

# SURINAME SECTOR COMPETITIVENESS ANALYSIS

Identifying Opportunities and Constraints to  
Investment and Diversification  
in the Agribusiness and  
Extractives Sectors



With an Executive Summary in Dutch  
Inclusief samenvatting in het Nederlands



**CIIP** Competitive Industries and Innovation Program

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## **Samenvatting**

Suriname is een kleine economie die gedragen wordt door de overvloedige natuurlijke rijkdommen van het land. De winning en verwerking van de aanzienlijke bauxiet-, olie- en goudvoorraad waren in het verleden goed voor ongeveer 30 procent van het bruto binnenlands product (BBP) en maar liefst 90 procent van de export. De landbouw is een andere belangrijke economische sector, die de jongste jaren heeft bijgedragen aan meer dan 10 procent van de export. Deze sector is wel geconcentreerd en ook afhankelijk van grondstoffen. Samen nemen de twee sectoren naar schatting 40 procent van de totale werkgelegenheid van het land voor hun rekening. De Surinaamse economie wist begin deze eeuw sterk te profiteren van gunstige prijzen op de wereldmarkt voor de exportprijzen van zijn grondstoffen. Dit resulteerde in de periode 2001–2013 in een reële groei van het BBP met 4,7 procent per jaar.

Aan die sterke stijging van de grondstoffenprijzen is de jongste jaren echter een einde gekomen. Dit veroorzaakte een inkrimping van de economie, hetgeen aangeeft hoe afhankelijk Suriname is van de winningssector. De inkomsten uit goud, olie en bauxiet worden door de Overheid van Suriname (OvS) doorgestroomd in de vorm van significante werkgelegenheid in de publieke sector. Naast de winningsindustrie is er ook nog de private sector. Deze is over het algemeen onderontwikkeld en bestaat overwegend uit bedrijven die zich toeleggen op niet-verhandelbare diensten, veelal gerelateerd aan de winningsindustrie. Deze kwetsbaarheid voor schommelingen van de grondstoffenprijzen heeft ertoe geleid dat de Overheid en het maatschappelijk middenveld steeds meer pleiten voor economische diversificatie en door de private sector gestuurde groei.

**Dit rapport bevat informatie voor OvS-strategieën die gericht zijn op diversificatie van de economie, met een accent op het verhogen van private investeringen en het wegnemen van beperkingen voor het concurrentievermogen in de landbouw en de winningsindustrie.** Recent beleidsonderzoek naar diversificatie maakt de voordelen duidelijk van het ontwikkelen van betere producten en het betreden van nieuwe markten, naast het ontwikkelen van nieuwe industrieën. ‘Hoe’ men produceert en exporteert, qua productkwaliteit, kan belangrijker zijn dan ‘wat’ men produceert en exporteert. Suriname heeft bestaande productiecapaciteit en overvloedige natuurlijke hulpbronnen in de landbouw en de winningsindustrie, wat een relatief voordeel aangeeft. Deze twee elementen bieden ook de mogelijkheid om substantiële inkomsten uit de export te genereren en dat is gezien de huidige economische uitdagingen een belangrijke beleidsdoelstelling van de OvS. De huidige productie en export zijn echter geconcentreerd in

enkele grondstoffen en beide sectoren kampen met beperkingen voor groei. Dit rapport bevat beleidsaanbevelingen om de OvS te begeleiden bij inspanningen die een klimaat mogelijk maken dat nieuwe investeringen en een groter concurrentievermogen bevordert voor de landbouw en de winningsindustrie.

## Landbouwsector

Suriname beschikt over een overvloed aan grond en water en gunstige teeltoomstandigheden voor vele producten die in de binnenlandse vraag zouden kunnen voorzien (en de huidige import van landbouwproducten zouden kunnen vervangen) en die men naar de Caribische en mondiale markten zou kunnen exporteren. De landbouw is een traditionele groeisector. Rijst, bananen, vis en garnalen zijn reeds belangrijke exportproducten. Suriname heeft talentvolle agrarische ondernemers. Verschillende bestaande verwerkende bedrijven zijn gecertificeerd volgens internationale normen. Tevens is er belangstelling van buitenlandse bedrijven uit de agrosector voor potentiële nieuwe investeringsmogelijkheden.

De sector heeft echter te kampen met grote beperkingen. Exporteurs van landbouwproducten noteren problemen met naleving van kwaliteit en toegang tot de markt. Er is slechts een beperkt aantal laboratoria voor de certificering van voedselveiligheid en bedrijven kampen met niet-tarifaire handelsbelemmeringen in tal van exportmarkten. De binnenlandse arbeidskosten zijn hoog en grote landgoederen zijn vaak afhankelijk van arbeidsmigranten uit andere Caribische landen. Het grootste deel van de gronden is eigendom van de overheid en de processen en vereiste procedures voor toegang tot land zijn veelal onduidelijk, zeker voor buitenlandse investeerders. Er zijn agrarische staatsbedrijven met onderbenutte productiemiddelen, maar de inspanningen voor meer particuliere investeringen door privatisering of concessies zijn tot dusver beperkt gebleven.

Een verhoging van de landbouwproductie, onder meer door productdiversificatie en het aanboren van nieuwe exportmarkten, vereist een aanzienlijke stimulering van nieuwe particuliere investeringen in de Surinaamse agrosector. Maar omdat het investeringsklimaat de bewegingsvrijheid van de sector beperkt, zullen er proactieve hervormingen van de OvS vereist zijn teneinde een gunstig klimaat tot stand te brengen voor investeringen in de agrosector. De ervaring van de Wereldbankgroep is dat een doelgerichte sector- of 'subsector-'gerichte benadering het meeste effect kan sorteren voor het genereren van concrete investeringen uit deze initiatieven voor het hervormen van de agrosector en het bevorderen van investeringen.

Dit rapport presenteert de bevindingen van een 'scan' van de agrosector met het oog op het identificeren van subsectoren met goed potentieel voor het aantrekken van investeringen. De analyse bekijkt nieuwe investeringen in de subsector zowel vanuit het oogpunt van de potentieel commerciële aantrekkelijkheid voor nieuwe investeerders als in het licht van de potentieel bijdrage van dergelijke investeringen aan economische ontwikkelingsdoelstellingen in Suriname. De scan houdt verder ook rekening met specifieke beperkingen voor nieuwe investeringen en de export en beoogt kansen te identificeren die 'quick wins' of snelle resultaten

kunnen opleveren in het aantrekken van nieuwe investeringen. Het doel van de analyse is subsectoren te identificeren waar doelgerichte inspanningen ter bevordering van investeringen die op relatief korte termijn resultaten kunnen opleveren. Het doel is dus niet subsectoren te identificeren of te prioriteren op basis van het algemeen belang ervan voor de landbouwsector of de economie.

**De subsectoren die een groot potentieel hebben voor het aantrekken van nieuwe investeerders en het genereren van ontwikkelingsvoordelen voor Suriname zijn: groenten/fruit, granen/dierenvoer, kokosnoten, varkensvlees en aquacultuur.** De belangrijkste aanbeveling van het rapport is twee van deze subsectoren te selecteren voor prioritaire ondersteuning en vervolgens een campagne voor te bereiden en uit te voeren die investeringen en strategische hervormingen zal bevorderen. Een overzicht van verdere aanbevelingen is opgenomen in Tabel i hieronder.

## Winningssector

De winningsindustrieën spelen een centrale rol in de Surinaamse economie. Bauxiet was het grootste deel van de vorige eeuw de dominante industrie. De winning en export zijn recent echter tot stilstand gekomen vanwege uitputting van de toegankelijke voorraden. Goud heeft zich ontpopt als de belangrijkste winningsindustrie. Deze industrie omvat private industriële goudmijnen en substantiële ambachtelijke en kleinschalige mijnbouwoperaties (AKM) die een belangrijke bron van werkgelegenheid vertegenwoordigen. De nationale oliemaatschappij Staatsolie slaagt er al decennialang in onshoreolie te winnen tegen lage kosten en onlangs zijn nieuwe perspectieven voor offshoreolie geïdentificeerd.

Er is potentieel voor een nog grotere bijdrage van de sector aan de Surinaamse economie. Er zijn aanwijzingen voor significant extra winningspotentieel, en dit zowel in de bestaande industrieën als bij nieuwe delfstoffen. Benutting van dit potentieel zou hogere exportinkomsten, nieuwe investeringen en banen kunnen opleveren en de afhankelijkheid van de bestaande sleutelsectoren kunnen verminderen. Ook is er ruimte voor een beter beheer van de winningsindustrieën en dat kan op de lange termijn aan de gehele bevolking ten goede komen. Dit kan bijvoorbeeld door bestaande informele activiteiten te introduceren in de formele economie en het sociaal en milieugerelateerd beheer te verbeteren.

Er zijn echter veel factoren die de sector ervan weerhouden om het volle potentieel te bereiken. Zo is er niet veel betrouwbare geologische informatie over delfstofvoorraden die kan worden gebruikt om het investeringspotentieel te bevorderen. Het juridisch en institutioneel kader voor milieugerelateerde en sociale bescherming is onderontwikkeld en dit veroorzaakt onzekerheid over de voorwaarden en gevaar voor schadelijke gevolgen. Het gehele juridisch en institutioneel kader voor de sector is aan hervorming toe. Mijnbouwrechten worden slecht beheerd, het juridisch kader geeft de staat aanzienlijke discretionaire bevoegdheid bij het onderhandelen over investeringen, en de institutionele capaciteit om de sector te reguleren is zwak en versnipperd over verschillende instellingen. Er is weinig gedaan aan het ontwikkelen van lokale toevoerketens teneinde verbindin-

gen tot stand te brengen tussen investeringen in de winningsindustrie en de rest van de Surinaamse economie.

Dit rapport analyseert het ondernemingsklimaat voor de winningsindustrie teneinde opties te identificeren voor het aantrekken van nieuwe investeringen en tegelijkertijd het bestuur van de winningsindustrieën beter te verbeteren zodat er positievere en duurzamere voordelen kunnen worden gerealiseerd voor de Surinaamse economie en bevolking. **In de eerste plaats wordt aanbevolen het potentieel van Suriname op het gebied van delfstoffen beter te begrijpen en te bevorderen en tegelijkertijd essentiële sociale, milieugereerde, juridische en institutionele, alsmede sectorale beleidshervormingen te implementeren.** Specifieke aanbevelingen zijn in Tabel ii hieronder opgenomen.

## Overzicht Van Beleidsaanbevelingen

**TABEL I Aanbevolen Prioritaire Hervormingen voor de Landbouwsector**

Aandachtsgebied	Specifieke aanbevolen actie
Prioritaire ondersteuning ter bevordering van investeringen in subsectoren	<p><b>Selecteer twee subsectoren voor investeringspromotie</b> uit de lijst van sectoren met investeringspotentieel op de korte termijn: groenten/fruit, granen/veevoer, kokosnoten, varkensvlees en aquacultuur.</p> <p><b>Strategische actieplannen ontwikkelen en uitvoeren gericht op beleidshervorming ter bevordering van investeringen in de twee subsectoren.</b> Door middel van diepgravend onderzoek van elke subsector: de belangrijkste investerings- en exportbeperkingen identificeren; hervormingsplannen ontwikkelen die de beperkingen verlichten; waardevoorzstellen voor investeerders en lijsten van investeerdersdoelgroepen opstellen; handreikingen inleiden voor lokale en buitenlandse investeerders door ondersteuning in de vorm van informatie en het elkaar helpen vinden (<i>match-making</i>).</p> <p><b>Een inter-ministeriële taakgroep Projectuitvoering oprichten</b> voor het uitvoeren van deze investeringspromotieplannen, wellicht in samenwerking met MHIT, LVV en IDCS.</p>
Verbetering van het algemeen investeringsklimaat voor de agrosector	<p><b>Beperkingen voor toegang tot exportmarkten voor de agrosector aanpakken</b>, met name door de inspecties en certificeringsfaciliteiten voor voedingskwaliteit te verbeteren; door de markttoegang te verbeteren, in het bijzonder door niet-tarifaire handelsbelemmeringen aan te pakken in CARICOM; en door boeren meer technische ondersteuning te bieden zodat zij aan de normen kunnen voldoen. Deze hervormingen dienen te worden gecoördineerd met de programma's van andere ontwikkelingspartners actief in de betreffende subsectoren.</p> <p><b>Inventarisatie en publicatie van de bestaande procedures en eisen voor toegang tot land</b> voor investeringen in de landbouw teneinde potentiële geïnteresseerde investeerders meer transparantie en informatie voor investeringsbesluiten te bieden.</p> <p><b>Institutioneel raamwerk voor het bevorderen van investeringen verduidelijken</b> door de oprichting van één overheidsinstantie die bevoegd wordt voor het bevorderen van investeringen en door de bevoegdheid van deze instantie wettelijk te regelen in het kader van de herziening van Investeringswet.</p>
	<p><b>Private investeringen in agrarische staatsbedrijven aantrekken</b>, op basis van informatie verkregen uit een interne toetsing—uit te voeren door de OvS—van de juridische en beleidsmatige eisen voor het bevorderen van privatiseringen en het opstellen van een actieplan voor het prioriteren en samenstellen van specifieke investeringsmogelijkheden voor ondernemingen.</p> <p><b>Het beleidskader voor investeringen verbeteren</b> ter bevordering van investeringen in de landbouw en directe buitenlandse investeringen in het algemeen, door de wettelijke bescherming van investeerders te verbeteren en de investeringsstimulansen bij te werken in een herziening van de Investeringswet.</p>

**TABEL II Aanbevolen Prioritaire Hervormingen voor de Winningssector**

Aandachtsgebied	Specifieke aanbevolen actie
Bevordering van het potentieel voor delfstoffen	<b>Een uitvoerig geologisch programma financieren en introduceren</b> voor het verzamelen, interpreteren en stimuleren van nieuwe geologische gegevens betreffende de beschikbaarheid van delfstoffen.
Sociale en milieugerelateerde zaken	<b>Het programma betreffende kwik bevorderen</b> voor een verdere afname van het gebruik van kwik in de goudwinning, specifiek met het oog op ratificatie van het Minamata-verdrag inzake kwik. <b>Een strategische sociale en milieugerelateerde beoordeling verrichten</b> teneinde specifieke behoeften te identificeren voor een beter sociaal en milieugerelateerd beheer, een consensus over hervormingsplannen te bereiken onder belanghebbenden en passende hulpmiddelen voor strategische planning te verkrijgen.
Juridische en institutionele hervormingen	<b>Voortgang maken met de herziening van de mijnbouwwet</b> , met een focus op een vermindering van ruimte voor discretionaire bevoegdheid voor investeringsstimulansen en een versterking van het kader voor mijnbouwrechten. Voor de subsector Mijnbouw: <b>Een institutionele beoordeling verrichten met het oog op het vaststellen van specifieke plannen voor het oprichten van een Delfstoffen Instituut</b> Voor de subsector Olie: <b>Beleid maken voor de scheiding van de regelgevende en operationele taken van Staatsolie</b> en een plan opstellen voor een afzonderlijke regelgevende instantie
Hervormingen per sector	Als prioriteit in het sectoraal beleid, <b>maak door een beleid te maken dat de respectieve rollen van de overheid en de private sector uiteenzet voor het ontwikkelen van de winningsindustrie</b> teneinde duidelijkheid te verschaffen, richting te geven aan overheidsplannen en informatie te verstrekken voor investeringsbesluiten. <b>Voortgang maken met het Winningsindustrieën Transparantie Initiatief</b> teneinde de transparantie van overheidsinkomsten uit de winningssector te vergroten.
Analyses voor de langere termijn	<b>Bestaande leveranciersrelaties beoordelen</b> tussen grote winningsoperaties en lokale toeleveranciers en ontwikkelingskansen en -behoeften identificeren voor toeleveranciers teneinde meer verbindingen tot stand te brengen tussen de winningssector en de rest van de economie. <b>Fiscale modellen opstellen</b> van verschillende scenario's voor fiscale kaders teneinde meer inzicht te verkrijgen in de implicaties ervan voor het realiseren van inkomsten en het aantrekken van investeringen.



# **Executive Summary**

Suriname is a small economy driven by its abundant natural resources. The extraction and processing of its significant bauxite, oil, and gold deposits have historically accounted for around 30 percent of gross domestic product (GDP) and as much as 90 percent of exports. Agriculture is another important sector of the economy, contributing more than 10 percent of exports in recent years, but it is concentrated and dependent on commodities as well. The two sectors together account for an estimated 40 percent of total employment in the country. Suriname's economy benefitted significantly from favorable global prices for its commodity export prices early this century, achieving real GDP growth of 4.7 percent per year from 2001 to 2013.

As the commodity boom ended in recent years, however, the economy began to contract, reflecting Suriname's dependence on the extractives sector. The Government of Suriname redistributes revenue earned from gold, oil, and bauxite through significant public sector employment. Outside of the extractives sector, the private sector is generally underdeveloped, with most firms engaged in non-tradable services often linked to extractives. This vulnerability to commodity price fluctuations has led to increased calls for economic diversification and private sector-led growth from government and civil society in Suriname.

