with regard to employment in the agriculture is increasing over time (Annex, Figure A.6.6).

11 For an extensive explanation, please see Appendix 1.5

Figure 6.6: Employment of the Rice Sector in percent of Total Employment

Source: Algemeen Bureau voor de Statistiek

With regard to the total economy the employment trend in the rice sector seems to keep the same pace until the year 2000. The difference in the period after 2000 stems from the development within other sectors of the economy such as job increases in the mining sector (Annex, Figure A.6.7).

Conclusions and Policy Recommendations

Conclusions

This paper has examined trends in the pattern of production in Suriname over the period 1955–2010. Three production phases have been identified, each characterized by distinct macroeconomic trends.

The first period showed a steady growth in value added, output, exports, and labor indicators recording the highest value over the entire research period. Evident in this period were the investments in the sector through consecutive development plans. Also the government displayed an active role in the investments, research, marketing and even production of rice. The availability of funds for the sector and the macroeconomic climate added to the progress of this sector as well.

The second period displayed a steady decline in value added, output, exports, and labor indicators as it was marked by macroeconomic instability. The loss of funds through reduced donor aid was a principal factor for the negative pattern witnessed in the

rice sector. The macroeconomic instability and the loss of donor aid affected the earnings of the stakeholders, their willingness to invest and the maintenance of infrastructure for rice production. Government actions did not seem to have any positive influence on this sector. Though indicators displayed a downward trend, the yield per acre remained relatively stable.

The last period revealed a set of mixed results. Paddy output, yield per acre and exports quantities seem to have recovered slightly, while value added and the share of rice in total exports seem to have remained constant. The share of the workforce that can be attributed to rice remained on a declining trend. Through investments by the government in infrastructure and the improvement of the macroeconomic climate, there was a slight recovery in the key aggregates of the whole sector.

Policy Recommendations

All stakeholders in the Rice Sector will have to re-adopt a planned development approach as this has proven in the past to be the most effective method for the rice sector. The coordination with regard to production, processing, research, marketing, policy and funding, needs to be centralized and improved. The funding (either by donor aid or else) should be expanded according to the setup of development plans.

Incentives and Subsidies for stakeholders should be utilized as a tool to hedge against macroeconomic instabilities. Centralized Marketing and Sales of rice might offer stakeholders a fair distribution of value added which can help during troubled times.

Appendix

The Limitations of this Study

This research will not provide an in-depth analysis of political, social and demographic issues that were apparent during the period 1955–2010. No technical and entrepreneurial aspects of cultivating, processing and marketing of rice will be discussed. This research was constrained in many ways, including issues such as the availability and quality of data, the accessibility to data and even the lack of cooperation by institutions and key-persons.

To analyze the rice sector, it was necessary to gather information on output, value added, exports, government income from the rice sector, government expenditure and subsidies to the rice sector, employment, extension of credit to the rice sector, donor aid and investments. Most of these data are not available. The data series for some of the variables, such as credit to the rice sector, are incomplete, discontinued or too short for analytical purposes. Some of the data have been recorded, but are not available to the public. Apart from the output and export data all other series are incomplete.

Information is scattered among the active and inactive institutions in the rice sector, making it difficult to obtain consistent data, especially information of the inactive entities. It was next to impossible to obtain enough reports and other citations, which presented the events, the drivers and the forces in chronological order. Most of the reports evaluated the agriculture sector as a whole and there were only a few reports that focused solely on the rice sector. The reports that did assess the rice sector mostly focused on the technical and entrepreneurial aspects of cultivating, processing and marketing rice. Any discussions on macroeconomics issues were limited to production and exports. Conducting interviews with key persons and relevant institutions was in some cases impossible and in other cases very cumbersome.

The overall effects were that the ability to really get to the crux of the different aspects in the rice industry was limited and significant time was lost trying to obtain adequate information and data. The latter really affected the time left for conducting in-depth analysis. In the end inferences regarding government expenditure on subsidies and revenues, extended credit, investment, active enterprises and donor were excluded from this research.

Output and Farm Prices of Paddy

Table A.6.1 Output of Rice in Suriname, 1887– 1947

Rice output in 1,000 kg														
Year ^a	1887	1892	1897	1902	1906	1910	1915	1917	1919	1937	1938	1939	1940	1941
Output	10	24	134	374	1,496	1,994	5,300	5,338	13,066	21,213	23,247	24,541	19,239	30,034

Sources: (Sital, 2002) and (Rooy de, W; Schaaijk van, M., 2002)

Discontinuous series

Table A.6.2 Farm Prices for Paddy in Suriname, 1914–1941

Prices per kg in Sf			
Year ^a	Lowest Price	Highest Price	Average price ^b
Before 1914	0.05	0.07	0.06
1916–1919	0.10	0.14	0.12
1929	0.06	0.13	0.09
1930	0.03	0.07	0.05
1931–1941	0.01	0.05	0.03
1941 ^c	0.03	0.03	0.03

Source: (Sital, 2002) ^a Discontinuous series

^b Arithmetic mean ^c Minimum price set by the government.

Value Added for the Rice Sector

The General Bureau of Statistics provided time series on the value added of the rice sector in percentage of GDP at market prices from 1990 until 2010. The value added for the rice subsector comprises the sum of value added in agriculture and manufacturing. Longer time series for the GDP at market prices and the value added of the rice sector are not available. This limited the ability to make inferences in this paper regarding the long-term trend with regard to the rice sector.

The provided series themselves raised some questions. The figure of 1990 (0.5 percent), 1993 (14.2 percent) and 1994 (6.9 percent) were excluded from the series because it did not seem reliable. By applying interpolation in Eviews these years were estimated to correct the value. For the period 1955–1989 the percentage changes in the paddy production (in metric tons) were used to calculate the missing value added of the rice sector.

$$VAR_{t-1} = \frac{VAR_t}{1 + \left(\frac{PQP_t}{PQP_{t-1}} - 1 \right)} \quad (1)$$

where VAR = value added of rice, PQP = production quantity of paddy, and t = year. The changes of paddy production served as reference values for the interpolated series of value added of the rice sector, assuming a close relationship between these aggregates.

Exports of Rice and Rice Products

When analyzing an export commodity, it is important to assess the effect of this commodity on the current account and thus the balance of payments. In this paper a constraint has to do with the lack of data regarding the imports of fertilizer, pesticide and capital goods for the rice sector. As a consequence, the assessment of the effect of the rice sector on the balance of payments (current account) has not been conducted.

Estimates could provide some insight into the dynamics of this effect, but these estimates should be founded upon reliable assumptions and sound logic. These requirements did not present itself during this research.

Employment in the Rice Sector

During this research, statistics on employment in the rice subsector were not available. Several citations, written in the late 1980s and early 1990s, make mention of 8,000 workers in the rice sector. The foundation of this estimate is absent in these articles.

To analyze the development of employment within the rice sector, a series was estimated over the period 1973–2010. To estimate the series, an assumption was made that de gross labor productivity of the agriculture sector as a whole is equal to that of the rice subsector. The production of the paddy in tons was then divided by the gross labor productivity. The gross labor productivity in this paper is defined as the total quantity produced (in metric tons) in a year within a sector divided by the total of persons employed within the same sector within the same year.

$$GPA_t = \frac{PQA_t}{EA_t} \quad (2)$$

where GPA = gross production in agriculture, PQA = production quantity of agricultural sector, EA = employees in the agricultural sector and t = year.

$$ER_t = \frac{PQP_t}{GPA_t} \quad (3)$$

where PQP = production quantity of paddy and ER = employees in the rice sectors.

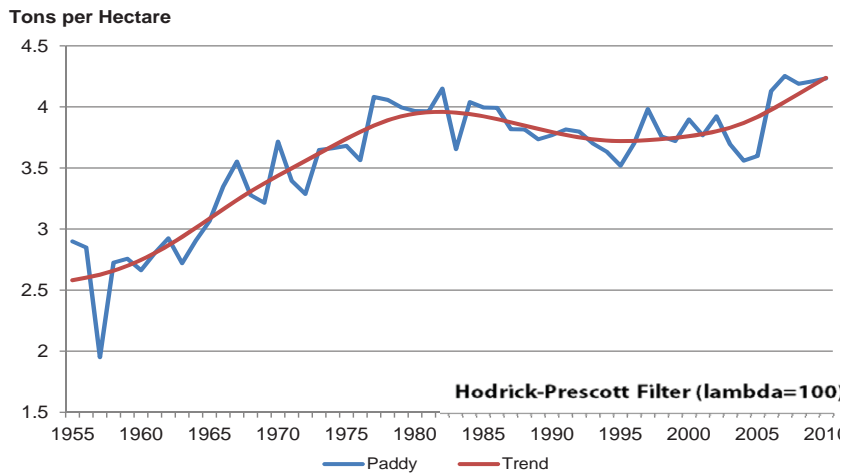
Table A.6.3 Selected Macroeconomic Indicators

Period	Real GDPmp growth (%)	Overall Balance in % of GDPmp	Overall Balance in % of GDPmp	Import Coverage (months)	Official Selling rate (SF** per US\$)	End-of-period inflation (%)
1960-64	5.28	-9.32	0.34	3.52	1.87	2.48
1965-69	11.08	-6.30	0.70	3.76	1.87	2.40
1970-74	0.92	-2.26	1.16	3.92	1.81	7.20
1975-79	5.56	4.16	1.80	4.00	1.80	10.04
1980-84	-2.34	-8.28	-1.68	2.80	1.80	6.52
1985-89	1.72	-20.92	-0.32	0.60	1.80	18.50
1990-94	-0.94	-7.68	-0.12	0.50	102.28	186.06
1995-99	1.52	-1.94	0.00	3.00	525.00	38.24
2000-04	4.78	-3.96	0.18	1.92	2470.00	26.54
2005-09	6.26	0.78	1.38	5.14	4.01	13.02

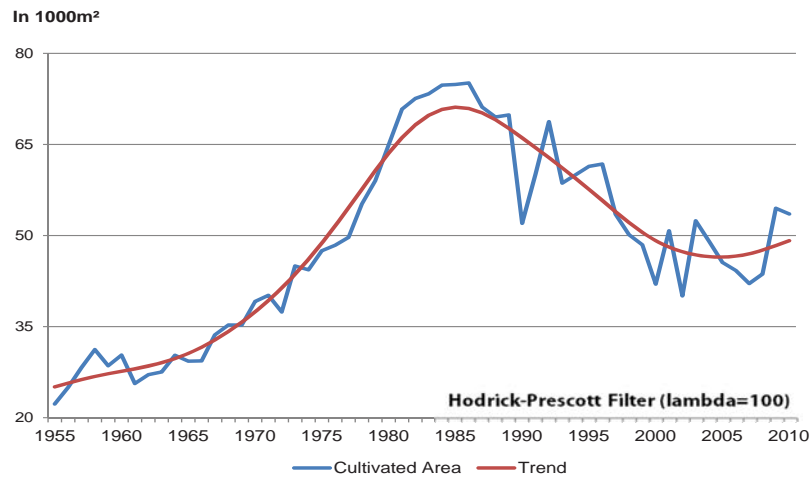
Sources: Central Bank of Suriname, Ministry of Finance, Suriname Debt Management Office, and General Bureau of Statistics

* Preliminary figures

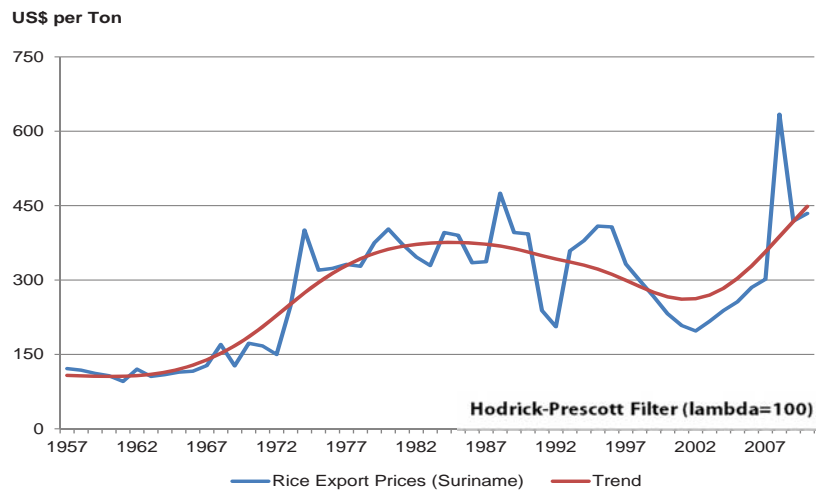
** In the period 2005 to 2009 the Surinamese Dollar was introduced, replacing the Surinamese Guilder.

Figure A.6.1 Paddy Yield Per Acre

Source: Algemeen Bureau voor de Statistiek

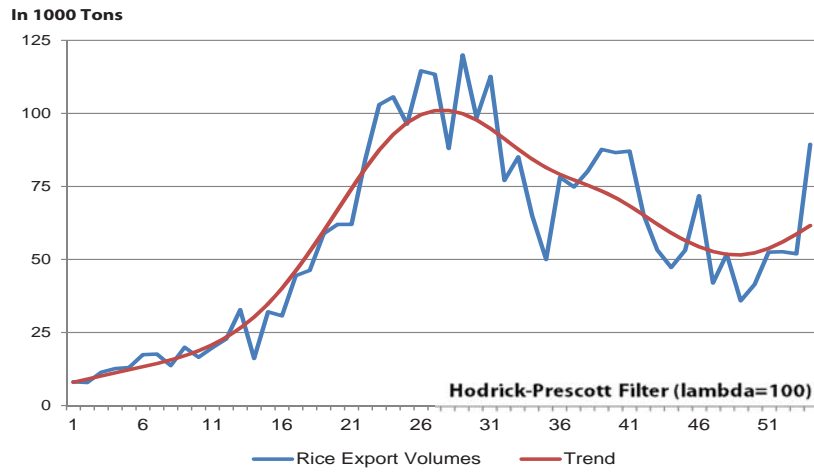
Figure A.6.2 Cultivated Area of Paddy

Source: Algemeen Bureau voor de Statistiek

Figure A.6.3. Rice Export Prices

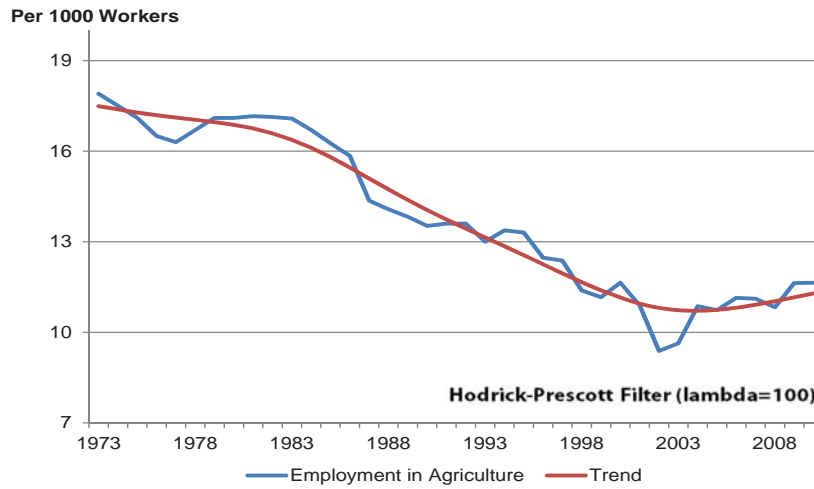
Source: Algemeen Bureau voor de Statistiek

Figure A.6.4 Export Volume of Rice



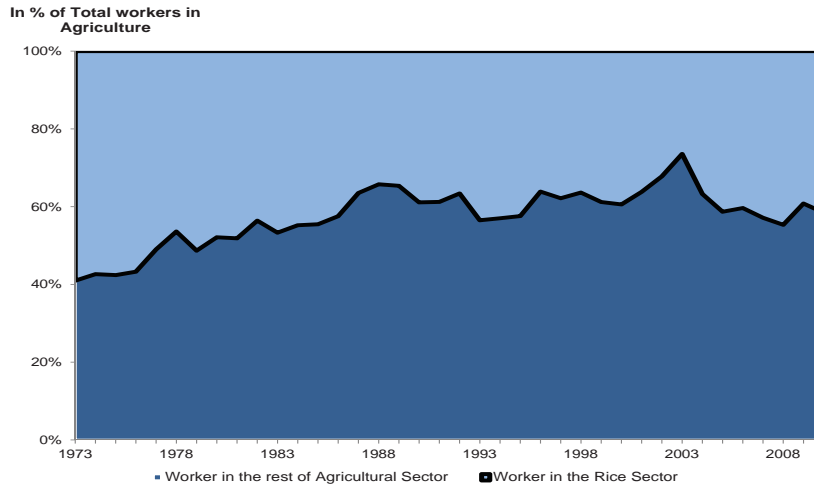
Source: Algemeen Bureau voor de Statistiek.