**This report seeks to inform the Government of Suriname about strategies to diversify the economy, with a focus on increasing private investment and removing constraints to competitiveness in agriculture and extractives.** Recent policy research about diversification highlights the benefits of developing better products and entering new markets, in addition to developing new industries. 'How' you produce and export, in terms of product quality, can be more important than 'what' you produce and export. Suriname has existing productive capacity and abundant natural resources in agriculture and extractives, indicating a comparative advantage. Both also offer the potential to generate substantial export revenue, a key policy goal of the Government of Suriname given the current economic challenges. But current production and export is concentrated in a few commodity products, and both sectors face constraints to growth. This report provides policy recommendations to guide the Government of Suriname in its efforts to create an enabling environment that facilitates new investment and increased competitiveness in agriculture and extractives.

## Agriculture Sector

Suriname has abundant land and water and a favorable growing environment for many products that could supply domestic demand (replacing current agricultural imports) and be exported to the Caribbean and global markets. Agriculture has been a traditional growth sector, and rice, bananas, fish, and shrimp are already important export products. Suriname has talented agro-entrepreneurs, several existing processing facilities have been certified to international standards, and foreign agribusiness firms have expressed interest in potential new investment opportunities.

However, the sector faces significant constraints. Agricultural exporters report challenges with quality compliance and market access; laboratory facilities for food safety certification are limited, and firms face non-tariff barriers in many export markets. Domestic labor costs are high, and large estates often rely on migrant workers from other Caribbean countries. The majority of land is publicly owned, and processes and procedural requirements to access land are not transparently understood, especially for foreign investors. There are state-owned agricultural estates with underutilized productive assets, but efforts to increase private investment such as through privatization or concessions have been limited.

To increase agricultural production, including diversifying products and targeting new export markets, there is significant need to stimulate new private agribusiness investment in Suriname. Given the investment climate constraints facing the sector, proactive reforms by the Government of Suriname will be necessary to improve the enabling environment for agribusiness investment. World Bank Group experience is that a targeted industry or ‘subsector’ approach can be the most effective way to generate concrete investments from such agribusiness reform and investment promotion efforts.

This report presents the findings of an agribusiness ‘sector scan’ to identify subsectors with high potential for investment attraction. The analysis considers both the potential commercial value to new investors and the potential development value to Suriname of new investment in the subsector. The scan also considers specific constraints to new investment and exports, with the goal of identifying opportunities for ‘quick wins’ in terms of attracting new investment. The purpose of the analysis is to identify subsectors for initial value chain support and investment promotion efforts, not to identify or prioritize subsectors based on their overall importance to the agriculture sector or economy.

**The subsectors identified as having high potential to attract new investors and generate development benefits for Suriname are fruits and vegetables, cereals and animal feed, coconuts, pork, and aquaculture.** The main recommendation of the report is to select two of these subsectors for priority support, and then design and implement a strategic reform and investment promotion campaign. Additional recommendations are summarized in Table iii below.

## Extractives Sector

The extractive industries play a central role in Suriname's economy. Bauxite has been the dominant industry for most of the past century, although extraction and exports have come to a halt recently as accessible reserves were exhausted. Gold has emerged as the primary extractive industry, including private industrial gold mines and substantial artisanal and small-scale mining (ASM) operations that represent a significant source of jobs. The state oil company Staatsolie has been successfully extracting low-cost onshore oil for decades, with new prospects for offshore oil recently identified.

There is potential for even greater contribution of the sector to Suriname's economy. There is evidence of potential for significant additional extraction, both in the existing industries and of new minerals. Exploiting this potential could increase export revenue, generate new investment and jobs, and decrease dependency on the existing core industries. There is also scope to better govern the extractive industries to benefit the entire population in the long term, such as through bringing existing informal activates into the formal economy and improving social and environmental management.

However, many factors constrain the sector from achieving its full potential. There is little reliable geological data about Suriname's mineral reserves that could be used to promote investment potential. The legal and institutional frameworks for environmental and social protection are underdeveloped, creating uncertainty about requirements and risk of harmful impact. Indeed the legal and institutional framework for the sector as a whole needs reform; there is poor management of mining titles, the legal framework leaves significant discretion with the state to negotiate investment deals, and institutional capacity to regulate the sector is weak and fragmented across institutions. There has been little development of local supply chains to create linkages between extractive investments and the rest of the Surinamese economy.

This report analyzes the enabling environment for the extractives sector to identify options to attract new investment while at the same time better governing the extractive industries to achieve more positive and sustainable benefits for the economy and people of Suriname. **The main recommendation is to better understand and promote Suriname's mineral potential, while at the same time implementing critical social and environmental, legal and institutional, and sector policy reforms.** Specific recommendations are provided in Table iv below.

## Summary Policy Recommendations

**TABLE III Recommended Priority Reforms for the Agriculture Sector**

Focus area	Specific recommended action
Priority subsector investment promotion support	<p><b>Select two subsectors for priority investment promotion support</b> from the list identified as having high potential for short-term impact: fruits and vegetables, cereals and animal feed, coconuts, pork, and aquaculture.</p> <p><b>Design and implement strategic reform and promotion action plans for the two subsectors.</b> Through a deep dive into each subsector: identify key constraints to investment and export; develop reform plans to ease the constraints; prepare investor value propositions and target investor lists; and initiate outreach to local and foreign investors with information and match-making support.</p> <p><b>Establish a cross-governmental implementation task force</b> to implement these investment promotion action plans, likely including participation from MTIT, MOALF, and IDCS.</p>
General investment climate improvements for agribusiness	<p><b>Address constraints to agribusiness export market access</b>, in particular improving food quality inspection and certification facilities; promoting market access, especially addressing non-tariff barriers in CARICOM; and increasing technical support for farmers to meet standards. These reforms should be coordinated across different development partner programs, including with the initial work on prioritized subsectors.</p> <p><b>Review and publicize procedures and requirements for land access</b> for agricultural investment to increase transparency and inform investment decisions of potentially interested investors.</p> <p><b>Clarify institutional arrangements for investment promotion</b>, establishing one agency with investment promotion mandate and providing a legal basis for that agency's mandate through the Investment Law reform process underway.</p> <p><b>Pursue private investment in agriculture SOEs</b>, informed by an internal Government of Suriname review of the legal and policy requirements to advance privatizations and development of an action plan to prioritize and package investment deals for specific enterprises.</p> <p><b>Improve the investment policy framework</b> for promoting investment in agriculture and FDI in general, by strengthening investor legal protections and updating investment incentives through an updated Investment Law.</p>

**TABLE IV** Recommended Priority Reforms for the Extractives Sector

Focus area	Specific recommended action
Promoting mineral potential	<b>Finance and launch a comprehensive geology program</b> to acquire, interpret, and promote new geological data about mineral resource availability.
Social and environmental	<b>Advance the mercury program</b> to continue reduction of mercury usage in gold mining, with a specific goal of ratifying the MINAMATA convention on mercury. <b>Conduct a Strategic Environmental and Social Assessment</b> to identify specific needs for improved social and environmental management, build stakeholder consensus around reform plans and lead to appropriate strategic planning tools.
Legal and institutional reforms	<b>Advance the mining law reform</b> , with a focus on decreasing room for discretion in investor incentives and strengthening the framework for mining titles. For the mining subsector: <b>conduct an institutional assessment to define specific plans to establish a mineral institute</b> . For the oil subsector: <b>establish a policy to separate the regulatory and operational roles of Staatsolie</b> and plan for a separate regulatory body.
Sector reforms	As a priority sector policy, <b>establish a policy that details the respective roles of the government and the private sector in developing the extractives industry</b> to provide clarity, guide government planning, and inform investment decisions. <b>Advance progress with the Extractive Industries Transparency Initiative</b> to increase transparency around government revenue from the extractives sector.
Longer-term analytical work	<b>Assess existing supplier relationships</b> between large extractives operations and local suppliers and identify supplier development opportunities and needs to increase linkages between the extractives sector and the rest of the economy. <b>Conduct fiscal modeling</b> of different fiscal framework scenarios to understand implications for revenue generation and investment attraction.



## Introduction

Suriname is a small economy of 543,000 people with abundant natural resources. The extraction and processing of its significant bauxite, oil, and gold deposits have historically accounted for around 30 percent of gross domestic product (GDP) and as much as 90 percent of exports; in 2014, they were 76 percent of total exports (OEC 2016). Benefitting from favorable export prices for these commodities early this century, real GDP grew by 4.7 percent per year from 2001 to 2013, resulting in a per-capita income of US\$9,680 in 2014 (WDI 2016).

As the commodity boom ended in recent years, however, so too did Suriname's economic performance. Gold and oil prices fell, Suriname's main bauxite mine closed in 2015 as accessible reserves were exhausted, and the economy fell into crisis. GDP growth halted, and latest estimates are that the economy will contract by nearly 7 percent in 2016 (WEO 2016). From 2012 to 2015, government revenue from mining fell from 10.1 percent of GDP to 3.1 percent (IMF 2016) and the current account fell from a surplus of 3.3 percent of GDP to a deficit of 15.7 percent (WEO 2016). Poverty data are limited, but the poverty headcount is expected to rise given the economic contraction and stabilization measures the government has had to take, such as devaluing the Surinamese dollar and increasing utility prices.

This vulnerability to commodity price fluctuations reflects a characteristic of Suriname's economy that is shared by many resource-rich countries: dependency on the extractives sector. The government redistributes revenue earned from gold, oil, and bauxite through significant public sector employment. Outside of extractives, the private sector is generally underdeveloped; most non-mining private firms engage in non-tradable services often linked to extractives or import



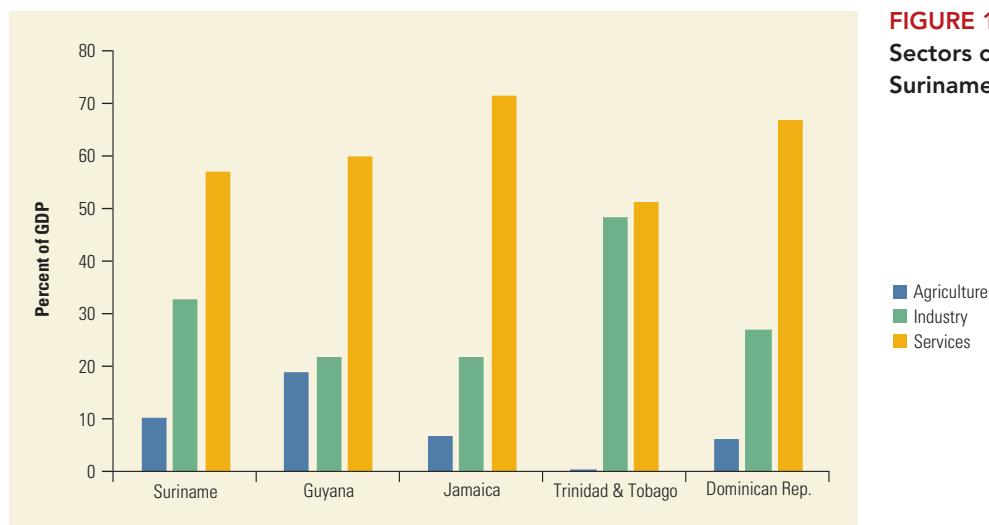
goods not produced in Suriname. Suriname's economy ranks 110 out of 144 in the Global Competitiveness Index (WEF 2014). Agriculture is a historically important sector, contributing 13 percent of exports on average over the past 10 years; but this sector is concentrated and dependent on commodities as well, with bananas, rice, fish, and shrimp accounting for 90 percent of the exported products.

The Government of Suriname calls for economic diversification to decrease dependence on extractives and increase the resilience of the economy. The 2016–18 Stabilization and Recovery Plan acknowledges dependence on natural resource exports as a primary cause of the crisis and proposes an investment program with a focus on diversification of the economy. This builds on the 2012–16 National Development Plan, which includes a goal of promoting private sector-led economic diversification, including through private investment in high-potential growth sectors; the plan also calls for enhancing the sustainability of mining by improving the regulatory framework. The World Bank Group (WBG) and other development partners support the Government of Suriname in implementing these plans (see for example WBG 2015).

However, international experience with policy efforts to promote diversification suggests that it is important to ask what kind of diversification, and for what purpose. Research has found evidence that diversification does drive growth, but only for some economies (such as low-income economies; see for example IMF 2014); while other research finds little evidence that more diversified economies have greater productivity growth or job creation, especially when diversification gets away from the economy's comparative advantage (Gill et al. 2014). Recent thinking about diversification highlights the benefits of developing better products and entering new markets in addition to developing new industries. 'How' you produce and export, in terms of product quality, can be more important than 'what' you produce and export (Lederman and Maloney 2012). This holds for the resource-intensive sector, in which the priority may be to maximize domestic upstream and downstream linkages to diversify within the sector. Diversification through product upgrading and new market development requires integration through foreign trade and investment, which accordingly requires making life easier for exporters and investors.

The agriculture and extractive sectors in Suriname offer significant potential for diversification into better products and new markets. Suriname has existing productive capacity and abundant natural resources in these sectors, indicating a comparative advantage. But current production and export is concentrated in a few commodity products. There is scope to take advantage of the significant amounts of unutilized agricultural land and support investments in new products and higher-quality exports. There is similarly scope to take advantage of the presumed unexploited resource deposits for the private sector to invest and diversify within extractives. Both sectors also offer potential for inclusive growth; mining and agriculture together account for an estimated 40 percent of total employment in Suriname, creating opportunities for linkages to small-scale producers and miners and strengthening domestic value chains.

**This report seeks to inform the Government of Suriname about strategies to diversify the economy, with a focus on increasing private investment and removing constraints to competitiveness in agriculture and extractives. In-**



Source: WDI 2014.

Note: Measured as value added as percentage of GDP.

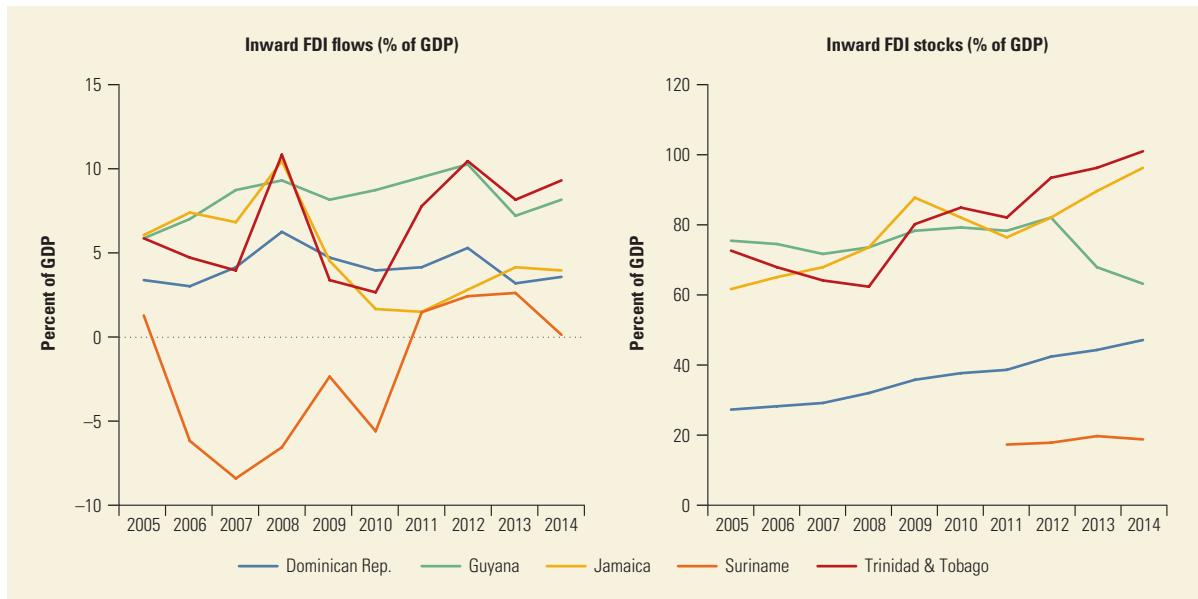
creasing private investment, both foreign and domestic, will be necessary given the fiscally overstretched public sector and the need to competitively integrate into global value chains. Both sectors face constraints to competitiveness, and analytical understanding of how to address these constraints is needed to unlock the markets to new investment and facilitate exports of products from Suriname. The report focuses on generating policy recommendations to guide the Government of Suriname in its reforms and public investments to create an enabling environment that facilitates new investment and increased competitiveness in agriculture and extractives.

## Structure of the Economy

Suriname's economy is driven by the extractives sector. The industrial sector including extractives accounts for more than 30 percent of GDP, higher than most comparator economies (Figure 1.1). Mineral taxes and other revenues have accounted for 30 to 40 percent of total government revenue in recent years (IMF 2016), which is then redistributed through significant public sector employment that accounts directly for an estimated 40 percent of the formal labor force and an additional 20 percent through state-owned enterprises (SOEs). The services sector accounts for nearly 60 percent of GDP and is dominated by trade and transport activities that are linked to extractives (WBG 2015). Agriculture accounts for 10 percent of GDP, despite the country's abundant land and forest resources.