Figure A.6.5 Employment in Agriculture



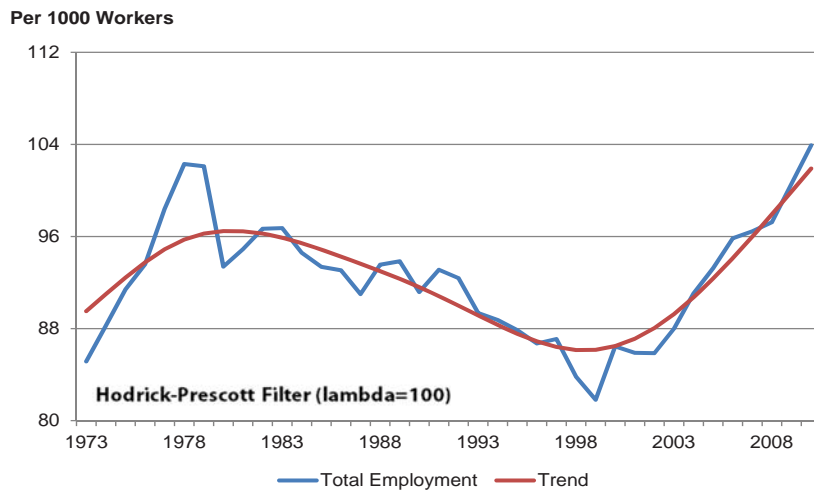
Source: Algemeen Bureau voor de Statistiek.

Figure A.6.6 Share of Employees in Rice sector versus those in other Agricultural Sectors



Source:

Figure A.6.7 Total Employment



Source: Algemeen Bureau voor de Statistiek.

Chapter

7

The Tourism sector in Suriname: 1980-2010

Introduction

Tourism has gradually become one of the largest industries in the world and can be classified as a key driver of economic growth in many countries. According to the World Travel and Tourism Council, tourism contributes substantially to employment, gross output, value added, and capital investment, employment, and tax revenues.

The sector's increasing significance in both developed and developing countries, can be ascribed to its fast growth and deepening diversification. Tourism export earnings are likely to exceed foreign exchange earnings from nonoil commodity products (United Nations World Trade Organization, n.d.). As such, its contribution to the balance of payments is crucial even if not considered as the main income source for many developing countries. From 1950 to 2010 international tourist arrivals grew at an estimated annual average rate of 6.2 percent. According to the World Tourism Organization (2011), the contribution of tourism to economic activity worldwide was estimated at 5 percent of world output. Employment also tends to be relatively high; the contribution was estimated in the order of 6–7 percent of the overall jobs worldwide. As growth in the world's emerging regions has been particularly robust, the shares of international tourists received by emerging and developing countries have steadily risen, from 32 percent in 1990 to 47 percent in 2010.

From the end of 2007 until 2009, the international tourism sector was also negatively affected by two major adverse events. The global economic crisis of 2008 and the breakout of the H1N1 influenza virus in 2009 have had significant effect on international tourism demand. As a result of the recession, international tourist arrivals declined at a

rate of 8 percent in the first two months of 2009, leaving the overall volume on the same level as recorded in 2007. A negative growth of around 2–3 percent in international tourism demand was recorded in 2009. At the same time that year, the sector was affected with the outburst of the influenza virus, resulting in a decrease in tourism demand in major source markets. All the destinations around the world suffered from this decrease except the destinations in Africa, Central America, and South America, which reported a positive growth in the range of 3–5 percent. These two events had no significant effect on the tourism sector in Suriname. Suriname entered the international tourism market in the 1950s. Since then, this sector has reported steady growth figures, and gradually emerged as one of the major foreign exchange earners with significant economic growth stimulating effects. During the 1980s and 1990s, there were some periodic setbacks as a result of civil war and political instability. Growth and development of the sector as well as the total economy had been badly affected by these episodes of instability.

In recent times, Suriname has slowly emerged as a favorable holiday destination, offering a variety of tourism products. Unlike other destinations in the Caribbean, Suriname offers different kinds of tourism products consisting of a mix of culture and forest-based tourism products. During the period 2011, a nominal GDP at market prices of SRD12.832 million was estimated for the sector. The World Travel and Tourism Council estimated that in 2011 the direct contribution of travel and tourism in Suriname was equivalent to 2 percent of total GDP, while direct employment was expected to rise to 3.000 jobs. Visitor spending on travel and tourism was expected to generate an amount of SRD207.7 million. These figures give an idea of the country's large tourism potential (especially eco-tourism) which is predominantly located in the interior.

The development of the tourism sector could be important for the development of other sectors of the economy of Suriname. This industry provides an important input to growth in other sectors such as agriculture, transportation, retailing and manufacturing and could be seen as a key driver of economic development through sectoral integration. Therefore, a growing national tourism sector is indispensable for Suriname, so that it would continue to contribute to the expansion of the national income, employment and the improvement of the balance of payments.

This paper focuses on the development of the tourism sector and will attempt to investigate the nature of the inter-sectoral linkages between the tourism sector, industrial and services sectors in Suriname over the past thirty years (1980–2011). A deeper understanding of the sector which this paper aims to provide, should help policymakers develop plans and policies to shape the sector to become a major economic pillar in the country.

This paper starts with a literature review followed by an empirical part. The literature review discusses the historical background and institutional framework, largely based on earlier studies on the tourism sector of Suriname. The empirical section focuses on data review and the analysis of key trends that characterize the tourism sector

in Suriname¹. Following this, some findings and policy recommendations of the study conclude this paper.

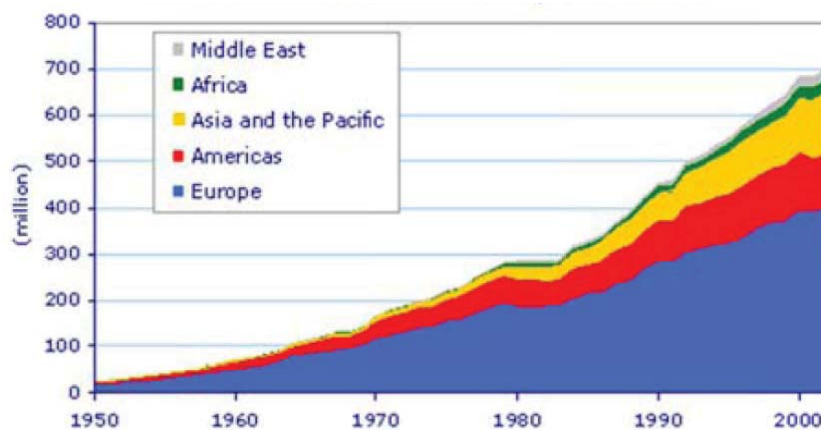
Evolution of the Tourism Sector

This section gives a quick review on how the tourism sector has evolved over the past decades. It deals with the beginning of the international tourism sector, the potential of the tourism products, characteristics, policy and bottlenecks of this sector. This is followed by a historical perspective of tourism development in Suriname comprising three phases.

Historical Perspective of International Tourism

Tourism has grown significantly since the creation of the commercial airline industry in 1950. As mentioned before, international tourism has become one of the most important economic industries in the world.

Figure 7.1 International Tourist Arrivals



Source: World Tourism Organization (WTO)

In the mid-1950s and 1960s, tourists were interested in visiting popular destinations in well-developed countries. The less-developed regions of the world gained more interest as international travel increased. Destinations such as South Africa, Southeast Asia, and Latin America became more popular among tourists because of increasing interest in intercultural excursions such as adventure.

¹ A great deal of the economic activities in the tourism sector of Suriname takes place in the informal sector. This paper, however, is concerned with the formal sector where activities are supported by available data.

As a result of the emergence of new destinations in the developing countries, the share of international tourist arrivals to the fifteen most popular destinations declined from 88 percent in 1950, to 75 percent in 1975 and 55 percent in 2010, as more tourists traveled to destinations in the developing countries.

For the past decades different kinds of organizations and conventions have emerged on the international stage to make guidelines and policy on sustainable tourism. Tourism and travel have already become a priority on the international agenda. The establishment of these organizations began in 1946 when the first International Congress of National Tourism bodies decided to create a new international nongovernmental tourism organization to be affiliated to the United Nations Organization. Thus the United Nation World Tourism Organization (UNWTO) became operational in November 1974. It was established to help promote and develop sustainable tourism so as to contribute to economic development, international understanding, peace and prosperity.

Historical Background of Tourism Development in Suriname

The history of the tourism sector in Suriname can be divided into three phases namely: i) the phase of research studies in the sector, ii) transition from weak/absent institutional framework to the establishment of institutions, iii) the establishment of public/private institutions and partnerships.

The Phase of Research Studies in the Sector (1950–1970)

The period 1950–1970 marked the phase when most of the research studies on the potential and development of the sector did take place. At this stage a beginning of the structure for the development of tourism policy was made. This phase could be characterized by research studies done by both public and private entities. A foundation to promote tourism in Suriname named, “Stichting ter bevordering van Toerisme in Suriname” was established in 1954. In July 1956, a first report, written by the staff of Pan American Airlines, was presented to both private and public stakeholders (Ori, 2011, p. 72). It was suggested in this report that Suriname has sufficient potential for tourism, with potential arrivals estimated at 6000 tourists per year. In order to accommodate this estimated tourist arrivals, a hotel with a capacity of 80 rooms in Paramaribo was highly recommended as well as some lodges in the interior. In addition, the report intimated that there was a need for a good marketing strategy in order to promote Suriname as a destination on the international market. In 1951, Suriname became a member of the Caribbean Tourist Development Association and the country was presented at the international fair in 1962 (Ori, 2011, p. 74). The METS (Maatschappij voor exploitatie van toeristen verblijven in Suriname) was established in the same year, as an entity with a specific task to develop tourist accommo-

dations. The construction of hotel Torarica was completed in the same year. In 1969, the foundation of nature conservation in Suriname, “Stinasu” was also founded (Ori, 2011).

Transition From Weak/Absent Institutional Framework to the Establishment of Institutions (1970–1990)

This phase is characterized by a further transition from a weak institutional framework to the establishment of stronger institutions. According to Ori (2011), three major aspects—a long-term vision, goals, and implementation of plans—were missing. The designation of the Tourism Department as a subsidiary of the Ministry of Finance took place in this period. The idea was to transform this department to a tourism authority with special task and commitments. The task of this authority was the development of tourism products, maintenance and the promotion of leisure facilities. In addition, it held responsibility for the preparation of regulations and legislations to guide the sector as well as the preparation of guidelines on building prescriptions for projects and also the designation of tourism zones. These plans were not fully implemented because of political instability in the mid-1980s (Ori, 2011, p. 74).

Despite the political instability, tourism policy made a progressive turn during the period 1981–1989. On December 1981, the decree E-31, No. 191 was finally promulgated for the establishment of the Tourism Authority (Ori, 2011, p. 77). During this phase, the development of subsectors like transport and hotel was fostered by a growing number of tourist arrivals. These developments nevertheless revealed some of the bottlenecks that were a drag on the development of the tourism sector, including issues such as flight schedules, limited capacity and poor connections in the transport sector. Also, the relatively high ticket prices reduced the competitiveness of tourism (Nota Toeristisch Beleid, 1986). Water transport back then was considered part of inbound tourism activity and consisted of transporting tourists and visitors to the interior and districts with a canoe or a ferry. In the city, transport by taxis and buses needed to be regulated to control the proliferation that had emerged due to increased demand for transportation services. Tourism attractions such as, nature, culture and national heritage became part of the tourism product as well. Suriname was divided into tourism zones where the development of tourism products was expected to take place. The capacity of the accommodation sector amounted to 800 beds of which 300 beds were of international standards in Paramaribo and 500 beds in other parts of the country. The occupancy rate was between 25 and 30 percent.

The Establishment of Public-Private Institutions and Partnerships (1990–2010)

The sector expanded following the emergence of a number tourism organizations. In 1991, the Ministry of Transport, Communication, and Tourism was established. Before that, the tourism portfolio was handled first as part of the Ministry of Trade, Transport and Industry up to 1985 and thereafter by the Ministry of Economic Affairs. The task of the Ministry of Transport, Communication, and Tourism was twofold. It first started

developing tourism and hospitality activities, before establishing regulations and procedures for investors both nationally and internationally.

In May 1996, the Suriname Tourism Foundation was founded. The institution was a joint creation of the Ministry of Transport, Communication, and Tourism and the Chamber of Commerce and marked the beginning of the development of the tourism industry as collaborative effects between the public and private sectors. The board of the foundation consisted of both public and private sector members; several tourism associations such as, Suriname Association of Tour Operators (Vestor 1996) and the Suriname Hotel & Tourism Association (SHATA 1998) and later on Tourism Union of the Republic of Suriname (TOURS 2001) were also created in this phase.

The development of the tourism sector became an increasing priority for the government during this phase. In the Multi-Annual Development Plan 2006–2011, areas such as institution building, legislation, human resource management, and improvement and promotion of the tourism product were listed as high priority.

This phase also saw the development of several financing projects. In 2002, the private and public sectors were encouraged to deepen collaboration by the European Union, which financed two large projects (Ori, 2011). This is emphasized further in the next section of this paper.

Institutional Framework

A weak institutional framework is a common problem for the development of the tourism sector in many developing countries. A good established institutional framework is of great importance for the development of a sustainable tourism policy. The presence of different governmental ministries with intersecting responsibilities in the development, planning and marketing of the tourism sector has often been a problem in many countries. The problem arises since different ministries have conflicting agendas that impede the balancing of development of tourism on one hand and the conservation of natural and cultural assets on the other hand. The development of an umbrella mechanism or organization, that coordinates all efforts to create the necessary balance to develop the tourism sector, is highly needed and has already been stressed several times at the national level in many countries. The following section will discuss the scope of the institutional framework for the tourism sector in Suriname.

Organizational Aspects of the Sector

The tourism policy of the Surinamese government which is expressed through the policy intentions of the Ministry of Transport, Communication, and Tourism, aims to work toward promoting a greater economic contribution for the welfare and quality of life of the Surinamese community in general and local communities in particular. In this section the focus will be placed on the engagement of the various entities with issues related to tourism.

Table 7.1 Organizations Operating in the Tourism Sector

Organization	Established	Constituents
Ministry of Transport, Communication, and Tourism (TCT)	1991	Public
Suriname Tourism Foundation (STF)	1996	Public/private
Suriname Association of Tour Operators (VESTOR)	1996	Tour operators
Suriname Hotel & Tourism Association (SHATA)	1998	Hotel, guesthouses, apartments
Tourism Union of the Republic Suriname (TOURS)	2009	Umbrella body; all segments
Suriname Food & Beverage Association (SUFOBAS)		
Suriname Handicraft & Craft Association (SUHANAS)		
Association of Taxi Holders (VETAHOS)		
Craft & Art Business Association (CRABASI)		
Association of Surinamese Travel Agents (ASRA)		

Source: Author's compilation, based on data of Ori, 2011;

Suriname Tourism Development plan, n.d.