Despite being an open economy, trade and regional integration are very limited. Suriname has a very open economy, with imports plus exports equal to or greater than GDP most years, and the country is a member of several trade agreements (notably CARICOM and an economic partnership agreement between EU

**FIGURE 1.2 Inward FDI Stocks and Flows in Suriname and Comparators**



Source: UNCTAD 2014.

Note: data on stocks in Suriname prior to 2011 are not available.

and CARICOM). However these are barely utilized by Surinamese companies, which remain relatively isolated with little regional integration. Exports are dominated by commodity products (gold, oil, bauxite, rice, and bananas). Imports are much more diversified, and are focused on meeting the industrial and consumer demand that is not supplied through local production.

The lack of economic integration is reflected in low levels of inward foreign direct investment (FDI). Inward FDI flows are very volatile and have been negative for much of the past decade (Figure 1.2). This has resulted in a stock of FDI around 20 percent of GDP, much lower than in comparator economies. Sectoral investment data is lacking, but anecdotal evidence suggests that this foreign investment is dominated by the extractive industries, with disinvestment or investment in new mines accounting for the volatile annual flows.

## The Private Sector and Investment Climate

This section presents an overview of the private sector and investment climate across sectors of the economy in Suriname. Specific issues affecting agribusiness and extractives are discussed below in chapters 2 and 3.

The private sector in Suriname is dominated by small family firms engaged in non-tradable services such as construction, retail, trade, transportation, and hospitality. There are around 200 large private companies with more than 100 employees, which outside of mining tend to sell financial or other non-tradable services

to the government or the extractives sector or import goods not produced in Suriname. Data on the private sector is very limited, but previous company registration data indicates that less than 7 percent of firms engage in agriculture, forestry, agro-processing, or manufacturing.<sup>1</sup>

The financial services sector is underdeveloped, constraining domestic investment. Financial intermediation is low due to the small size of the economy, high local currency interest rates, and high unremunerated reserve requirements. Domestic credit to the private sector is 35.5 percent of GDP, well below the average of 54.5 percent across LAC (WDI 2016). Access to finance is cited as a major constraint by 36.2 percent of firms in Suriname, above the 30.5 percent LAC average (Enterprise Surveys 2010); this constraint was emphasized in discussions with the private agribusiness sector. There are no rules on accounting principles or financial statements for firms, and poor standards for smaller firms limit their bankability. Non-banking financial services such as factoring and leasing are underdeveloped (Drum 2013). There is no credit bureau or moveable assets registry, although efforts are underway to establish the legal basis for such financial infrastructure.

Private sector growth and investment are further hampered by cumbersome business regulations. Starting a business in Suriname takes a very long time: 84 days for men and 85 days for women, with a cost of 101 percent of income per capita, compared to a much lower average of 32 days and 32 percent of income per capita across LAC (Doing Business 2017). Processes for enforcing contracts, registering property, and construction permitting are also measured by Doing Business to be slow relative to comparator economies. Customs and trade regulations are cited as a major constraint by 35.8 percent of firms compared to 18.6 percent in other LAC economies (Enterprise Surveys 2010).

There are few explicit restrictions to FDI but many legal and administrative barriers exist, such as the need for special industry licenses and lack of an arbitration tribunal (Elias 2012). There is also a general lack of transparency and room for discretion in the negotiation of specific investment projects, as elaborated in chapter 3 below with regard to investment projects in mining. The investment law allows fiscal incentives to be granted on an investor-by-investor basis without rules for automatic eligibility. As a result, investment benefits for overseas investors can vary according to the sector and the company's negotiating strength. Domestic companies are critical of favorable arrangements negotiated with outside investors that provide competitive advantages relative to existing companies. Given the lack of established criteria for investment benefits, many agreements regarding concessions for large FDI projects have had to be approved by the National Assembly, creating room for political influence in the negotiation of commercial agreements.

Although land in Suriname is abundant, there are obstacles regarding its availability and access. About 95 percent of the total land area is publicly owned and allocated under lease by the government. However, systems for identifying property owners and registering land titles are underdeveloped, and processes for accessing land are not transparently understood and leave room for discretion in the application review. These issues create obstacles to accessing reliable leases for agricultural production and titles for mining.

The labor market in Suriname is rigid and there is a significant skills gap. Hiring and firing regulations for firms are strict, including requiring approval from Ministry

of Labor to fire an employee and a local labor check before a foreign worker may be hired (Elias and Kamau 2014). Public sector employment offers life-long positions with social benefits, competing with private sector job opportunities. There is evidence of a skills gap, with 65.6 percent of firms in Suriname identifying an inadequately educated workforce as a major constraint, nearly double the 34.2 percent average in LAC (Enterprise Surveys 2010). Only 2 percent of firms offer formal training, compared to 44.4 percent in LAC (Enterprise Surveys 2010), and despite a wide range of vocational training options, many training paths are seen as rigid with relatively little responsiveness to private sector demand.

There is significant government involvement in the economy and low levels of market competition. There are 144 SOEs in Suriname operating across most commercial sectors of the economy, including mining, agriculture, tourism, transport, and others. There is interest from the government in privatization of SOEs, but little progress has been made. Market competition is limited in general: Suriname is ranked 98 out of 144 economies in intensity of local market competition according to the Global Competitiveness Index, with associated factors including ineffective anti-monopoly policy, protection from foreign competition by burdensome customs procedures, and restrictive regulation of FDI. The case-by-case granting of incentives can bias larger and better-connected firms in the private sector. There is no competition commission or other entity in Suriname that regulates competition.

The current macroeconomic situation also affects the investment climate for the private sector. Since November 2015, the Surinamese dollar fell in value from 3.25 per US\$ to around 7 per US\$ in October 2016, due to an initial devaluation of the fixed exchange rate and subsequent flotation of the currency. Domestic consumer purchasing power has fallen with the general economic contraction and as the price of imported consumer goods has risen. The currency depreciation should increase the price competitiveness of tradable Suriname products, such as those that target export markets or compete with imported goods. However, at the same time, imported inputs relied on for example by agricultural or manufacturing firms have become significantly more expensive. Private businesses report difficulty in obtaining foreign currency needed to pay for imported inputs. In general, the economic contraction and exchange rate fluctuations create uncertainty and hence increased risk for potential investors.

## Political Economy of Reform

Many of the constraints to private sector competitiveness mentioned above have been known in Suriname for some time, but the political economy and governance context has historically not been conducive to reforms. Political decision-making in Suriname relies on consensus among a range of political factions and stakeholder groups, resulting in a tendency to maintain the status quo. Policy changes often must be enacted via legislative action at the National Assembly, rather than through ministerial decree or regulation. Administrative and technical capacity in the government is often limited. As is mentioned in subsequent chapters, many

ministries have had institutional reforms identified and planned for years, with little to no implementation.

However, there have been recent signs of reform potential. A Competitiveness Unit was established several years ago in the Vice President's office to initiate a business environment legislative reform agenda; progress has been made in several priority areas, with the Competitiveness Unit now permanently housed under the Ministry of Trade, Industry & Tourism. The Ministry of Natural Resources has initiated a reform program to modernize the sector including to increase transparency in collaboration with the private sector and civil society. Following reelection in May 2015, the current presidential administration appointed several reform-minded ministers to lead the economic recovery agenda.

In general, the severity of the crisis currently affecting Suriname creates an important opportunity to implement needed reforms. If enough political will can be generated to enact reforms that encourage new private investment in diversified economic activities, there is the potential for Suriname to break away from its traditional growth path and move towards a more sustainable, inclusive, competitive, and diversified economy.

## Sector Competitiveness Analysis

The rest of this report focuses on the agriculture and extractives sector to identify options to increase investment and address constraints to competitiveness of the private sector.

Chapter 2 focuses on the agriculture sector. Given the significant production potential but current concentration in a few export products, the analysis focuses on identifying specific industries or 'subsectors' with the potential for new investment attraction, competitive upgrading, and growth. The analysis is based on the World Bank Group's "A Guide to Investor Targeting in Agribusiness" (2014), which establishes a 'sector scan' methodology to identify promising agribusiness subsectors for new investment promotion. The analysis reviews the 15 main agricultural and fisheries subsectors in Suriname, balancing the potential value of new commercial investment to private investors with the potential value of new investment to Suriname and its economy. Recommendations include government using the analysis to prioritize subsectors with the potential for relatively quick removal of constraints and promotion of new investment; implementing strategic action plans for the prioritized subsectors; and in general strengthening the external orientation of the sector.

Chapter 3 focuses on the extractives sector, specifically on the enabling environment for new exploration and extraction in mining and oil. The report identifies policy, legal, and institutional reforms that can facilitate new investment and improve the benefits that the sector generates for the rest of the economy. Recommendations include identifying and promoting the existing mineral potential; improving social and environmental management; updating the legal framework; establishing a mineral institute and updating regulatory oversight of the oil sector; and improving revenue transparency.

Chapter 4 concludes with a focus on specific actionable policy reforms or public investments that government can pursue to address constraints and benefit from opportunities identified in the analysis. The fundamental goal is to help Suriname open markets to new investment that can generate jobs and exports and contribute to a more competitive and sustainable economy.

## Notes

- 1 Julien 2013. The underlying company registration data are from 2008.

## The Agriculture Sector

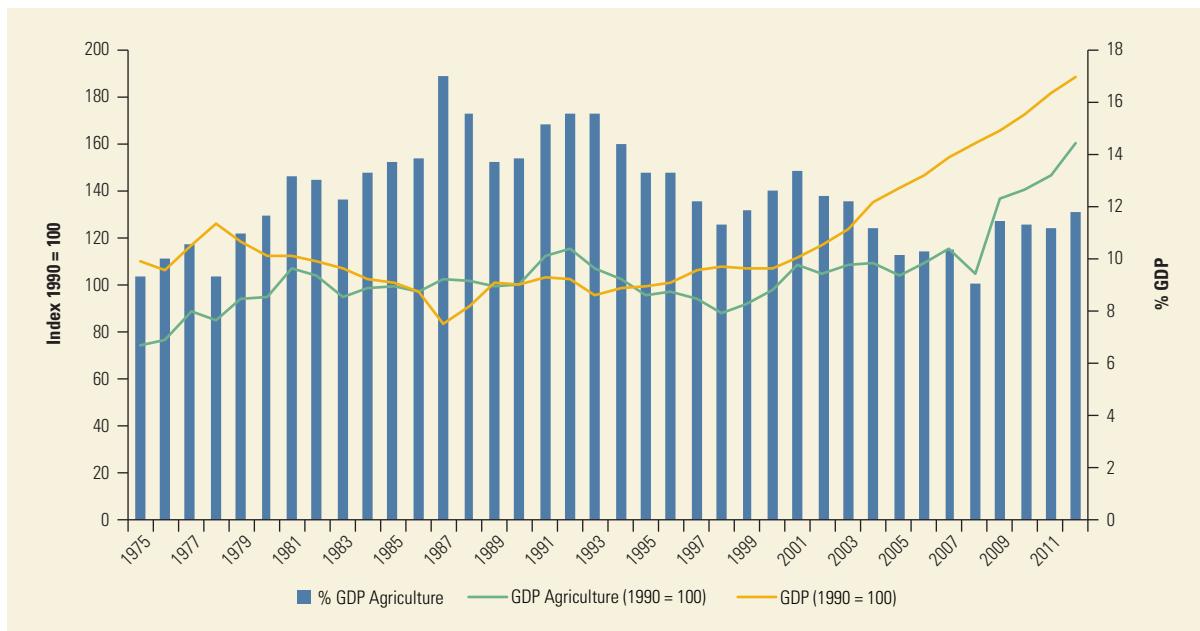
Suriname has an abundance of land and water and a favorable growing environment for numerous products that could be used to supply domestic demand currently being met through agricultural imports, to supply many of the food and other agricultural product needs of the Caribbean, and to increase exports to other global markets. Agriculture has been a traditional growth sector, historically accounting for as much as 17 percent of Suriname's GDP. Rice, bananas, and fish and shrimp are already important export products. The country has talented entrepreneurs operating in agriculture and agro-processing, despite the risks and difficulties, and several existing food companies have good-quality processing facilities and have been certified to the highest international standards. Foreign agribusiness firms have expressed interest in potential investment opportunities.

Despite this potential, the country has not taken advantage of its assets to attract significant investment, increase agricultural production, or diversify into new products and export markets. There are numerous reasons for this, including a policy environment that is not conducive to private sector investment in agriculture. There has been limited action to implement reforms on which there is widespread agreement, such as the need to address food safety issues, improve irrigation and drainage, facilitate access to land, improve export market access, and increase private investment in agricultural SOEs.

To achieve the targeted increase in agricultural production and exports, there is significant need to stimulate new private agribusiness investment in Suriname. Domestic investors in the agriculture and fisheries sectors could build on existing activities, but they almost unanimously highlight the existing high rates of com-



**FIGURE 2.1 Agricultural Production in Real Terms and as a Percentage of GDP**



Source: Panadeiros 2014.

mmercial interest for Surinamese Dollar (SRD) loans as being the major constraint to future investment. Several agribusiness companies have ambitious plans for expansion, but have been unable to implement them at current interest rates of 15 to 18 percent. Foreign direct investment (FDI) offers potential external capital to invest in the sector, building on the existing albeit limited base of Dutch and other European investment and expressed interest from investors elsewhere in South America and Asia.

Given the investment climate constraints hindering new private investment, proactive reforms by the Government of Suriname may be necessary to improve the enabling environment for agricultural investment. Such policy enhancements often go unnoticed by distant investors with little knowledge of the reforming country, suggesting that proactive investment promotion may be required to reach out and inform potential investors of new opportunities. WBG experience is that a targeted industry or ‘subsector’ approach can be the most effective way to generate concrete investments from such agribusiness reform and investment promotion efforts.

This chapter seeks to inform government efforts to implement a subsector-driven investment climate reform and investment promotion program. Following an overview of the sector, the chapter focuses on the results of an agricultural sector scan to identify high-potential subsectors. The purpose of this analysis is not to conclusively identify subsectors that should be the long-term focus of agricultural development strategies, but rather to inform prioritization of subsectors for initial value chain support and promotion efforts to stimulate new agribusiness investment in Suriname.

## Background on the Agriculture Sector<sup>1</sup>

Agriculture has been a traditional growth sector in Suriname but has been in decline for decades, although the sector is recovering in the last few years. The sector's contribution to GDP diminished from a peak of 17 percent in 1987 to just 9 percent in 2008 (Figure 2.1). Nevertheless, agricultural production increased in real terms by more than 50 percent from 2008 to 2012, beating the historical output level.

Around 95 percent of the country is tropical rainforest. About 1.5 million hectares are theoretically suitable for agricultural activities, of which 85 percent are located in the coastal plains and 15 percent on the river terraces in the interior. However, much of this land is inaccessible and also requires drainage infrastructure. Some suffers from brackish water. It is estimated that as much as 230,000 hectares (15 percent of the total) were cultivated in the past. Currently, only around 60,000 hectares are farmed (MOALF 2015). This decrease reflects a combination of unfavorable macroeconomic conditions, fluctuating world prices for example for rice, and poor management that caused many large state-owned enterprises to close since the 1980s.

Of the 60,000 hectares under production, about 50,000 are for rice, almost all in the Nickerie District in the west of Suriname, and 1,950 are for bananas in Nickerie and Saramacca. Family holdings consist of 42,000 hectares, of which about 7,000 are actively cultivated, including for tree crops.<sup>2</sup> Since 2000, there has been an increase in land cultivated in Nickerie, but a decline in other areas (Kaplan 2015), reflecting the efforts to upgrade the rice and banana subsectors, largely with EU support in areas such as infrastructure development and research. Both state-owned land and privately leased land tends to be underutilized.

The agricultural sector consists of both large-scale and modern subsectors and a large number of small family farms using traditional labor-intensive production practices with suboptimal inputs. The sector is comprised of an estimated 10,234 farms, of which 10,188 are considered family owned. Around 90 percent of land holdings are smaller than five hectares and about one third of these (30 percent of total) are smaller than half a hectare. The largest holdings (50 hectares and up) are all found in the coastal zone (Roseboom 2012). Only 10 percent of farms employed labor other than family members. In 2011, the sector employed around 17 percent of the labor force (IDB 2013), with an estimated 18,000 people working formally or informally in agriculture (Panadeiros 2014).

There are two wet and two dry seasons: a long rainy season from April to August, a long dry season from August to December, a short rainy season from December to February and a short dry season from February to April. Heavy rainfall creates problems for agricultural production on heavy clay soils as drainage is generally needed. These same soils require irrigation during the dry seasons (Roseboom 2012; Kaplan 2015).

## The Main Agricultural Subsectors

Rice is the main staple of Suriname. Until 2010 over 50 percent of exports went to the EU but EU preferences have been eroded and from 2011 Jamaica has been

the dominant market. Production is mainly in the Nickerie District and is highly mechanized. The high cost of production and marketing and the high import component of the costs mean that Suriname is unlikely to be able to compete on world markets outside of the Caribbean. Another historically important crop, bananas, has similarly lost EU preferences recently. Production is on two estates totaling around 1,950 hectares. Scope for expanding export sales also seems relatively limited. In contrast, there has been considerable interest in increasing plantings of fruit, with export markets in mind. There is a large new development of citrus, mainly limes, oranges and grapefruit, and other fruits attracting interest include podosiri or acai, papaya, mango and pineapple. With the exception of some temperate vegetables, Suriname is largely self-sufficient in vegetables. There is also a good export trade to the diaspora in the Netherlands for products such as okra and string bean. Expanding exports depends on the increased availability of air freight and on the ability of smallholders to produce to GlobalGAP standards. There are exports of root crops, including cassava. A new factory built to process cassava was constructed with a government-backed loan, but is not presently being used.

Cocoa, coffee, and coconuts have all been plantation crops in the past but commercial production is now limited. Sugar was also a plantation crop but there is now no production, despite recent, discarded plans to use sugar as a source of bio-ethanol. There are ongoing discussions on proposals to redevelop cocoa, which has excellent market prospects. The availability of labor may be the main constraint to achieving this. Similarly, oil palm has been grown commercially in the past and there are proposals to revive the industry. The main concern here is that existing proposals require the clearance of primary forest. Apart from the unwelcome environmental implications, this would exclude the possibility of Roundtable on Sustainable Palm Oil (RSPO) certification.

Fish and shrimp have been a major export of Suriname for some time and provide considerable employment on vessels and at the many processing facilities. Scope for export expansion in terms of quantity appears limited given the need to limit catches to sustainable levels. Adding value to products presently exported fresh or frozen in bulk is being explored. Aquaculture has been attempted with mixed performance, and could have potential if linked with existing fish processing ventures, although required certified feed imports are expensive and several existing aquaculture investments are closing.

Poultry is the main source of animal protein consumed in Suriname. Domestic production accounts for around one half of meat production, but still only about one-third of total poultry meat consumption as there are significant imports of cheap cuts from the USA and whole, frozen birds from Brazil. The industry plans to expand production to supply the Caribbean market; but anecdotal evidence identifies difficulties in overcoming non-tariff barriers. Suriname is almost self-sufficient in eggs. Domestic pork and beef production both amount to around 2,000 tons a year. A meat processing company is rapidly expanding its production capacity in response to the higher cost of imports. Small ruminant production is marginal.

An SOE runs the country's one dairy. This buys fresh milk from farmers and also imports milk powder. Three private companies produce milk from imported powder only. Prices paid to farmers and prices paid by consumers for the SOE's milk

are set by the government. Viability of dairy production in the future would appear to require an upgrading of milk production practices.

Until recently, animal feed was largely blended locally from imported concentrate, soybean and corn (maize), together with small quantities of local rice, rice bran and cassava. Recently, there has been a move to increase usage of rice to replace imported corn and several investors also have plans to grow both soybean and maize to replace imports. If successful, this could eventually form the basis for an export industry.

Much agro-processing involves use of imported ingredients. Companies using some domestic ingredients include a food sauce and jam processor, a candied fruit producer, a frozen vegetable producer, and a fruit juice manufacturer. These are all certified to international standards. There is small-scale production of chocolate, roasted coffee, organic coconut oil, acerola (*Malpighia emarginata*) products and honey as well as fish drying, and preparation of vegetables in vinegar. There are also spice and dried herb producers. One fruit and vegetable company prepares ready-to-eat fruits for supply to hospitals as well as pre-packaged vegetables for sale on the local market, aimed at exploiting the potential market for labor-saving products.

## **Institutional Environment for Agriculture**

The Ministry of Agriculture, Livestock, and Fisheries (MOALF) is the main agency responsible for agricultural development, with other involved ministries including the Ministry of Health, the Ministry of Environment, and the Ministry of Trade, Industry & Tourism (MTIT). MOALF has six departments: crops; livestock; fisheries; research, marketing & processing; planning; and administrative services. In addition to its headquarters in Paramaribo, it has regional offices. Its budget has fluctuated considerably in recent years as a result, initially, of a steep decline in Netherlands Development Assistance and of generally reduced government revenues from mining (Derlagen 2013).

Extension services are fragmented, being the responsibility of the three MOALF technical departments. Research is also carried out by the Centre for Agricultural Research in Suriname (CELOS), by the Anne van Dijk Rice Research Centre (ADRON), which is based in Nickerie and works mainly on rice, and by the MOALF's own technical departments. Reports from the private sector indicate poor coordination, lack of a market orientation, and poor linkages with extension services. Recent diagnostic work by the WBG confirms many of these perspectives, finding that improving technology transfer linkages between the local research community and industry and improving the national quality infrastructure system would be two ways to improve the innovation system in general and for agriculture in particular (WBG 2016a).

MOALF reform plans have been considered by the ministry, but implementation of changes has been slow. A 2004 report by the Surinamese Center for Economic and Social Research recommended privatization or closure of all agricultural state enterprises; a reduction in the role of the Ministry, to focus mainly on policy formulation and evaluation, with implementation responsibilities being handed over to commodity boards with strong private sector representation; public foun-

dations to provide research, extension, sanitary and phytosanitary (SPS) and veterinary services; and district authorities taking over some regional functions of the Ministry (Roseboom 2012). Although some of these ideas are still under discussion, there has been limited progress with reform by the government. Nine policy white papers covering rice, bananas, fisheries, agribusiness in horticulture, livestock, agricultural health and food safety, aquaculture, and sustainable agriculture in the interior were prepared in 2011; these have guided later papers, such as the National Agricultural Innovation Strategy (MOALF 2013), but implementation of reforms identified has been slow. A National Agricultural Policy for 2016–2020 is being developed that will build on the National Development Plan for Suriname that is under preparation.

MOTI's role in agriculture has focused on agroprocessing and trade and investment, including through its general mandate of economic diversification, investment climate reforms, and improved investment promotion. In recognition of the fact that Suriname cannot continue to be solely dependent on the extractive industries, new staff have been recruited to help facilitate industrial development. Efforts are being made to improve collaboration with MOALF, with emphasis on developing a value chain approach.

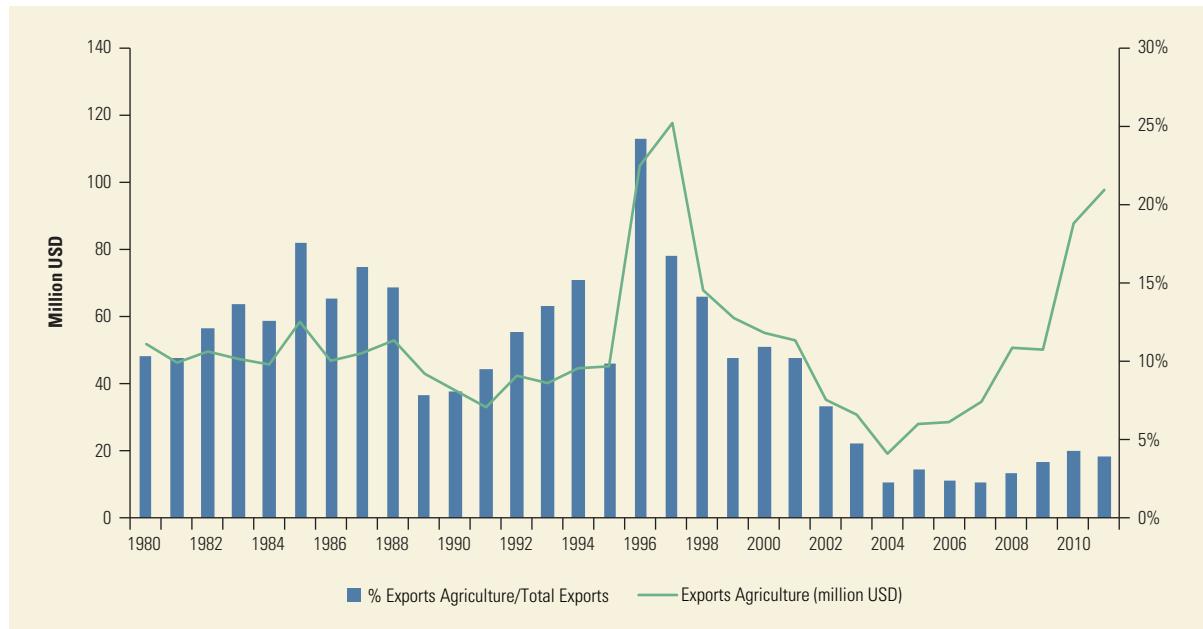
The Investment and Development Corporation Suriname N.V. (IDCS) also has an important role in the agriculture sector, initially with a mandate to privatize agricultural SOEs (more on this below), now currently focused on investment promotion including in the agriculture sector.

## **State-Owned Enterprises**

There are more than 100 SOEs operating across sectors in Suriname's economy, including petroleum, public utilities and transport, other services, and agriculture. Within agriculture and fisheries, SOE activities have included fruit, rice, bananas, and oil palm production estates; infrastructure and port provision; and processing. Larger SOEs include the milk purchaser and processor, Melkcentrale (MCP); a citrus farm (Alliance); a rice seed production and rice milling facility (SML); and the body that inspects and certifies commercial exports of fish and shrimps, Viskeuringsinstituut (VKI). MOALF is responsible for the salaries of the staff of many SOEs, as they are regarded as civil servants.

Several public agricultural enterprises have been associated with weak governance and poor institutional capacity and have suffered from economic and financial difficulties. Several SOEs have previously closed operations or gone bankrupt, with assets now unutilized. For example, there are three large estates that were formerly used for oil palm production that are now largely unutilized. Most of the SOEs in the sector have a commercial orientation, suggesting that many may be unnecessarily duplicating the role of the private sector.

There is official Government of Suriname policy to pursue privatization of agricultural SOEs. IDCS was initially established in 2010 with the primary mandate to sell agricultural SOEs, and at one time was responsible for six public agricultural enterprises with a total of 15,000 hectares of arable land. There was a successful sale of the government-owned banana company to an overseas investor in 2014, but otherwise there has been little progress with implementation the privatization

**FIGURE 2.2 Agricultural Exports in Value and as a Percentage of Total Exports**

Source: Panadeiros 2014.

agenda, with lack of legal clarity regarding how the transactions may be conducted. In 2016 the function of privatizing the estates was transferred back to MOALF, and the future of these public SOEs is presently unclear.

## Agricultural Trade

Analysis of trade outcomes and competitiveness for Suriname's agriculture sector reflects the concentration of agriculture exports and the constraints hindering exports of agricultural products. Full results of the trade outcomes and competitiveness analysis are in Appendix A, and this section presents the main findings.

Suriname is a net agricultural importer. Bananas, rice, and fish and shrimp are important export crops, and agricultural exports have been increasing in recent years (Figure 2.2), but a large agro-food deficit remains. In general, agricultural imports are far more diversified than exports.

Besides significant exports of bananas, rice, and fish and shrimp, agriculture exports in Suriname are limited with no other export product averaging more than US\$1 million over the last three years (see Table 2.1 below). From 2013 to 2015, exports of rice, bananas, and fish and shrimp averaged US\$40 million, US\$30 million and US\$34 million, respectively. Among other products, only dairy (US\$338,660), cassava (US\$408,105), and fruits and vegetables (US\$910,928) averaged more than US\$100,000 over the same period.<sup>3</sup> Other products, such as coconuts as well as many individual fruit and vegetable products, are exported only intermittently and in very low quantities.

**TABLE 2.1 Export Values for Selected Agribusiness Products, US\$**

	2013	2014	2015
<b>Animal products</b>			
Beef	9,753	11,624	11,017
Dairy	286,307	329,997	399,677
Pork	0	29,860	33,430
Poultry	2,542	11,577	74,969
Fish and shrimp	35,194,030	35,194,030	31,373,134
<b>Vegetable products</b>			
Bananas	32,301,219	32,605,117	24,503,415
Cassava	355,570	513,471	355,274
Cocoa	0	—	—
Coconut	8,478	13,691	9,845
Fruits and vegetables*	999,208	983,676	749,901
Palm oil	0	—	0
Rice	37,879,361	49,994,645	39,978,536

Source: Suriname customs

Note: ‘..’ indicates trace exports of less than US\$5,000.

\*This measure of exports of fruits and vegetables is for fresh produce and does not include exports of processed products.

Analysis of the revealed comparative advantage (RCA) of Suriname's agricultural exports validates the importance of bananas, rice, and fish and shrimp in the export basket. Table 2.2 below shows the RCA index for each agricultural export product with recent annual exports exceeding US\$100,000.<sup>4</sup> The index is well above 1 for bananas, rice, and fish and shrimp, revealing a comparative advantage for Suriname in those products. Cassava is the other export product with a RCA index suggesting a comparative advantage.

In most agricultural industries in Suriname, agribusiness exports and markets are very thin. With the exception of fish and shrimp products, exports are heavily concentrated in terms of markets, with one or two destinations accounting for the majority of exports, such as for fruits and vegetables, cassava, and coconuts (approximately 95 percent to the Netherlands); rice (65 percent to Jamaica); and bananas (52 percent to France and 39 percent to the Netherlands). Suriname benefits from duty free access to the CARICOM markets, but the country has not been able to translate this advantage into exports; exports to Jamaica and Trinidad & To-

**TABLE 2.2 Revealed Comparative Advantage (RCA) Index for Suriname's Agricultural Exports**

Product	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Bananas	12.0	25.8	30.5	33.4	40.3	44.2	49.4	46.9	36.4	39.1	38.3
Cassava	6.5	11.9	5.6	4.8	3.4	6.1	5.2	2.8	1.1	1.4	2.9
Dairy	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1
Fish and shrimp	15.8	14.5	13.1	13.3	12.4	12.2	13.9	13.9	8.3	10.1	9.3
Fresh fruits and vegetables	1.4	0.8	1.1	0.7	0.8	0.6	0.6	0.8	0.4	0.4	0.4
Rice	11.8	13.8	10.4	7.6	10.2	10.3	16.2	19.6	12.8	14.9	14.8

Source: UN COMTRADE.

Note: products listed include those with agricultural exports greater than US\$100,000 in recent years.

bago, the two largest markets, are limited to fish and rice exports to Jamaica, with virtually no exports to Trinidad & Tobago.

One factor contributing to the lack of diversified markets for export products is non-tariff barriers and Suriname's challenges with quality compliance. The country presently lacks a suitable laboratory to ensure that export products comply with national or commercial safety standards. Between 2008 and 2011, Suriname received 15 alert notifications for exports to the European Union because maximum residue levels had exceeded permitted levels (IDB 2013). There is also concern about the level of mercury in some water supplies, resulting from mining activities, and about the potential for animal diseases such as foot and mouth and swine fever.

Companies attempting to develop exports to CARICOM countries have alleged significant protectionism in the Caribbean, particularly by Trinidad and Tobago. Products affected include poultry and poultry products, honey, and fresh and processed vegetables. Exporters indicate that the Government of Suriname could take more proactive steps to address their concerns by developing SPS protocols with Caribbean countries and by making available laboratory facilities so that the claims of importing countries can be rebutted.

Many processors in the country are certified to a high international standard, such as through 'export readiness' training conducted by the Suriname Business Forum, but still encounter trade barriers. For example, one poultry producer has ISO 2200 certification as well as GMP+ certification for feed imported from the Netherlands, but has been unable to obtain approval for exports to the Caribbean. Another poultry company has received Yum Brands certification that qualifies it to supply a range of demanding fast food chains,<sup>5</sup> to its knowledge the only company with such certification in the Caribbean, but this also is considered insufficient to gain access to some CARICOM countries.

Another issue affecting agricultural exports is Suriname's trade preferences. Exports of bananas and rice to the European Union depends on trade preferences. Tariff and other protection is being gradually eroded, meaning that Suriname will have to face stronger competition. This is already acknowledged by the rice sector, which now sells most of its output to the Caribbean. While the EU has provided considerable compensatory assistance through the Banana Accompanying Measures program, this is unlikely to last, as ACP countries are expected to become competitive. Yield increases will be required to compensate for the loss of preferences.

Despite recent improvements, Suriname's shipping links remain relatively limited, especially to North America. There are daily flights to Miami but no direct flights to other US or any Canadian destinations. Suriname does have about ten direct flights to Amsterdam weekly, which are used to export perishable produce, primarily fish, crustaceans, vegetables, and fruit; however, some exporters report that there is often a shortage of cargo space. Shipping routes for sea freight are equally limited with most cargo requiring transshipment through Port of Spain. Customs procedures are measured to be slow and are cited as a significant burden by firms across sectors. A small project based in MTIT is in the initial stages of planning an Electronic Single Window to reduce the processing time for export documentation, but full implementation has not yet begun.

Exchange rate fluctuations will also impact agricultural exports going forward. Recent currency depreciation should have a positive competitiveness impact on

Suriname's agricultural exports as they become less expensive on global markets. This does need to be balanced with the rising cost of imports, which are a critical source of agricultural inputs. In the medium term, mineral extraction is expected to increase, and oil prices are already on the rebound. Thus, in the medium to long term, given the continued dominance of the extractives sector in the economy, a renewed appreciation of the Suriname dollar seems possible.