Responsibilities of the Department of Tourism

The Ministry of Transport, Communication, and Tourism is responsible for policy-making for the tourism industry. In the execution of this task, the Ministry is assisted by the Suriname Tourism Foundation. The tourism department is responsible for the development of policy and the monitoring of all tourism issues in all facets. The department sees as its mission the development of a qualitatively good tourism product in a way that ensures that the rights of the indigenous and maroon communities are respected and the environment adequately protected and preserved. It therefore promotes Suriname as a sustainable tourism destination, while seeking to facilitate a durable and a continuous growth in the numbers of tourist arrivals.

Services Provided by the Directorate

The directorate of tourism is responsible for (a) providing information to investors and others about the sector; (b) dealing with complaints and bottlenecks in the industry; (c) devising processes to drive market penetration; (d) ensuring and monitoring the quality of service in the sector; and (e) marketing and general promotion of the sector.

Tourism Policy

The present tourism policy of the tourism directorate in the Ministry of Transport, Communication, and Tourism is divided into national, regional, and international policy issues affecting tourism. National policy of this directorate focuses on the diversification of the tourism products, to provide a wide choice to the tourists visiting Suriname. Within the diversification paradigm the district, as a local entity, plays an important role. The aim of this policy is to allow the district to brand their specially developed tourism products.

Regional and International Policy

There is an underlying recognition that Suriname should work together with its regional partners in order to develop its tourism. The intention is that Surinamese tourism product should be aligned properly to the regional tourism product. The aim is to learn from other regions through knowledge accumulation and mitigation of competition. Tourism in Suriname is nevertheless, a unique product, geared toward the eco and cultural tourist, which does not compete directly with tourism products in several regions of the Caribbean.

On international policy issues, this body acknowledges the importance of gaining from the knowledge and expertise of countries such as China and Japan in the field of tourism development². The government is also cooperating with several organizations at the regional and international levels and has entered into a number of bilateral partnerships. Some of these organizations are as follows:

- Combined Amazon tourism Product, this is a collaboration between French Guyana, some states of Brazil and Suriname, with the aim to develop a one tourism product.
- Amazon Caribbean Tourism Trail, this is an association between Guyana, Suriname, and the Roraima state of Brazil
- Amazon Cooperation Treaty organization
- Caribbean Tourism Organization
- World Tourism Organization

Stakeholders in the Sector

There exists cooperation between the directorate and organizations grouped in the Tourism Organization Union of the Republic of Suriname (TOURS), which consist of the lodge owners and other segments in the tourism sector. TOURS represents the entire hospitality and tourism industry in Suriname, divided into public and private stakeholders (see Table 7.2).

Table 7.2 Public Stakeholders in the Tourism Sector

AIR	ACCOMODATION	WATER	LAND
NV Haven Beheer Suriname	Maatschappij Exploitatie Toeristenverblijf Suriname (Mets)	Maritieme Autoriteit voor Scheepvaart (MAS)	Nationaalvervoersbedrijf (NVB)
Luchtvaartbeheer Suriname		NV Scheepvaart Maatschappij (SMS)	Particuliere Lijnbusorganisatie (PLO)
Surinaamse Luchtvaart Maatschappij		Stichting Surinaamse scheepvaart School (SSSS)	Particuliere busbedrijven (Ashruf, Le grand Baldew)
Binnenlandse Luchtvaartmaatschappijen (Gum Air, Blue Wings)			

Source: Author's compilations, based on assessments from Ori 2011

2 The tourism sector of china grew by almost hundred percent in the 1980s.

Legislation and Regulation in the Sector

The legislation that currently governs tourism is limited to issues dealing with licensing and registration of accommodation facilities, travel agents, tour operators, air and water transport as well as casinos. Legislation covering investment is in process, as is legislation related to the transport system (buses and taxis; Suriname Tourism Development Plan: Final report, 1998). Since 2007, a comprehensive legislation on tourism still remains in draft and indeed the legislation on hotel, restaurants and cafeteria's (horeca) is outdated. There is no framework that covers areas such as the role of tourism in the economy, tourism policy, tourism zones, classification and grading and licensing, tourist protections, public sector funding for tourism. There is a pressing need to have appropriate enabling legislation, regulation and an active Tourism law for the development of the tourism industry (Ori, 2011).

Financing and Investment-Related Activities

The most important source of financing of tourism activities is external, usually in the form of bilateral partnerships or with international tourism organizations. A large part of the Government budget in respect of the development of this sector consists of institutional equipment cost (Ori, 2011). This subsection further elaborates on the financing and investment aspects of tourism.

To ensure a more effective statistical data management to aid tourism planning, the Suriname Tourism Foundation received financial support in May 2003 from the Caribbean Tourism Organization (CTO) for the installation of a Management Information System for Tourism (Barbados Programme of Action, 2004).

The foundation implemented a National Integrated Tourism Development Program (2002–2005), financed by both the European Union and the local government. This was part of the second financing program (2002–2004) funded by the European Union. The focus of this program was related to three areas, namely institutional and legislative strengthening, product development and human resource development. The first financing program on tourism development funded by the European Union (1999–2002) was also implemented by the tourism foundation and had its focus on developing areas such as, marketing, human resource development and product development.

With the focus on increasing the market positions of mainly hotel accommodations with no more than 75 rooms, Suriname participated in the Small Tourism Enterprise Project) financed by USAID (WSSD, 2004). In 2008 there was a third financing program on tourism development funded also by the European Union, which had its focus on technical assistance, product development (including community tourism in the hinterland), improvement of awareness projects and promotion of e-marketing. Because of a lack of collaboration between both public and private sectors, the country was not able to utilize this initiative and the European Union withdrew its support.

Political Environment in the Sectors

The political events in a country could have negative effect on the development of the tourism sector. Political issues which could be disruptive and can influence the choice of a tourist for a particular destination include custom formalities, political instabilities, weak customers' services etc. In previous years, tourists were affected by the bureaucratic formalities of several government services on the international airports of Suriname (Djiman, 2003). In order to increase the awareness of tourism the government had persons from several forces (police, military, customs) trained to provide better and efficient airport services to visitors (Ori, 2011). In another joint effort to optimize the processing of mainly arriving Dutch tourists at the J A Pengel national airport, Zanderij the Ministry of Foreign Affairs worked closely with the Ministry of Justice and Police and that of the Ministry of Transport, Communication, and Tourism to expedite the visa-issuing process (Djiman, 2003, p. 22). At present, government tourist cards have been introduced for tourists from The Netherlands. Figures have shown that The Netherlands supplies the biggest number of tourists to Suriname, accounting for 60 percent of total arrivals. Problems associated with visa processing for other tourists, in particular those from the United States, are still a barrier. According to Ori (2011), the tourism policy is weak due to the lack of suitable institutions to evaluate and implement tourism strategies.

Effect of the Sector on Economic Development

This section discusses the effect of the tourism sector on economic development in Suriname. First a general view of the key economic indicators will be discussed in order to give an idea about the structure of the total economy. Further a brief review of the characteristics of this sector will be presented. The development of the contribution to employment and education will be discussed also. The sector dependency of the Economy will be discussed by looking at the effect on the key indicators such as GDP, public finances, balance of payments, international reserve, and exchange rate.

Structure of Suriname's Economy

As is known, Suriname is a small, open economy and is highly dependent on the mining sector. The mining sector (alumina, gold, and oil) accounts for more than 90 percent of total merchandise exports.