## **Private Investment and the Investment Climate for Agribusiness**

Although specific data are limited, new private investment in agribusiness is relatively low. Anecdotal evidence is that recent foreign investment has consisted of the FDI by the Belgian investor in the banana sector and a few investments by individual Dutch investors in citrus production, duck rearing, and candied fruit processing. Negotiations have been held with the Government of Suriname regarding large investments in cocoa and oil palm with companies from Israel, China, and Malaysia, but no investment has resulted to date. Other private investment has come from existing domestic agriculture companies, which account for just 3.5 percent of the total number of registered companies according to the most recent data (Julien 2013) and face constraints related to domestic access to finance (as mentioned in the introduction).

Discussions with the private agribusiness sector and analysis of the investment climate identifies numerous constraints specific to agribusiness investment. In addition to several mentioned previously, such as the cumbersome business regulatory environment that affects the private sector generally and the significant presence of SOEs that are underutilizing potentially productive agriculture assets, the following agribusiness constraints have been identified:

- While there is abundant land for agriculture, there are obstacles regarding its availability and access. Approximately 95 percent of the total land area is publicly owned and, where appropriate for use for agricultural or other purposes, is allocated under lease by the government. However, the systems for identifying property owners and registering land titles are underdeveloped, and specific processes and procedural requirements for accessing land are not transparently understood. Anecdotal reports indicate that processing land applications can take years. Lack of clear ownership of land presents problems for potential large-scale commercial investments as well as for smaller ventures. Even ownership of government land is sometimes disputed by those who claim traditional rights to that land.
- Labor costs are high and agricultural labor supply is low. There are already many workers from other Caribbean countries, particularly Guyana and Haiti, in the agricultural sector. Agricultural entrepreneurs report a considerable reluctance of people to take on farm work. As in many other countries, the smallholder sector is aging, with a median age for males of 50 (Panadeiros 2014). The labor availability constraint is expected to increase if the mining industry expands. Combined with the heavy import component of much agriculture

production, production costs tend to be relatively high, making many investors already in Suriname question the viability of bulk commodity exports.

- Lack of transparency regarding foreign investment negotiation affects the agriculture sector. When land concessions for large deals are established by act of the National Assembly, it can be very difficult and costly to reallocate that land in the event that the initial investment plan falls through. Several foreign investors considering the agriculture sector have sought loan finance with government guarantee in their investment negotiations, transferring investment risk to the government.
- Market access issues pose a risk to potential investors. As noted above, Suriname faces stringent non-tariff barriers in European and Caribbean markets, particularly in relation to product safety considerations. The food safety regime is underdeveloped, with the lack of laboratory facilities causing problems for commercial exporters who require certification to access overseas markets. Poor inspection and other facilities at the airport jeopardize quality control exercised at earlier stages. Exports to the Caribbean are constrained by the lack of standards in Suriname that comply with those established in the CARICOM region, and there has been slow progress in developing phytosanitary protocols with CARICOM countries; thus companies planning to invest with the intention of exporting to the Caribbean cannot assume that complying with international standards will necessarily ensure access.
- Public irrigation and drainage infrastructure is lacking. As the main cultivated areas of Suriname are largely flat and only just above sea level, good drainage is essential. Existing drainage is largely by gravity, and salinity in the dry season is a problem. Many drainage channels have been neglected and have not received adequate public investment. Irrigation is essential in the drier seasons but poor infrastructure and lack of funds for pumping means this is sometimes unavailable. Commercial farms have recently suffered from flooding and potential investors will want to be assured that soil drainage will not be a problem.
- Climate change also poses a longer-term risk to agricultural production and investment. An increase in the sea level could lead to flooding of the lowest-lying areas on the coastal plain and substantial damage to agriculture. There has already been infiltration of seawater, causing disappearance of farmland and significant erosion as far as several hundred meters inland in some areas. River waters are salty due to the penetration of sea water at high tide. In turn, the salt water penetrates into the drainage channels, causing salinity of soils that are not well drained. Recommendations to increase resilience to climate change include declaration of a coastal strip as a natural reserve, which would be used to protect farmland further inland (Kaplan 2015), and returning the lowest lying polders to wetlands so that they could be raised by natural sedimentation (Mertens 2008). There has been an increase in pests and diseases reported by the rice sector and attributed to climate change, and difficulties rearing animals in tropical zones, such as the parasites that effect small ruminants, could be exacerbated by climate change.

## **Priority Agribusiness Subsectors for Investment Promotion**

The agribusiness sector offers significant possibilities for investment, growth, and diversification into new products and markets. It is critical that public policies to promote investment in the sector consider that investment must offer commercial value to investors as well as development value to Suriname. For example, an investment that provides few jobs and involves heavy offshore costs may be potentially profitable for the individual investor but may not contribute much to the economy of Suriname. Alternatively, products that replace imports with potential benefits for the economy may have been attractive to Suriname but may make little sense for investors if the products are more profitably produced or processed elsewhere. Public efforts to increase private investment should also consider whether investment should be sought from outside the country or within. In some cases, FDI may offer relatively little new value to the economy as local investors have already shown that they have the capital, technology, and know-how to invest in a subsector.

Bearing in mind these issues, and drawing heavily on the “A Guide to Investor Targeting in Agribusiness” methodology (World Bank 2014), the criteria in Table 2.3 below were established for a sector scan to identify priority subsectors for investment promotion to both foreign and domestic investors in Suriname’s agriculture sector. Based on conversations with government about policy priorities, the intention is to identify those subsectors that could make a significant contribution in terms of macroeconomic benefits through increased exports or import replacement; in terms of increased linkages between large investments and existing smallholder producers; and in terms of general upgrading of the value chains in Suriname. Offsetting such potential benefits, however, are the risks always associated with all commercial investments. Subsectors likely to face high risks, such as market risks and climate change, are accordingly scored lower in terms of their attraction to investors.

Another key aspect of the sector scan is to identify constraints hindering new investments and exports in the subsectors and consider the ease of removing them. The purpose of the analysis is to inform short-term investment promotion plans, and subsectors in which some key constraints may be easily addressed and new investment mobilized quickly are prioritized accordingly; this entails identifying ‘low-hanging fruit’ and developing reform action plans that can achieve quick wins for the economy. Other subsectors may also benefit from subsequent investment promotion support, or from longer-term subsector development; the sector scan analysis is not intended to replace such longer-term plans.

The findings and recommendations that follow flow both from direct interviews with the private agribusiness sector in Suriname and from background research conducted as part of the sector scan. The prioritization of agribusiness subsectors results predominantly from discussions with the private sector in Suriname, supplemented by the findings of existing sector studies. The analysis of constraints to specific subsectors and to agribusiness in general also result primarily from discussions with the private sector, but draw more heavily on existing analyses. The pri-

**TABLE 2.3** Methodology for Evaluating Priority Subsectors

Criteria and evaluation factors	Evidence reviewed	Benefits for Suriname / investor
<b>1. Direct impact on jobs and exports</b> Will introduction or growth of the subsector have significant impact on:		
The balance of trade	Projected export growth or import reduction in the subsector	Suriname
Direct and indirect jobs	Projected jobs in the sector and support services	Suriname
Higher value jobs	Opportunities for well-paying jobs	Suriname
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	Demand, supply, price trends in Suriname, on world markets or both	Investor
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	International, regional or domestic companies (with the necessary funding, know-how, and market access) known to be interested in investing in this subsector in Suriname.	Suriname
Does Suriname offer a conducive business environment for this activity?	Ease of doing business in the subsector Role and function of any SOEs in the subsector Access to land in the sub-sector	Investor
<b>3. Indirect impact on inclusiveness or spillovers</b> Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	Number of existing activities in the subsector	Suriname
Improvements to overall value chain performance	Potential for addressing observed weaknesses	Suriname
Greater inclusiveness leading to improved farmer incomes	Estimated increases in small and medium-scale farmer incomes resulting from investment	Suriname
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	Relative need for infrastructure (power, transport, ICT, water) in the subsector and Suriname's ability to meet this need	Investor
Does Suriname have the people, skills, and supporting services to compete in this subsector?	Suriname's supply of key skills and supporting services needed in this sector relative to main competitors	Investor
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	Suitability of natural endowments for profitable operations in the subsector	Investor
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?		
Are there market risks?	Potential for disruptions to markets or significant price changes on world markets	Investor
Are there risks from climate change?	Likely impact of climate change on production	Investor
Are there phytosanitary and other safety and quality risks?	Potential diseases affecting production and risks when selling to export markets	Investor
Are there political and other risks, such as related to land availability	Possible political interventions inconsistent with profitable private sector operations	Investor
What are the risks that barriers to growth in this subsector will be difficult to remove?	Estimate of time, resources, or willingness required to remove major barriers (market growth, input supply, infrastructure, skills, policies, etc.)	Investor

mary investment climate constraint mentioned by the private sector was limited access to finance and high domestic interest rates. Specific recommendations related to domestic access to finance are not made in this report, as they extend beyond the specific scope of the agribusiness sector, and the need for agribusiness investment finance can be addressed to some extent through attraction of foreign investment. Other issues highlighted by the private sector include the need for improved quality certification; addressing market access barriers, especially in CARICOM; and the need for production assistance and improved linkages with farmers. Issues related to access to land; SOE privatization; the need for improved institutional arrangements; and strengthened investment policy, arose from the existing literature and WBG analysis, and were also discussed and validated with the private sector.

The sector scan analysis effectively reviews all significant agricultural subsectors, given relatively small number of such subsectors in Suriname. The exceptions include: (1) eggs, in which Suriname is self-sufficient with negligible export opportunities; (2) coffee, for which Suriname has only one small plantation, with an eye primarily on the tourism (or heritage) market, relatively poor growing conditions, and an inability to compete with bulk producers such as Brazil and Vietnam; (3) sugar, which is unlikely to be commercially viable in the Suriname context other than as a source of raw material for rum; (4) small ruminants, given relatively low quantities of existing production, although there are signs of market demand within CARICOM; and (5) agro-processing as a stand-alone subsector, as this is considered in the analysis of the products that could be processed. Because of the small quantities of fruits and vegetables presently being exported and the wide variety produced, individual fruit and vegetable products were not considered as separate subsectors; follow-up work will need to look in more depth at specific products.

The full detailed subsector evaluation scores are in Appendix D. Table 2.4 below provides a summary of the main factors affecting the outcome of each individual subsector assessment. The evaluation does not attempt to quantify possible benefits of new investment in dollar terms. Rather, it reflects the need for Suriname to diversify its agricultural sector through new investment, either from outside a subsector or from those already in the subsector who can see significant new market opportunities by adding value.

Figure 2.3 plots the evaluated subsectors in a matrix that compares the “value of investment to Suriname” and the “attractiveness of the value proposition to the investor” using the quantitative evaluation scores assigned to each subsector. As shown in Table 2.3 above, criteria 1 and 3 reflect the value to Suriname, and criteria 4 and 5 the value to the investor, while two of the sub-criteria under Criterion 2 are allocated to investor value and one to the value to the country.

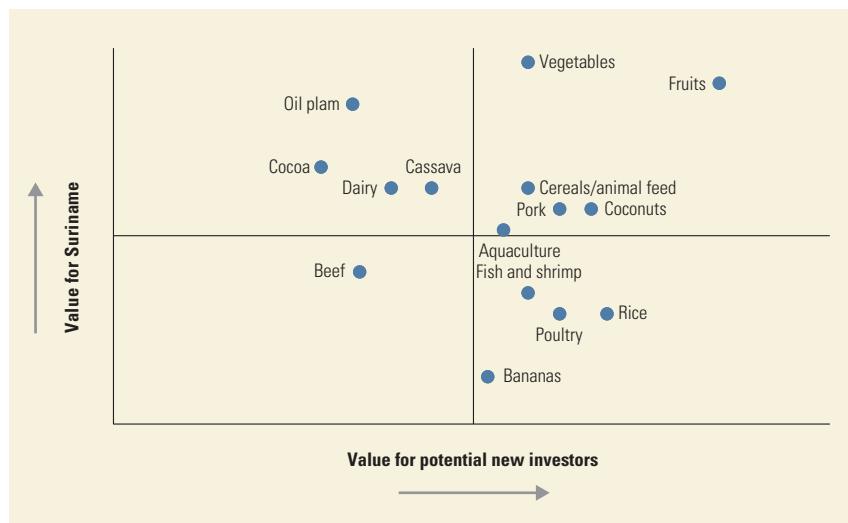
Subsectors located farther to the upper-right of the matrix reflect both a higher potential impact on Suriname and increasing value for potential new investors in the subsector. They are also identified as having relatively easier constraints that could be removed to attract new investment and exports. Based on this analysis, the following subsectors emerge as having high potential for proactive investment promotion:

**TABLE 2.4** Summary Description of Subsector Evaluations

Subsector	Major factors influencing evaluation
Aquaculture	Strong world demand. Existing fish processing and exporting infrastructure. Abundant land and inland water for fish farming. Expensive input costs for certified feed.
Bananas	Loss of preferential access to EU limits export market potential. Supply controlled by one existing company and market would appear to offer limited opportunity for additional investors.
Beef	Domestic demand presently met by existing production. Possible scope to use available land for export to Caribbean if production efficiencies can be improved.
Cassava	New government-owned factory presently underused. Good evidence of acceptable yields and potential for inclusive production throughout the country. Potential markets identified, but demand growth seems limited.
Cereals and animal feed	Domestic and regional market demand, with ability to decrease costly import bill. Regional comparative advantage for cereal production (land availability and climate) and existing feed industry players interested to integrate feed production.
Cocoa	Strong world demand for cocoa. However, production is so far unmechanized, and is reliant on outgrower production globally; there is little current smallholder production in Suriname that commercial investment could take advantage of.
Coconut	Accelerating world demand for higher-value coconut products (virgin oil, water, cosmetics, etc.). Existing and old plantations as well as significant new smallholder plantings reported. Cost-effective collection and the viability of new plantings are undetermined.
Dairy	Potential for privatization of existing state-owned dairy but would need to compete against cheap milk powder imports and address existing deficiencies in milk production.
Fish and shrimp	Controls on fishing limit potential for export expansion and may lead to further declines in harvest. Potential for extra value addition, which would require quality upgrading at the subsector level.
Fruits	Significant Caribbean and European markets for citrus and other fruits. Good growing conditions with harvest mechanization or out-grower schemes possible. Existing processors could expand to carry out juicing for export and domestic market. Need for marketing standards and safety certification.
Oil palm	Good world demand for palm oil and palm kernel oil. Probable use of primary forest land would raise environmental concerns and reduce market potential, as oil could not be certified. Crop not yet mechanized and labor availability problematic.
Pork	Good recent investments in pig production and pork processing. As with other meat sectors, fast-growing domestic, regional, and global demand. Regional comparative advantage for production. Food safety barriers need to be addressed to increase access to export markets.
Poultry	Industry expansion constrained by import of cheap offcuts from USA. Existing companies able to supply present domestic demand but investor from Caribbean could facilitate market access in the region.
Rice	Relatively high-cost production. Ongoing efficiency investments being made by existing mills, access to improved seeds, and new cultivation techniques may expand export market opportunities for existing producers. But the subsector is well covered by existing producers and processors, limiting space for new investors.
Vegetables	Significant Caribbean and European markets for vegetables. With GlobalGAP certification, good possibilities exist to supply a range of vegetables to mainstream supermarkets in Europe and the Caribbean. Need to address cold storage logistics and marketing standards and certification.

**FIGURE 2.3**

**Subsector Prioritization Matrix by Value of Potential New Investment**



Source: Authors' elaboration based on subsector prioritization scores.

**Aquaculture.** Both the limited availability of fish and shrimp in the sea and the numerous regulations regarding catching them suggest that an increase in Suriname's wild harvest will not be possible and, in fact, the harvest is likely to decline. This is a worldwide trend and, as a consequence, demand for farmed fish and seafood is rising rapidly. Suriname has strong advantages for aquaculture development, including land availability and, most important, a large number of fish processors who are looking for raw material to process. There are also well-developed existing export markets including in the Netherlands, USA, Jamaica, and Japan that could be built on. Proactive promotion could involve seeking external investors willing to work with existing processors to develop fish farming.

Although caught fish and shrimp industries are not prioritized for new investment promotion given the existing catch limits, trade competitiveness analysis does indicate that there may be significant opportunities for upgrading the quality of exported fish and shrimp products to target higher-value market segments (see Appendix A). There is an important possibility for investment within the sector to improve the value chain and increase export value from these industries.

**Cereals and animal feed.** Imports of animal feed ingredients is a major cost to the country. Recent exchange rate changes have made the production of many of the basic ingredients of animal feed increasingly viable. While nutrients will still need to be imported, the three domestic feed manufacturers could mix these with domestically produced raw materials such as rice (including byproducts from existing production) and potential new production of maize and soya. Proactive promotion from the government for import substitution purposes could involve support from the various agricultural research agencies, simplification of land allocation procedures, and infrastructure improvement in producing areas.

**Coconuts.** Suriname has existing production, with MOALF statistics estimating that there are more than 1,000 ha of existing palms and that this area has doubled in recent years (MOALF 2015). There are a few existing small processors of coconut products, which could be expanded to meet growing demand for coconut oil, water, and medicinal and cosmetic products, particularly if these could qualify for organic certification. Growth in large-scale plantations may not be commercially viable given the labor requirements and high production costs in Suriname, although one farmer has experimented with a mechanical harvester on recent new plantings of dwarf coconut varieties.

**Fruits.** There is strong interest in fruit production and there appear to be good market export prospects in Europe and the Caribbean (especially given preferential tariff margins of 25 to 30 percent for exports to CARICOM). Suriname also imports around \$50 million a year of fruits and vegetables, suggesting import substitution potential for at least some portion of these imports. At least one domestic processor already has the capacity to process quantities of fruit that do not meet demanding fresh export standards. New plantings are under way but there appears to be scope for additional investments in production of both fresh and processed products. Government support could involve seeking additional external investors, addressing infrastructural difficulties, and providing laboratory and other facilities necessary for food safety and quality assessments.

**Pork.** Suriname is self-sufficient in pork production, with 150 pig farms taking advantage of land availability and production potential. Several large producers use state-of-the-art production techniques, and include vertically integrated operations with small-scale pig farmers and processing facilities. There are still imports of processed pork, with opportunities to increase domestic processing, especially given increasing cost of imports. Exports are currently at a very small level, but several investors have export plans, but face non-tariff barriers including food safety certification constraints to increase supply to export markets.

**Vegetables.** Existing exports of vegetables are relatively limited, with exports of vegetables and fruits together totaling around \$1 million per year, mainly directed at the diaspora. Suriname has abundant land with good growing conditions however, and there seems scope for the development of more-commercial farming operations that would be prepared to meet the international standards required by buyers in Europe and the Caribbean, such as GlobalGAP, in quantities that would permit use of dedicated air freight services. As with fruits, Suriname faces preferential tariff margins of 25 to 30 percent to export vegetable products to CARICOM. Government could be proactive in promoting Suriname among horticultural companies in the Netherlands as a potential source of vegetables and should also address food safety and quality facilitation.

It is important to emphasize that if a subsector is not identified as a priority for investment promotion, this does not suggest that additional investment or other development support for that sector would not be beneficial. In the case of rice,

for example, some of the country's rice mills continue to invest in new milling and packaging equipment to upgrade their efficiency, allow them to remain competitive, and increase their value addition. Fish, shrimp, and bananas may similarly benefit from quality upgrading efforts or other sector development support. The prioritization analysis focuses on subsectors in which new investment could have a significant short-term impact on production and exports, and this prioritization is not intended to supplant other sector development plans.

In addition to considering the potential commercial and developmental value offered by new investment in a given subsector, it is important to also consider the constraints along the subsector value chain to increase production and export competitively. The sector scan analyzed constraints in each subsector, and of the six prioritized in terms of potential value generated by new investment: cereals and animal feed has constraints that are relatively easy to address; fruits and vegetables are more difficult given laboratory issues, quality certification, and logistics; aquaculture requires purchase of expensive certified feed imports; and cassava and cocoa are most difficult given labor intensiveness.

*Prioritized subsectors with constraints that are relatively easy to address:*

- **Cereals and animal feed:** many buyers (such as in the poultry and aquaculture subsectors) require certified feed with GMP—certification if the animal products are targeted for export. There are producer concerns about the lack of laboratory facilities in the country to certify quality. There may be regulatory challenges caused by expansion of the industry into raw material production as inputs for other production processes.

*Prioritized subsectors with relatively more difficult constraints:*

- **Fruits and vegetables:** Product quality and certification challenges are present. The current production practices especially of small farmers have a difficult time meeting GlobalGAP and other EU marketing standards. The lack of laboratory infrastructure is a major constraint to exporters. There are logistics constraints, such as a lack of cold chain infrastructure, airport infrastructure is limited including for export inspection, limited air cargo for export to Europe, and lack of direct flights or small capacity of existing flights to Caribbean countries.
- **Aquaculture:** Certification of fish and shrimp products is required, both to access target export markets (potentially making small-scale production unsuitable) and for inputs of certified feed with the GMP+ certification, which is not currently available domestically, requiring imports. The high cost of finance is a significant constraint to expanding production, which could be addressed by external equity investments.

*Prioritized subsectors with the relatively most difficult constraints to address:*

- **Coconuts:** Investing in small-scale processing to produce high-value coconut products would face relatively few constraints, and could be considered as part of general fruit and vegetable processing potential. But significant increases in production would face constraints to cost-effectiveness given the logistics challenges of collecting production from a variety of geographically dispersed producers, as well as labor costs due the few options for mechanization.

- **Pork:** The main opportunity to increase production is to access export markets, which requires food safety certification that complies with export market requirements. Further investigation is needed to understand the exact laboratory and certification needs for animal exports into for example the CARICOM market, especially considering claims of protectionism in several target markets.

## Recommendations

Two sets of recommendations result from the findings of the agribusiness sector scan analysis: select priority subsectors for investment promotion, and implement reforms to improve the investment climate for agribusiness in general.

### 1. Prioritize and Promote

The purpose of the sector scan is to provide preliminary insight as to which subsectors offer relatively higher potential value to new potential investors and to Suriname's economy. The scan has identified six high-potential subsectors that could be considered for prioritization: fruits, vegetables, cereals for animal feed, coconuts, pork, and aquaculture (and potentially upgrading the quality of wild-caught fish and shrimp exports).

Even this prioritized list is too broad for targeted investment promotion efforts, and the subsectors regarding larger groups of products (fruits and vegetables) need to be further specified. A key first step from this analysis is for **government to coordinate with stakeholders to select specific products or industries within these subsectors for prioritized investment promotion work**. This selection should be specifically focused on informing short-term investment promotion efforts, which can be subsequently replicated for other agribusiness subsectors.

As specific priority subsectors are selected, government should **design and implement strategic reform and promotion action plans for each subsector**. The World Bank Group's Guide to Investment Promotion in Agriculture provides guidance and best practices about how such a promotion campaign could be designed for specific agricultural industries or products; specific steps include:

- Identify key constraints inhibiting investment or exports in the subsector and establish a reform plan with specific steps to remove those constraints. A deep dive into a prioritized subsector can quickly identify the key investment climate constraints most pertinent to that subsector. Government can then agree on specific steps necessary to address the key constraints, using the industry-focused investment promotion target to focus and motivate efforts across relevant ministries or agencies to implement the required reforms.
- Conduct an investment promotion campaign to attract new foreign and domestic investors to the prioritized subsectors. This includes preparing an investor value proposition, highlighting government efforts to remove existing constraints, developing target investor lists, and then direct outreach to local and foreign investors, with information and match-making support to facilitate potential new private investments.

The design and implementation of these reform and promotion action plans would ideally be led by an investment promotion agency with existing staff skilled in investor outreach and marketing. One current institutional challenge is that Suriname does not have one agency with a clear institutional mandate for investment promotion, with current efforts taking place across ministries and agencies on an ad-hoc basis. In the short term, **Government of Suriname will need to establish an ad-hoc implementation task force** for this investment promotion work, ideally involving staff across several ministries and agencies such as MTIT, MOALS, and IDCS.

## **2. Implement Broader Reforms to the Investment Climate for Agribusiness**

The agribusiness sector scan methodology is built on the premise that a targeted industry or 'subsector' approach is an effective way to enable key reforms and generate new investments, and the first set of recommendations above focus on subsector-specific reforms and promotion. At the same time, the analysis identified a range of investment climate issues that constrain agribusiness investments and exports broadly. This section makes recommendations based on these general sector findings, suggesting specific reforms where possible and proposing additional diagnostic work when necessary:

**Upgrade plant and animal health, safety, and quality facilities.** Suriname's producers and exporters need to have available certified laboratories that can identify plant and animal diseases; ensure that maximum residue levels are not exceeded for exported produce; provide convincing evidence to support exporters facing non-tariff barriers; carry out soil samples; test dubious agro-chemical imports; and, in general, assist farmers and exporters to obtain necessary certifications. Such facilities have to provide practical, commercial services to agriculture. Complementary analysis of the innovation system in Suriname similarly recommends the establishment of a national quality infrastructure system to support such certification (WBG 2016a).

The Government of Suriname reports several concurrent plans to establish or improve laboratory facilities providing different testing services for different sub-sectors, supported by different development partners; but progress with operationalizing these facilities has been slow. Priority should be given to coordinating these efforts to establish operational laboratory facilities serving the private sector, with technical assistance obtained to train staff.

**Promote market access, especially within CARICOM.** As product quality certification facilities are improved, there is also a need for more proactive efforts to promote access to high-potential markets for Suriname's agricultural products. Agribusiness firms reported numerous cases of protectionist application of non-tariff barriers in targeted export markets, especially within CARICOM. The Government of Suriname should give focus to addressing these issues through CARICOM to improve its effectiveness at facilitating regional trade; specific steps could include developing SPS protocols with CARICOM members and pursuing avenues to formally raise complaints about the use of non-tariff barriers for protectionism.

These efforts could focus first on the prioritized products and subsectors to build on the investment promotion momentum and help unlock export constraints for those products.

Additional steps are recommended to improve trade facilitation broadly. A previous diagnostic (WBG 2016b) presented a series of specific reforms to enhance the effectiveness and efficiency of customs in Suriname, including improving risk management through post-clearance audits, and strengthening the ASYCUDA Word system to improve customs automation. Additional trade logistics constraints specific to the agribusiness sector include the need to improve air transportation; a detailed diagnostic of specific needs and reform options related to air transport is recommended, ideally starting with a focus on air transport logistics requirements of the subsectors prioritized for investment promotion.

**Improve technical support to farmers and strengthen linkages between processors, exporters and farmers.** Commercial investors in the fruit, vegetable, and tree crops subsectors are likely to have to work with contract farmers or outgrowers (thereby generating important benefits to the current agricultural sector). When GlobalGAP or other certification is required, it is essential that farmers are able to meet necessary standards and understand the reasons for this. Investors rarely have the skills to develop linkages with farmers that are capable of delivering required standards. Government extension support and programs funded by donors and NGOs can provide technical training to smallholders that facilitates linking them to new investment in prioritized subsectors; an upcoming EU-funded agriculture sector support program plans to do exactly this. Such technical support to farmers should be coordinated with investment promotion efforts to ensure that short-term investment generation is able to quickly establish linkages with existing Surinamese producers.

**Clarify and streamline land access and land registration.** The land tenure options and registration procedures for agricultural investors are not clearly specified, creating obscurity especially for foreign investors that may deter potential investment. As a first step to address this issue, the Government of Suriname should clarify what exact steps agricultural investors must take to obtain different types of land tenure as a tool to attract foreign investors. A review of specific requirements and steps could also identify options to simplify and streamline processes that could help upgrade registration and allocation systems, further facilitating investment.

**Pursue private investment in state-owned agricultural enterprises.** Many of the agricultural SOEs control significant amounts of productive land that could be used by private investors for profitable investment. Other SOEs that engage for example in processing could benefit from new private investment and a more commercial orientation. This creates opportunities for privatizations or concessions to bring new private investment into the agribusiness sector. Discussions between the Government of Suriname and private investors about potential investments in these SOEs occur, and Government of Suriname policy is to pursue private investment in these enterprises, but little progress has been made. The

Government of Suriname is recommended to conduct an internal review of the legal and policy requirements to advance privatizations and develop an action plan to prioritize and package investment deals for specific state-owned enterprises. The action plan should include competition considerations to ensure that privatizations or concessions do not have a negative impact on market competition in the agribusiness sector.

**Improve the institutional environment to support agricultural investment and innovation.** Public institutional support can be critical to provide public goods and overcome information asymmetries to facilitate new investment and the adoption of higher-productivity practices in agriculture. Suriname's supporting institutional environment could be improved in several areas. First, the Government of Suriname is recommended to clarify and strengthen the institutional arrangements for trade and investment promotion in the country. Having one agency with a clear mandate to lead investment promotion work is critical to avoid overlapping outreach and potential confusion of foreign investors. Trade promotion support is increasing coupled with such investment promotion services in one agency. But the current institutional arrangements and promotion mandate are not clear: the mandate of IDCS has changed in recent years, InvestSur has a legal basis but is not operational, and there is ongoing public-private dialog about establishing a new Trade and Investment Promotion Agency. Government of Suriname is recommended to make a policy decision about where the trade and investment promotion agency mandate and authority should reside. That mandate and authority should be given legal basis, ideally through reference in the upcoming revisions to the Investment Law. As part of this process, the existing legal framework should be reviewed to ensure all required legal changes are made so the new agency has strong legal footing; this review should include the Investment Law of 2001, the law on InvestSur of 2002, the legal underpinnings of IDCS, and the legal underpinnings of the earlier EU-funded "TIPO" initiative which was set up as a foundation.

Improvements in the institutional support for agriculture and innovation are also recommended. Recommendations above emphasized technical support to farmers and improving capacity to comply with standards, but extension services that support farmers are fragmented and often lack a market orientation. A recent review of the innovation system highlighted the need for a technology transfer function that could improve linkages between the local research community and industry (WBG 2016a), as well as the need to improve the national quality infrastructure system. The public research organization Embrapa in Brazil provides an example of successful agricultural technology development and transfer that could be a model for Suriname (see for example Correa and Schmidt 2014). Embrapa was established as a publicly owned company under the Ministry of Agriculture. Factors for its success in transferring technologies to Brazilian farmers include receiving adequate public funding; a farmer-oriented mission focused on knowledge and technology generation and transfer; and a focus on addressing bottlenecks to developing Brazil's existing comparative advantage, not promoting new activities not consistent with factor endowments.

**Modernize and clarify investment policy and incentives.** Clear, transparent, and rules-based guidelines regarding investment protection and incentives that all investors are entitled to would facilitate investment attraction in agribusiness, as well as other sectors and increase transparency around FDI promotion. Establishing a comprehensive investor protection law that provides basic legal protection guarantees that are commonly expected by international investors, and reviewing incentives that are used to attract agribusiness investment, would improve the investment policy for agribusiness and other sectors.

## Notes

- 1 Further details on the sector are provided in Appendix B, Factors influencing agricultural development, and Appendix C, The main agricultural and fisheries subsectors.
- 2 Reliable agriculture statistics in Suriname are lacking, and data in the literature is sometimes inconsistent, such as in relation to the area farmed.
- 3 These data come from Suriname customs and are for fresh produce, not processed products. There are discrepancies between different data sources as to the export volumes of the different products.
- 4 The RCA index calculates the share of a country's total exports generated by one export product, divided by that product's share of global exports. An index value greater than 1 indicates a revealed comparative advantage for that country for that product.
- 5 These chains include KFC, Pizza Hut, and Taco Bell.



## The Extractives Sector

Suriname's economy has been dominated by natural resource extraction since gold was discovered in the late 19<sup>th</sup> century on the banks of the Lawa River. Bauxite became predominant after the 1920s, driven by the United States' need to secure supply in times of war. In the late 1980s oil was found onshore and became the primary industry by the mid-1990s, overtaking bauxite that was by then in decline. Since the early 2000s, oil, gold, and to a lesser extent bauxite have together dominated Suriname's total exports and driven GDP, government revenues, and employment.

In recent years, bauxite production has come to a halt while the prices of gold and oil have fallen, driving Suriname's economy into recession. As noted in the Introduction, this economic crisis reflects the economy's overreliance on commodities, which are prone to price volatility, and demonstrates the lack of transition towards a more sustainable, inclusive, competitive, and diversified growth model. The latter requires, among others, a long-term vision and policy for the country's economic sectors; a reduction in the dependence on non-renewable resources; more consideration for environmental and social concerns; enhanced economic spillovers and linkages; an improved business environment; and diversification of economic actors and sectors.

The severity of the crisis currently affecting Suriname may generate enough political will for the country to breakaway from its traditional growth path and move towards a more sustainable, inclusive, competitive, and diversified economy. As per the previous chapter, agriculture has a key role to play in such a transition as it offers opportunities to promote economic linkages, to reduce depen-



dence on non-renewable resources, and to promote diversification of products and markets. Extractive industries (mining and hydrocarbons), which already drive the economy, is another sector that could play a key role in this transition.

The objective of this chapter is two-fold: to identify how to improve the enabling environment for the development of new subsectors within extractives (such as new ores and offshore oil) including through attracting new private investment in the sector; and also to identify how to better govern extractive industries for the benefit of the entire population in the long term, such as through bringing existing informal activates into the formal economy and improving social and environmental management. These objectives will ultimately enable 'diversification within the sector' and a better contribution of the extractives sector to the long-term competitiveness and sustainability of Suriname's economy.