Table 7.3 Key Socio-Economic Indicators

Demographic				
Population*	531,170			
Area (km ²)	163,820			
Sociocultural				
Population group (%)				
	East Indian	27.4		
	Creole/Afro-Surinamese	17.7		
	Javanese	14.6		
	Maroons	14.7		
	Other	25.6		
Key Economic Indicators				
	2008	2009	2010	
GDP mp (in million SRD)*	8,927.3	9,913.3	12,832.0	
Real GDP mp growth (%)	3.5	4.5	5.0	
Inflation (end of year)	9.4	1.3	10.3	
Average official exchange rate (USD/SRD)	2,71	2.71	2.71	
Unemployment rate	8			
Production sectors (export value in million USD):				
	Gold	715.5	322.9	1160.5
	Oil	184.6	138.7	175.3
	Alumina	715.5	876.8	434.3

Source: Author's calculations, based on figures of ABS, SPS; estimates of Central Bank of Suriname;
<http://www.gov.sr/sr/over-suriname/demografie.aspx>.

Note: *Figures are tentative.

According to key indicators, Suriname's economy witnessed growth and stability during the period 2006 to 2010. The country registered an average annual growth of 4.2 percent in real GDP during those years. In 2010, Suriname benefited from the upturn in world trade through the strong increase in commodity prices, (almost 30 percent) of the three main merchandise export products, gold, crude oil and alumina, leading to enormous improvements in trade.

Characteristics of the Tourism Sector

Suriname is not prone to natural disasters, epidemics and widespread political instability. Compared to other destinations in the Caribbean, this sector is small scale, with a less developed institutional framework and organizational structure. Nearly 95 percent of the companies operating in the sector have no more than 10 employees (Ori, 2011, p. 115).

Mass beach tourism is absent in Suriname. Nevertheless, other types of tourism products such as, health tourism, shopping tourism and eco-tourism are emerging.

Health tourism is a form of activity whereby tourists visit for health-related reasons (for example, for rehabilitation purposes or for traditional/alternative health care). The tourism market has also a great potential for same day visitors, for instance visitors coming from French Guyana to shop and dine, during a day or less. Eco tourism of Suriname includes trips to nature reserves in the unspoiled forest as more than two-thirds of the country consists of Amazonian rainforests with an enormous wealth of flora and fauna.

Ori (2011) argued that the interest in authentic, uninhabited areas that are untouched and unspoiled by excessive traffic has increased tremendously. Although beach holidays are still preferable, there is a clear shift from passive to active holidays. Apart from the Central Suriname's Nature Reserve (1.6 million hectare or 10 percent of the country's land surface), a large proportion of the interior in Suriname is mostly unspoiled and uninhabited. The country counts about 15 nature reserved areas, in its supply of eco-tourism products. There is ample evidence that Suriname has emerged as a favorite holiday destination, given the variety of tourism products that it offers to the world.

These products include activities such as bird-watching, river cruising, sport fishing and natural heritage (old colonial style buildings and other structures). Most of the packages on offer pertain to nature hiking and visits to villages of indigenous people, combined with boat trips on the rivers and some adventure and survival events. The duration of the tours varies from one day to a few weeks trip. The supply of Suriname's tourism product consists of the total holiday package of national attractions, namely nature, wildlife with supporting facilities such as accommodation services. Infrastructure and access roads which give access to the leisure facilities and utilities such as airport and airlines are part of the tourism product.

Table 7.4 Branches in the Tourism Sector

Branch	1998	2000	2002	2010
Hotels	13	15	21	66
Tour operators	25	15	22	64
Restaurants	20	—	—	372
Travel agencies	25	25	32	58
Apartments and guest houses	56	75	99	129
Recreation and nature resorts	35	50	67	74
Car rentals	7	n.a.	n.a.	20
Domestic air agencies	4	n.a.	n.a.	7
Bed and breakfast/pensions	n.a.	200	295	n.a.
Casinos	n.a.	11	11	n.a.
Total	185	391	547	790

Source: Author's calculations, based on STS,
General Bureau of Statistics,
Ori 2011, Djiman, 2003. Note. n.a.: not available.

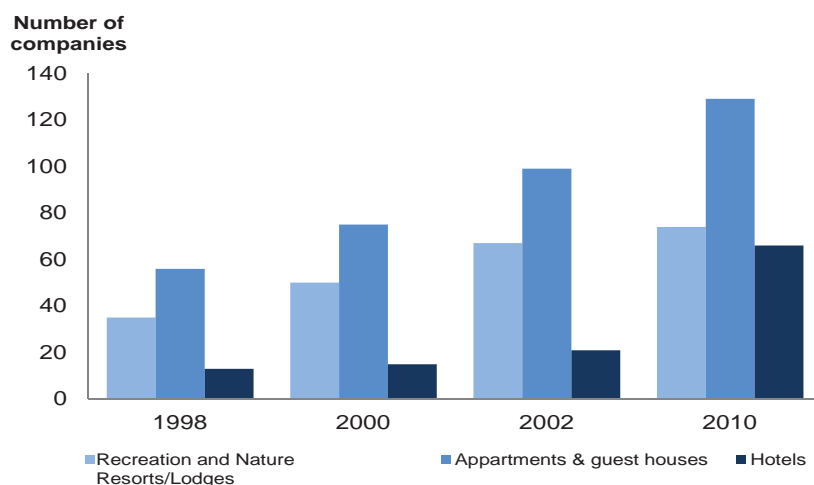
Tourism supply is driven by several kinds of branches in the industry (Table 7.4). The general bureau of statistics registered a total of 185 entities in eight branch industries

operating in the sector in 1998. The number of tour operators, tourist accommodations, and recreation and nature resorts is growing markedly.

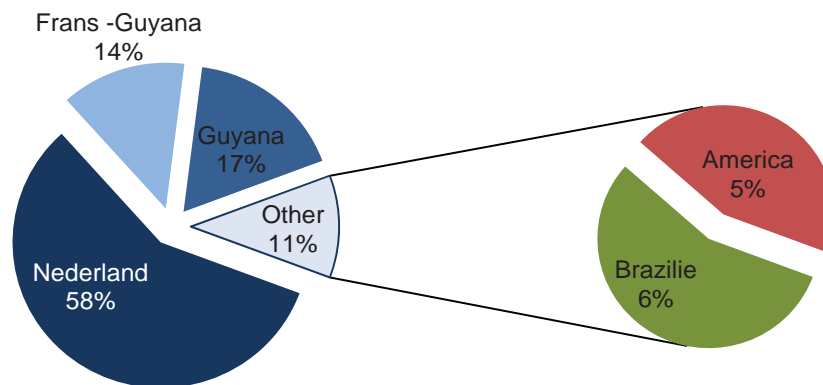
Compared with the period 2010 (Table 7.4), there has been an increased development of new branch industries operating in the sector. This increased more than three times when compared with the situation in 1998.

The accommodation facilities in Suriname include a variety of businesses from large international hotel chains like Marriott, Best Western, Wyndham to independent local hotels, guest houses, lodges, and pensions (bed and breakfast). In the mid-1997, inventory shows that there were approximately 3,000 beds available in paid accommodation facilities. This estimate was countrywide of which 2,300 was in the coastal area and 700 in the interior. Of this number, only 1,700 were suitable for the international tourist. As a result of an increasing demand, this sector has recently expanded with new capital investments and a diversification in the range of products supplied. Many new hotels have been built during the period 2007–2010 and building startups have continued in order to keep up with the increasing demand.

Figure 7.2 Trends in the Accommodation Sector



Source: Author's compilations, based on Suriname Tourism Foundation and General Bureau of Statistics figures.

Figure 7.3 Top Five Market Segments

Source: Author based on STF figures

Visitor Profile, by Purpose

Suriname attracts a stream of visitors, who mainly come (a) to visit family/friends/relatives; or (b) for business, holiday (leisure), or study. Table 7.5 presents the purpose of visit during the past 5 years. The family/friends/relatives tourist segment in Suriname is dominated by The Netherlands market which accounts for more than 58 percent of all international arrivals (Suriname Visitor Survey 2004). The amount of leisure (common) tourist and trainees/ students from The Netherlands and Belgium increased during the past 5 years. This could be as a result of the increasing developments and marketing strategies in the sector during this period. For instance, Suriname was promoted by both the private and public stakeholders at the Belgium tourism fair in the beginning of 2010. A shift in the interest of tourists from beach tourism to eco-tourism (authentic, uninhabited areas and unspoiled by massive traffic) also contribute to an increase of leisure visitors (Table 7.5).