## Background to the Extractives Sector

Extractive industries play a major role in the economy of Suriname. As stated in the Introduction, the extraction and processing of its significant bauxite, oil, and gold deposits have historically accounted for around 30 percent of GDP and as much as 90 percent of exports; in 2014, they represented 76 percent of total exports (OEC 2016). Benefitting from favorable export prices for these commodities early this century, real GDP grew by 4.7 percent per year from 2001 to 2013, resulting in a per-capita income of US\$9,680 in 2014 (WDI 2016).

Bauxite, traditionally the lifeblood of Suriname, has become a major concern in recent years. After a century of presence in Suriname, the US-based historical partner Alcoa stopped all operations at the end of 2015 and there remains uncertainty regarding the transfer of its assets (including mines, a refinery, and a dam). Reviving the industry would require heavy investment in infrastructure and energy to reach and process new, often further and lower-quality deposits. At the same time, significant environmental and social liabilities will have to be dealt with. Government has shown interest in taking the operations over but may face huge financial, technical, and reputational challenges in the context of poor prospects for better prices on the international markets.

Industrial gold represents a continuously promising opportunity both for private companies and government. Two world-class mines are currently producing:

- Rosebel mine, run by Canada-based IAMGOLD; it has produced around 3 million ounces (93 tons) between its launch in 2004 and 2015, and is now exploring ways to expand the mine life. The Government of Suriname has a 5 percent free equity participation in the venture.
- Merian mine, owned and operated by Surgold, a subsidiary of US-based Newmont, one of the world's leading gold producers. Construction was recently completed in October 2016 and the mine is expected to have a 400,000 to 500,000 ounce annual capacity (up to 15.5 tons). The government exercised an option to participate in a fully-funded 25 percent equity ownership stake through the state oil company Staatsolie.

The gold sector is also composed of numerous artisanal and small-scale (ASM) gold mining operations. 60 percent of gold production in Suriname comes from this major source of production and employment (IMF 2012), which represents a significant source of livelihoods for several localities. ASM includes a few well-established small mechanized operations (see for instance the public enterprise Grassalco described in Box 3.1 below), but also a vast number of informal ones, which often lead to severe environmental impacts, especially due to pollution resulting from the use of mercury in extraction.

### BOX 3.1 Grassalco, Suriname's State-Owned Mining Company

State-owned mid-scale mining company, NV Grasshopper Aluminum Company, abbreviated NV Grassalco, was founded on 30 August 1971. It was originally established by the Ministry of Natural Resources of Suriname to explore and exploit minerals and ores in the country (with the exception of hydrocarbons) independently or in collaboration with third parties with the intention to develop the mining sector. Initially Grassalco focused on the development of the Bakhuis bauxite deposits but has since diversified its activities into other minerals and locations:

#### **Maripaston**

After conflicts between small-scale miners about stakes in Maripaston became violent, the government decided to award this 1,375 ha area in the district of Para to Grassalco. Once Grassalco was able to reduce the number of miners active in Maripaston to a more manageable number (from 2,500 to < 50), the company started producing gold. The company invested US\$800,000 with the goal of producing at least 65 kilos of gold between 2014 and 2016. In June 2016 Grassalco launched a diamond core-drilling program to demonstrate the presence of gold, needed to feed the Gravity Concentration Plant (GCP) that Grassalco built in Maripaston. Grassalco hopes that further drilling will prove a reserve in order to set up a 'medium-sized' mine and mercury-free processing plant with a much higher daily gold production.

#### **Goliath and Lely**

In the Goliath (26,000 ha) and in the Lelygebergte (96,500 ha) concessions, Grassalco has been actively exploring for gold, diamond and other minerals. In 2015, Grassalco conducted its first diamond core-drilling program but no finds have been reported yet.

#### **Patamacca and Royal Hill**

In the Patamacca (1,200 ha) concession Grassalco mines natural stone (including granite). In Royal Hill Grassalco processes waste rock to crushed stone in cooperation with Rosebel. In 2016 signed an agreement with Zhong Da International Engineering Company (Suriname) N.V to supply China Harbour Engineering Co. (Guyana) Inc. with 100,000 tons of crushed stone, marking Grassalco's return to natural stone exports.

Over the years, Grassalco has been highly dependent on the royalty revenues it has accrued from Rosebel, resulting from the transfer of Grassalco's mineral rights on the Gross Rosebel property to Rosebel Gold Mines. The royalties (2% in kind, price 6.5% > \$425/oz) are deposited into an account controlled by Grassalco. The latter keeps 20% of the royalties and transfers the remainder to the Surinamese government. In 2014, royalties accounted for more than half of Grassalco's total revenues (53%), but in 2015, they accounted for only 35% thanks to the decline in gold prices and to the rise in Grassalco's crushed stone sales.

The oil sector is smaller than mining, but there has been important production since the 1980s due to low-cost onshore oil resources. Staatsolie, the state-owned national oil company, has traditionally led the sector, playing the role of both regulator and operator. In recent years, Staatsolie has accumulated a somewhat unwieldy portfolio of projects that has put significant demands on its technical and financial capacity. The two biggest investments have been an expansion of the existing refinery and the acquisition of 25 percent of the Merian gold mining project. There seems to be a promising prospect for offshore oil, and drilling offshore has just started, considering recent results in neighboring Guyana that have revived hopes of a commercial find.<sup>1</sup>

## Bauxite

Bauxite has been the lifeblood of Suriname for over 100 years. When Alcoa's interest in bauxite became known in 1915, it caused a bauxite stir in Suriname, leading many to apply for concessions for speculative purposes but with limited success. The sector remained largely dominated by Alcoa, particularly after 1958 when its local affiliate Suriname Aluminum Company, L.L.C. (Suralco) signed the Brokopondo agreement with the Surinamese government to develop the country's hydropower and bring the aluminum industry to the country. Under this agreement, Suralco built the Afobaka dam, a hydropower plant, an aluminum smelter, an alumina refinery (Paranam) and other facilities. The Surinamese government agreed to provide the necessary water and property rights, expanded Suralco's bauxite concessions (Figure 3.1), and gave Suralco more land for further geological research (De Surinaamsche Bank 2016).

With the Brokopondo Agreement, Suriname became one of a handful of developing countries with a fully integrated aluminum industry, giving its economy an enormous boost (1957–67: GDP growth rate averaged 8 percent). The Surinamese benefitted from the increased employment, the rise in exports and government

**FIGURE 3.1**

Suralco, Bauxite Concession



Source: Alcoa, 2016.

income and an increase in international reserves. But there were downsides too. Suriname became more than ever dependent on a single product and industry. Starting in the 1980s the sector began to decline but it still accounted for about 5 percent of Suriname's GDP and government revenues in 2010–2015.

The bauxite sector in Suriname is currently in turmoil after Suralco's decision to close down operations. Alcoa has struggled in recent years, as the price for raw aluminum remains under pressure amid China flooding the global markets with steel, aluminum, and other industrial metals (Alcoa 2015). After practically exhausting all the cheap deposits (known as Moengo, Lelydorp, and Caramacca), experiencing persistent high operational costs and rapidly declining bauxite quality, production, sales, and exports. Alcoa informed the government in 2014 that it wanted to leave Suriname. In October 2014, the government and Alcoa signed a Memorandum of Understanding (MOU) regarding the future of the bauxite industry in Suriname. However, the MOU was later withdrawn after critics voiced concerns over perceived unfavorable terms and the lack of transparency of the negotiating process (Pelon and Moreira 2015).

Despite no longer having the backing of the MOU, Suralco decided to close down its mines and the Paranam alumina refinery in the fourth quarter of 2015. As a result, almost 2,000 people were made redundant. Assuming a multiplier effect of 1 to 3 typically used in the mining sector, this means about approximately 6,000 jobs (i.e., around 6 percent of the workforce) and 24,000 people (i.e., around 5 percent of Suriname's population) were affected.

Restarting the bauxite industry will require a lot of investment. The quality of bauxite at the rapidly declining Coermotibo, Kaimangras and Caramacca deposits, is decreasing and requires more and more energy to be processed. Developing other (richer) bauxite deposits such as those in the Nassau Plateau and in Bakhuis will require multi-million dollar investments in mine development and even more significantly in transport infrastructure (see Figure E.3 in Appendix E for a map of the bauxite deposits). Investments are also needed to reduce processing costs at the Paranam Alumina Refinery, which are currently inflated by the thermal plant's use of diesel instead of less expensive natural gas or coal.<sup>2</sup>

The Surinamese government is in discussions with new potential partners to bring investment to restart the bauxite industry. As an example, on May 11, 2016 the Ministry of Natural Resources signed a MOU with the Monaco Resources Group (MRG) according to which they will jointly invest in the bauxite sector.<sup>3</sup> In exchange for a 30 percent stake, the government would provide access to the Paranam refinery and other inoperative assets at the Suralco's plants and to the estimated 300–400 million tons of bauxite reserves located in Bakhuis. MRG, a medium-sized mining company with operations in various parts of the world, would in turn be expected to make an initial investment of US\$400 million. In the startup phase the idea is to process small quantities of bauxite in the Paranam alumina refinery, generating 400 jobs. As production increases, MRG would invest in the expansion of the refinery and in the development of the bauxite reserves in Bakhuis. After three years, the partnership between MRG and the Government of Suriname would be expected to employ 1,500 people.

But the future of Suriname's bauxite sector remains uncertain. After the failed 2014 MOU between Alcoa/Suralco and the government of Suriname, there is no

indication that the Surinamese government will be able to acquire Suralco's assets, which it has in the meantime promised to the MRG. As per the latest official data available—Alcoa's 2015 Annual Report (Alco 2015)—the company has not made a decision to leave Suriname altogether. In fact, as the report highlights, Alcoa/Suralco's bauxite mineral and mining rights are valid until 2033, when the Brokoppo Agreement expires. The report however does state that the company is in "discussions with the Surinamese government to determine the best long-term solution for Suralco due to limited bauxite reserves and the absence of a long-term energy alternative."<sup>4</sup> If, in the past, Alcoa/Suralco may have been willing to part with its inoperative assets in exchange for five more years (up to 2019) of operating the profitable Afobaka hydropower facility, now it may want additional compensation in view of the MRG's interest. If Alcoa/Suralco and the Surinamese government cannot in this context find common ground, the deal with MRG might be put at risk and with it the rebirth of the country's bauxite sector.

## Gold

In contrast to bauxite, industrial gold mining in Suriname shows great promise. Developing large-scale gold mining projects in Suriname has traditionally been difficult despite the country's vast mineral potential. It was only after years of surveys and multiple changes in ownership that the Rosebel gold mine finally opened in April 2004, officially marking the beginning of industrial gold mining in Suriname. It took Suriname another 12 years to see the opening of its second large-scale gold mine, Merian.

In little over a decade, the Rosebel gold mine produced around 3.3 million ounces of gold and in the process made a measurable contribution to Suriname's economy. As per IAMGOLD's estimates, Rosebel contributed US\$2.5 billion to the Surinamese economy in 2005–2014. This includes US\$836 million in income tax, payroll tax, dividends (government has a 5 percent free equity participation (no CAPEX)) and royalties (2 percent of production, paid in-kind, a price participation royalty of 6.5 percent > \$425 per oz, and a fixed royalty of 0.25 percent of production payable in kind to the Suriname Environmental and Mining Foundation (composed of 2 representatives of Rosebel, 2 from state-owned Grassalco and 2 from the Surinamese government)).<sup>5</sup> It also encompasses an estimated US\$1.14 billion in local purchases, amounting to 54 percent of total goods and services supplied to Rosebel. The mine also employs over 1,600 Surinamese making it one of the top private employers in the country (see Figures E.4 and E.5 in Appendix E for details on the Rosebel mine).

Since 2013, however, Rosebel (Figure 3.2) has faced significant challenges, affecting its overall performance and contribution to Suriname's economy. In addition to declining international gold prices, IAMGOLD has been dealing with an increasing cost base (including high power costs), rising hard rock content (from 20 percent in 2010–2013, to 30 percent in 2014, 40 percent in 2015 and over 60 percent in 2016), an almost 25 percent reduction in grade (from 1.08 grams per tonne to 0.80) and persistent illegal mining on its Rosebel concessions. In response IAMGOLD has been exploring operational enhancements to aid the transition to hard rock and adopting cost cutting measures (in October 2015 IAMGOLD announced plans to reduce Rosebel's employee base by 10 percent).<sup>6</sup> In addition,

**FIGURE 3.2** Rosebel Gold Mine

Source: IAMGOLD, 2016.

the company has been working with the Surinamese government to reduce illegal mining and to improve contract conditions. More specifically, IAMGOLD revised its agreement with the Surinamese government—confirmed by the National Assembly in 2013—so that it extended the term of the original Mineral Agreement by 15 years to 2042, while maintaining all of IAMGOLD’s existing entitlements in Rosebel and securing access to cheaper power. The revised agreement further established a new joint venture growth vehicle between Rosebel (70 percent) and the Suriname government (30 percent), which was given all future production in the circular area extending 45 km from the Rosebel mill as well as an option to participate in any future expansion of Rosebel (see Figure E.6 in Appendix E).<sup>7</sup>

As part of its search for mineable resources of softer rock, IAMGOLD acquired an interest in a new property in Suriname, Saramacca. Explored since the 1990s, principally by Golden Star, a junior gold exploration company, and later as a joint venture between Golden Star and Newmont, Saramacca has a potential of 8–40 million tons grading between 1 and 1.8 g/t for 0.5 to 1.4 million ounces of gold. As per the agreement signed on August 31, 2016, IAMGOLD will pay the Surinamese government US\$200,000 to secure access to the property and historical data to conduct a due diligence review. In addition, the company will put 3.125 million of its common shares in an escrow account to be released to the Surinamese government over three years if IAMGOLD decides to go ahead with a purchase. The success of the drilling will determine the purchase price, which will have a cap of US\$10 million.<sup>8</sup>

While significant, Saramacca’s potential gold reserves pale in comparison with Merian’s estimated 5.1 million ounces per December 2015. Much like with Rosebel, it took years of geological studies and protracted negotiations with the government of Suriname for the Merian gold project (Figure 3.3) to come to light. In

**FIGURE 3.3 Merian Gold Project**

Source: Newmont, 2016.

November 2013, US-gold mining giant Newmont Mining Corporation finally secured a Mining Agreement with the Surinamese government for the Merian gold project, covering a 500,000 ha area.<sup>9</sup> As per the agreement, the government of Suriname exercised its option to participate in a fully-funded 25 percent equity ownership stake in Merian, operating as Surgold (Suriname Gold Company).<sup>10</sup> The government stake—amounting to US\$229 million as of end of January 2016—is somewhat unconventionally managed through Staatsolie, the state-owned national oil company.

The Merian gold project's performance thus far has been very encouraging. Construction was completed on time (2 years) and under budget (US\$150 million less than the estimated US\$900 million to US\$1 billion). Commercial production also started on time—officially on October 1, 2016. Ongoing exploration has extended the mine life from 11 to 13 years and identified further upside potential within the area covered by the Mineral Agreement, including a new discovery at Sabajo. Additionally, operating costs at the mine are expected to remain low, averaging between \$650 and \$750 per ounce in the first five years.<sup>11</sup>

Over the life of the Merian gold project, Surgold is expected to make a large contribution to Suriname's economy. According to the IMF, at current prices, the new gold mine will be exporting about 8 percent of Suriname's GDP annually for at least 10 years, contributing to the country's return to an external current account surplus. In addition, Merian is expected to generate an estimated US\$700-800 million in taxes and royalties (6 percent over the net smelter returns), providing a much-needed boost to government finances. Merian is also set to be one of the largest private employers in Suriname: As of late 2016, Merian was providing 1,300 jobs, 220 of which to indigenous Pamakkans.

Combined operations at Merian and Rosebel are expected to surpass all previous industrial gold production records: total production is expected at 716,000 and 816,000 ounces of gold per year in 2017–2021. As the large-scale gold mining sector grows, the Surinamese government has pushed to increase its direct participation in it. This is not only apparent in the government's already described participation in Merian and Rosebel but also in its purchase of an undisclosed percentage

of Suriname's first gold and precious metals refinery and bullion manufacturing plant, Kaloti Suriname Mint House, whose goal is to promote Suriname as competitive bullion trading hub and center of excellence for the precious metals industry. On one hand, partnering with Suriname's two largest gold-mining producers and with Kaloti allows the government to better monitor the mining activity, control precious metals exports and collect taxes and fees. It also helps the government understand the needs of the sector from within, which may facilitate the introduction of much needed reforms (institutional, legislation, regulations, community relations). On the other hand, actively participating in these partnerships generates instances of conflict of interest and most likely adds strain to Suriname's already weak institutional and technical capacity to manage and monitor its mining sector.

### **Artisanal gold mining**

One critical aspect of the gold sub-sector is the significant artisanal and small-scale mining (ASM) operations (Figure 3.4), which have been growing since the 1980s. Although ASM's relative importance may decline once Merian starts producing, ASM is still expected to account for half of Suriname's gold production in the short-term. The Mining Code, which was formulated in 1986, confined small-scale mining to specific areas but it has expanded beyond that. The Suriname Interior War (1986–92), the arrival of large numbers of Brazilian gold miners (*garimpeiros*) and high international gold prices resulted in an ASM boom across the country. ASM stands out for the size of its production (est. 800,000 to 1,000,000 ounces of gold); the number of people it employs (est. 40,000 people full- or part-time);<sup>12</sup> and the critical role it plays in providing livelihoods in the interior (through purchases of fuel, food, transport, machinery, and accommodation).