Table 7.5 Purpose of Visit, 2005–2010

	2005	2006	2007	2008	2009	2010
Business	14,500	14,392	15,253	14,341	13,211	17,366
Leisure	43,576	39,726	42,733	44,155	45,698	86,041
Study	1507	1,487	1,995	1,892	1,593	2,026
Family visit	90,279	87,511	91,539	75,270	73,771	70,987
Other	7,864	8,414	11,563	10,101	10,372	16,409
Not stated	2,444	2,530	3,602	4,952	5,983	11,690
Total visitors	160,170	154,060	166,685	150,711	150,628	204,519

Source: Suriname Tourism Foundation (STF)

Both overnight and same day visitors are important contributors to tourism development in Suriname (see the Appendix). This class of tourists consists of a very large informal stream of visitors, in particular the category of the same day visitors.

Sector Dependency of the Economy

The tourism sector is one of the most interrelated and interdependent sectors in an economy. Highly dependent on other sectors for its inputs and vice versa, it develops a large number of inter-sectoral linkages and as such a large spin-off effect to the rest of the economy. Table 7.6 presents tourism key indicators. It supports the view that this sector contributes directly and indirectly to the national economy. The idea behind the presented indicators is to give a brief review of the tourism sector in its totality. One may identify six distinctive phases of Surinamese economic history and their effect on tourism in the country:

1981–1985	->	Period of military regimes
1986–1990	->	Span of civil war and restoration of democracy
1991–1995	->	Period of adjustment programs and multiple exchange rate regime
1996–2000	->	Stretch of expansionary public finance and high inflation
2001–2005	->	Span of exchange rate stability
2006–2010	->	Period of monetary stability

Table 7.6 Key Tourism Indicators

Period	Visitors Exports		Tourism Impact on Balance of Payments			Impact of Tourism on GDP		Employment in Tourism	
	Tourist Arrivals (x1000)	Estimated Tourist Expenditure (x mln USD)	Travel Receipts (x mln USD)	Transport Receipts (x mln USD)	Share of Travel and Transport Receipts in Total Exports (%)	Exchange Rate USD/SRD	Tourism Share in GDP (%)	Total Employment in the Sector x 1000	Share of total Working Places (%)
1981–1985	52	37,435	10.4	30.2	4.7	1.77	0.46	95	25
1986–1990	33	23,659	4.0	4.8	1.5	1.77	0.48	93	24
1991–1995	51	2,366	8.7	20.8	5.6	0.21	0.35	90	22
1996–2000	57	55,206	9.9	41.4	8.1	1.04	0.30	85	23
2001–2005	101	122,121	16.7	37.9	6.0	2.66	0.29	89	27
2006–2010	165	156,640	72.7	22.8	5.5	2.78	0.39	99	23

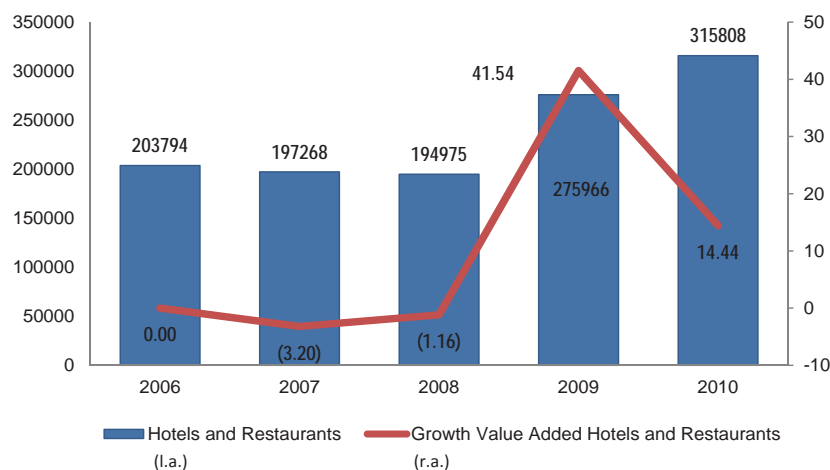
Source: Author's calculations, based on General Bureau of Statistics and Central Bank of Suriname reports.

*Based on ISIC classification

Effect on Gross Domestic Product

The effect on gross domestic product (GDP) depends for a large part on visitor arrivals (numbers of tourists), tourist expenditure and tourism-related activities. Recent trends (2006–2010) show that visitor arrivals increased to an average of 165 thousand tourists per year generating an estimated total tourist expenditure of US\$156 million (Table 7.6). Looking at the development of the accommodation sector namely the lodges, hotels and other sectors previously described, it could be inferred that there is also an increase in the supply of tourism activities. The average share of the tourism sector³ to GDP was estimated at 0.39 percent over the period 2006–2010. This was the highest contributory rate since the end of the period of the civil war (1986 to 1990). The measuring of the contribution of tourism to the GDP may be divided into direct and indirect components. The direct contribution arises from the measurement of the total spending of tourists on accommodation, food and drinks, while the indirect contribution relates to the value which tourism-related activities such as construction provide. The average real value added of hotels and restaurants together was estimated at SRD 238 million for the above mentioned period. In 2010 value added reached a level of SRD 316 million, from SRD 204 million in 2006, an increase of SRD 112 million. In the period 2006–2010, the value added for these sectors had an average growth rate of 10 percent annually.

Figure 7.4 Value Added and Real Growth of Hotels and Restaurants



Source: Author based on GBS reports figures

3 For this analysis, the percentage share of tourism was calculated based on the ISIC Classification (Hotel, Trade, and Restaurants; Transport, Storage, and Communications; Financial Institution; Real Estate and Business Services).

Effect on the Balance of Payments

The balance of payments as a whole gives an overview of the foreign position of Suriname relative to the rest of the world. The exports and imports of all tourism services are captured under the components Transport and travel on the services account of the balance of payments. Transportation for visitors covers all categories of transport such as international travel by sea and air as well as internal waterway travel provided by residents of Suriname to nonresidents. It is worth to know that not all the tourists are transported by the national carrier, Suriname Airways (SLM). A great deal of proceeds for transportation accrues to foreign airlines such as KLM, Caribbean Airlines etc. The travel item on the service account of the balance of payments consists of expenditures of all international visitors, including ‘inbound travelers’ and ‘inbound visitors’.

Compared with other destinations in the Caribbean where tourism is the main driver of economic growth, tourism receipts have no significant effect on the services account of the balance of payments for Suriname. An average amount of US\$72 million per year was registered for travel while US\$23 million was recorded for transport in the period 2006–2010 (Table 7.6). Figure 7.5 gives an illustration of the tourism impact on the balance of payment. The percentage average share of both travel and transport receipts in the total export of goods and services accounts for only 6 percent yearly over the period 2006–2010, much in line with the average share since 1991 to 1995.

Figure 7.5 Tourism Effect on the Balance of Payments, 2006–2010

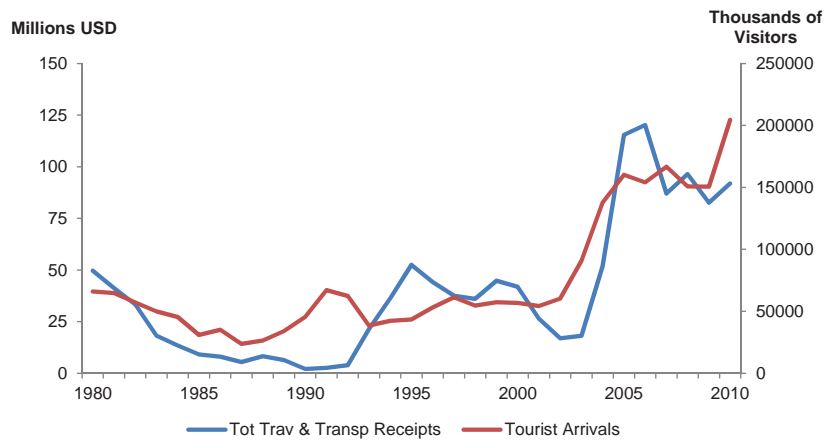


Source: Author, based on CBVS reports

Figure 7.6 shows the sum of the export receipts on travel and transport against tourist arrivals during the period 1985–2010. The two variables follow a similar trend as tourist arrivals during the whole period, except for 2007. Travel has shown a more upward trend in contrast with passage during the last sub period (2006–2010). In contrast with an increase in tourist arrivals from 154 thousand visitors in 2006 to 167 thousand visitors

in 2007 (increase with 8 percent), the total of travel and transport together decreased (with 28 percent) in that same period. This could mainly be ascribed to a decrease in other components within the travel account such as business services which is by far the largest component.

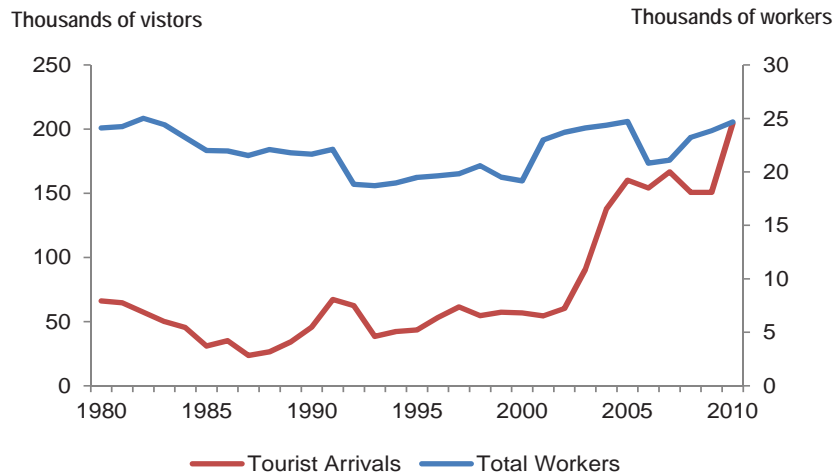
Figure 7.6 Tourism Receipt on the Balance of Payment versus Visitor Arrivals



Source: Author based on CBVS and STF reports

Employment

The tourism sector is an overall service industry that relies essentially on quality service for its effectiveness. This sector is highly labor-intensive and available evidence suggests that it is creating ample employment as the sector expands. It is a cluster of production units in different industries that provides goods and services in response to demand by visitors. According to the United Nations World Trade Organization (2010) there is a direct, indirect and also an induced effect of tourism on employment. The tourism sector is directly connected to several branch industries such as accommodation, transport, restaurants, and indirectly related to activities of travel agents and tour operators. With the increased development of the tourism sector there is an opportunity for Suriname to expand direct and indirect employment. The total workforce for Suriname was estimated at 104,000 workers during the period 1981–1985, of which almost 25,000 held jobs in the tourism sector. The average share of jobs in the trade, hotels and restaurants sectors together was estimated at 25 percent of total employment. Although there was a sharp increase in arrivals during the period 2001–2010 (implying increased employment), the average share of employment remained around 25 percent mainly because of the expanding employment opportunities in other sectors of the economy.

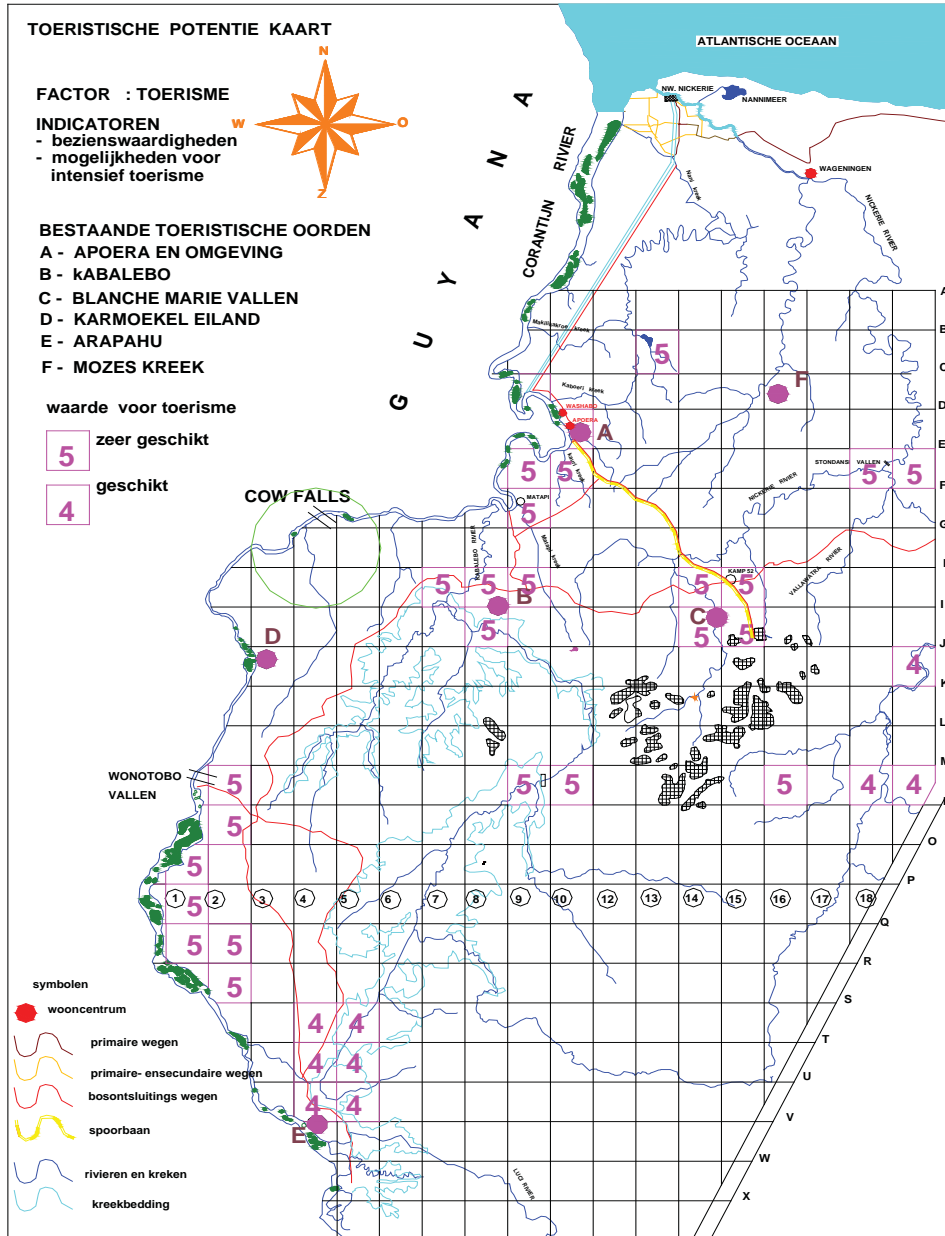
Figure 7.7 Visitors Arrivals versus Total Employment

Source: Author, based on GBS and STF figures

Conclusions and Policy Implications

This paper has attempted to examine historical, institutional, and macroeconomic developments of the tourism sector in Suriname over the period 1980–2010. The main findings are that demand for tourism services has been growing steadily over the period of analysis and has made notable contribution to employment and the balance of payments. Nevertheless, to fulfill its full potential, certain developmental and institutional bottlenecks needs to be overcome. These include the necessity for developing adequate legislation and regulatory framework to guide future growth in the sector. In addition, it is imperative to make resources available to address measurement problems that beset the sector. Given that tourism is interrelated across a number of sectors, it is important to devise an appropriate method to effectively identify its actual contribution in activities, especially in areas where there is substantial domestic participation.

Annex: Tourism Potential Areas



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