Widespread artisanal and small-scale mining of gold provide a livelihood for many inland communities, but they also raise multiple challenges for the sector as



**FIGURE 3.4**  
**Artisanal Gold Mining in Brownsweg**

a whole. First, ASM is mainly illegal/informal due to the sparse nature of alluvial deposits and weak state presence/control in the interior. Many gold miners lack the necessary mining rights, and it is estimated 65–75 percent of all gold miners are migrants primarily *garimpeiros*;<sup>13</sup> and the remainder, Maroons.<sup>14</sup> Because of the informal nature of the ASM sector, tax and royalty collections are minimal, a significant loss of income for the Surinamese government.<sup>15</sup> Paradoxically, *garimpeiros* pay about 10 percent of their earnings to local tribal or informal titleholders because it apparently provides them with a sense of legality and security (Heemskerk 2005). Second, the short-termism often linked to ASM is purportedly generating inefficient operational practices, very serious safety hazards (illegal activities in the vicinity of the Afobaka dam for example are jeopardizing its integrity with potential devastating impacts on downstream areas such as Paramaribo) and significant negative environmental and health impacts. Mining causes soil degradation and deforestation, while the construction of gravel pits in streams has led to siltation of rivers and creeks, affecting natural habitats in the rainforest. The excessive and uncontrolled use and spillage of mercury has led to long-term poisoning and high and persistent concentrations in lakes and streams as well as poisoning of miners and affected communities.<sup>16</sup> Third, ASM operators often infringe upon each other's territories and larger legal mining concessions, leading to property disputes that can be costly, time-consuming and violent.

### **Medium-scale mining**

Suriname's formal medium-scale miners such as Grassalco are among the most affected by ASM operators. The frequent absence of a government presence in the remote mining locations make it particularly difficult and costly for medium-scale miners to keep migrant miners out of a concession. As a result, many medium-scale miners have adopted subletting schemes (which technically go against the dispositions of Suriname's mining title regime) that allow them to control informal migrant miners and at least collect some income from mining activities on their concession. Nana Resources N.V., a leading medium-scale producer in Suriname active since 1992, has established one such scheme on its concession around the Lawa River. Per the arrangement, Nana Resources provides general security, technical guidance to the miners (through its 'Nana Environmental Management System'),<sup>17</sup> collects production statistics, and keeps an elaborate miners' registration system. The company pays taxes to the government and provides a quarterly production royalty to the local indigenous community. In parallel, Nana Resources actively still explores for gold and diamonds, mines gold on its concessions and mills and melts gold (including gold from other producers) using state-of-the-art techniques (Figure 3.5).

Domestic medium-scale producers such as Nana Resources, LaWa Star Industrial and Sarafina N.V. often hold to their concessions—even if dealing with migrant miners and indigenous peoples' (often against mining activities on their ancestral lands) can be problematic—in the hopes of eventually securing a lucrative deal with a larger player. In 2014, for example, Sarafina N.V. succeeded in striking a deal with IAMGOLD. The latter agreed to a five-year option agreement under which it could earn a 100 percent interest in Sarafina's 10,000 ha mining concession, located 25 km from the Rosebel mine. As per the agreement, IAMGOLD can exer-

**BOX 3.2 Local Artisanal Mining**

The informal gold sector is a key livelihood for many Surinamese and has come to dominate the local economy in many localities spread over the gold-rich geological formation called the "Greenstone Belt." Equipment, spare parts, fuel, and food supplies are transported daily over the main rivers. Along the trails, one finds tractors, bulldozers, four-wheel drives, and excavators to clear land and to build gravel pits in small rivers to wash out the gold. Small villages have arisen with motels, restaurants, and other entertainment facilities for the miners. The lack of a formal and monetized economy has led to gold being used as money in this region and goods and services are often paid for in gold. The interior seems to have developed its own implicit rules and regulations, whereby tribes or concession holders settle disputes locally.

Although critical for the livelihoods of many in the Interior, informal gold mining is challenging both to humans and the environment. Miners

typically operate in small teams of 5–8 people. The majority are *garimpeiros* who are employed by Surinamese miners taking advantage of their expertise. Others have become independent mining operators, partnerships or suppliers of mining equipment. The miners use rudimentary techniques and material, including high-pressure hoses, hydraulic pumps, bulldozers, excavators, and metal detectors. They use mercury to bind and purify the gold. Workers usually work 12 hours a day. Mining is usually postponed during the four-month dry season.

Several organizations have attempted to support formalization of ASM through different ways. OGS has mainly tried to confine operations in legal areas. Grassalco and Newmont are both developing mercury-free pilots. WWF Guianas have been very proactive in raising awareness about environmental risks in forestry areas pertaining to ASM communities.

Source: Adapted from IMF, Sales Tax Reform and Taxation of the informal gold sector, 2011.



**FIGURE 3.5**  
**Nana Resources Lab**

Source: Nana Resources, 2013.

cise its right to buy the property at any time for US\$1 million in cash. Should the project proceed to production, Sarafina is to be paid a net smelter return royalty of 1.6 percent for any gold produced from the property.

### **Gold supply chain**

The gold supply chain has been relatively well organized in Suriname, compared to other countries. Eight Suriname firms have a license to buy gold, without discrimination of formal or informal miners. All but one are located in Paramaribo. (The one exception is in Albina, a town on the eastern coast of the country bordering French Guiana.) Gold offered for sale to the buyer is melted to remove impurities (mostly residual mercury) and determine fineness. After assaying locally, Suriname gold typically is 92 to 93 percent pure. Buyers pay the world market price of gold, minus 3 to 4 percent for royalty (1 percent) and overhead costs. There is some competition from jewelry shops that also buy gold from miners and produce jewels for the local market and tourists, but most of the gold is exported. The brokers used to process the gold to separate out impurities and mercury contamination and bring the purified gold to the Central Bank of Suriname (CBvS) to have it tested, obtain a certificate and pay the 1 percent royalty.

Since 2015 Dubai headquartered Kaloti Precious Metals, one of the world's largest gold and precious metals refiners and trading houses, has opened the Kaloti Suriname Mint House, the first refinery facility in Suriname. Kaloti planned to produce as much as 60 tons of refined gold and to gradually offer a wide variety of services to Latin America and the Caribbean, including: melting, assaying, evaluation, vaulting, bullion trading, coins, medallions and investment bars distribution, global logistics, and liability coverage and insurance for the international transportation of precious metals. Kaloti's regional ambitions, however, depend on its ability to channel gold at a low fee. The Surinamese government tried to make it mandatory for brokers to export via Kaloti but the courts judged this monopoly illegal. Without the monopoly and facing lower prices, it is unclear whether Kaloti will achieve its ambitious goals.

## **Oil**

Suriname's somewhat unwieldy mining sector stands in stark contrast with the country's highly concentrated oil sector. Oil was first discovered in Suriname in 1928 on the coastal plain close to the border with Guyana, but systematic exploration both onshore and offshore only started in the 1960s, when various international oil companies (IOCs) became interested. The sector has been dominated since 1980 by Staatsolie Maatschappij Suriname N.V. ('Staatsolie'), which has since the 1980s combined its original role of 'agent of the State' of Suriname—the regulator tasked to assess, promote and manage the sector—with the role of the country's sole oil producer, extracting crude from three onshore oilfields located in Saramacca.<sup>18</sup>

Staatsolie Maatschappij Suriname N.V., a public limited company, was established in 1980 with the Government of Suriname as its single shareholder, to enter into a production-sharing service contract (PSC) with the former U.S. oil company Gulf Oil for the exploration of petroleum in the Tambaredjo field. Subsequently,

**BOX 3.3 Gold Transport from Guyana to Suriname**

Guyanese law prohibits the export of raw gold without the appropriate license. Yet according to different sources, Guayanese gold frequently finds its way to Suriname. There are three main reasons for miners in Guyana to sell their gold in Suriname:

1. Better price: In Guyana, gold miners and other workers in the mining areas pay a royalty of 5 percent of the value of the gold (after assay) plus a 2 percent compulsory tax. These fees (5 percent and 2 percent) are paid when the miner sells his gold to the licensed buyer in Guyana. By comparison, Suriname royalties are only 1 percent and hence the price fetched for gold in Suriname is higher.
2. No gold tracing or other bureaucratic demands: In Guyana, the seller of gold is obliged to state where the gold comes from and has to comply with several other legal requirements, such as showing a clear trail with registered equipment, legal concessions, and registered miners.
3. Need for dollar or other foreign exchange: Most buyers only pays Guyanese dollars. So if the mining entrepreneur needs to import something he or she has to buy convertible currency against an unfavorable exchange rate. In Suriname, one may find USD, Euro or SRD in buying houses.

Source: WWF Guianas 2010.

Decree E-8B of 1981 granted Staatsolie the concession on oil exploration and exploitation in Surinamese soil (Figure 3.6), as well as the exclusive right to negotiate with foreign investors. Shortly thereafter, in 1982, Staatsolie—benefiting from the knowledge acquired from Gulf Oil—drilled its first (and successful) well. First oil production took place on November 25 1982 in the Catharina Sophia area in Tambaredjo. In 2015, Staatsolie operated 1,729 wells and achieved a total average daily production of 17,000 barrels, its highest ever annual production. Total oil production in the last 35 years reached 100 million barrels of crude oil.<sup>19</sup>

Over the years Staatsolie has diversified its activities—including acquiring and operating a 62W thermal power plant—but it is still primarily a vertically integrated oil company, with a dominating presence across the oil value chain in Suriname: upstream (exploration, development, production), midstream (transport, trading), and downstream (refining, retail, bunkering). While Staatsolie's focus remains in the upstream, the company has been recently putting a lot of effort and investment into consolidating and expanding its downstream business: In 2012, the company initiated the expansion of the *Tout Lui Faut* refinery to more than double its processing capacity up to 15,000 barrels of crude per day. The expansion that concluded in December 2015 cost US\$991 million, US\$400 million of which was spent locally, and is expected to generate annual revenues of about US\$100 million. Despite some initial hurdles, the refinery reached a milestone with the production of 1 million barrels of premium diesel and gasoline (August 2016) and the export

**FIGURE 3.6**  
**Staatsolie Wetland Operations**



Source: Staatsolie, 2015.

of more than 135,000 barrels of premium diesel (May 2016). Premium gasoline and diesel have been sold to the domestic market through Staatsolie's subsidiaries GOw2 Energy Company Suriname N.V and Sol Suriname N.V., recently established after the company acquired ChevronTexaco's and Shell's retail operations in Suriname.

Staatsolie is considered a major pocket of effectiveness in Suriname's public sector and one of the country's most successful companies. Experts believe that Staatsolie's success is in part due the company's legal status whereby the role of the government in managing the company's day-to-day is restricted to the nomination of members of the Board of Directors. Furthermore, Staatsolie started small and remained in the shadow of major rent-producing activities such as the bauxite sector and the Dutch development assistance until the mid-1990s, allowing the company to build up its skills, develop a corporate culture and create public support that have helped sustain its claim to autonomy from the government (reducing opportunities for rent seeking).

In the last 35 years, the Surinamese oil sector led by Staatsolie has made a significant contribution to the country's economy. Oil production—the third largest in the Caribbean—nearly reaches Suriname's domestic consumption, partly explaining the country's high level of primary energy self-sufficiency. Furthermore, the oil sector has strongly contributed to export earnings and to the accumulation of international reserves, except in periods of low international oil prices and demand such as 2009 and 2015 (see Figure E.1 in Appendix E). The upgrading of the *Tout Lui Faut* refinery is expected to further enhance the buildup of Suriname's international reserves' by reducing imports of oil derivatives and facilitating the replacement of crude oil exports with exports oil derivatives (premium gasoline, premium diesel, fuel oil, etc.), which have a higher value.

The revenue streams from the oil sector to the government—direct and indirect taxes and dividends—have been considerable, with the sector contributing on average two times more than gold and five times more than alumina and bauxite in 2007–2015 (see Figure E.2 in Appendix E).<sup>20</sup> The oil sector’s important contributions to Suriname’s public finances—totaling US\$2.15 billion in 2004–2015—fluctuate over time significantly, though, influenced by international oil prices, volume of oil produced, exchange rate, and Staatsolie’s profits (see Figure E.7 in Appendix E). Suriname’s oil sector has also generated a significant spin-off industry from which it buys goods and services. Staatsolie alone employs about 1,000 people and another 800 in outsourced activities (2,800 contractors were hired during the recent expansion of the *Tout Lui Faut* refinery). Suriname’s oil sector has in addition supported skills development within the country, through Staatsolie’s sizeable training and management development programs and initiatives such as the funding of a multiyear Master’s Program in Petroleum Geology, the only one of its kind in the Caribbean. Lastly, over US\$2.8 million have been invested in healthcare, sports and education projects in Suriname between 2012–2016, thanks to the mandatory social contribution clause in the PSCs currently in place.<sup>21</sup>

The oil sector’s strong contribution to Suriname can only be sustained by an increase in production coupled with sufficient reserves to support it. Staatsolie’s oilfields are mature and its reserves are declining however.<sup>22</sup> To address this situation, Staatsolie is focusing on increasing productivity and efficiency of wells, optimizing production and promoting recovery from the mature fields using Enhanced Oil Recovery (EOR) technologies. In parallel, Staatsolie is actively promoting exploration onshore and offshore. Staatsolie and its subsidiaries have thus far been the only companies exploring in the onshore and nearshore (water depth 0–25 meters), spending more than US\$120 million in 2007–2014 on kilometers of 2D and 3D seismic surveys and drilling. Nearshore block 4 is the most promising—hoped to yield at least 100 million barrels of recoverable oil or 120 percent of Staatsolie’s current reserves—because it is situated north of the fields where Staatsolie has its biggest onshore reserves. In 2015, Paradise Oil Company N.V. (a Staatsolie subsidiary, established in 2005 for carrying out exploration and production activities in cooperation with third parties) conducted an exploratory drilling program in Block 4. This was the first time Staatsolie had drilled for oil at sea at its sole cost and risk. Of the five wells drilled, four yielded oil. This excellent result was a testament to Staatsolie’s growing technical ability: managing the rig successfully in a relatively complicated environment. Once a detailed study of the drilling results is complete, Staatsolie plans to assess the prospects of commerciality.<sup>23</sup>

The offshore has been made available to other players besides Staatsolie through competitive bid rounds.<sup>24</sup> Promotion of the deeper offshore intensified following a study by USGS in 2000 that identified the Suriname–Guyana Basin as an under-explored basin with a potential recoverable resource of 15 billion barrels of oil. Since 2004 PSCs have been signed with a number of IOCs recognized for their success in frontier exploration: currently there are 11 IOCs operating under the PSCs in Suriname, including Petronas, Tullow Oil, Statoil, Apache, Kosmos Energy, Inpex, Cepsa, Chevron, Noble Energy, DEA and Hess (see Figure E.8 in Appendix E).<sup>25</sup> Kilometers of 2D and 3D seismic studies have been done as well as a few wells but no find has been made.<sup>26</sup> In 2015, in recognition of the challenging market

environment and to counteract declining interest into offshore exploration in Suriname, Staatsolie extended the exploration timeframes under the existing PSCs, launched an open door invitation to attract companies that have a demonstrated ability to explore, develop and produce petroleum, and issued a tender for a 2D multi-client survey of the shelf, which a number of oil companies contributed to.<sup>27</sup>

## Potential for Future Production

Due to insufficient efforts to promote Suriname's mineral potential, it is not currently considered very attractive by the industry. Despite its centuries' old mining industry, and the development of two significant gold mines in the past decade, Suriname is not considered an attractive destination for its mineral potential on the Investment Attractiveness Index of the Fraser Institute.<sup>28</sup> Overall Suriname ranked 91 of 122 countries in 2014 and 102 of 112 countries in 2013, which is close to French Guiana (respectively 89 and 82) but significantly worse than Guyana (respectively 54 and 77). Taking into account geology only (when investors are asked to describe the attractiveness of the region's "pure" mineral potential independent of any policy restrictions, assuming best practices), Suriname ranks 85 and 107 respectively, again close to French Guiana (86 and 110), but strikingly lower than Guyana (50 and 79) (Fraser Institute 2016).

Those results can be surprising considering Suriname belongs to the same Precambrian Guiana Shield as Guyana and French Guiana, a 2 billion years' old geological formation, which extends for 415,000 km<sup>2</sup> from Venezuela to the Amazon River in Brazil. A massive gold mineralization event throughout the Shield is attested by greenstone belts similar to those of the Birimian gold event of Western Africa. Most of the known world-class deposits and artisanal mining operations are located in those belts. If Guyana's resources are perceived to be most attractive in this context, it may be because they have done a better job at promoting the existing information, as opposed to Suriname, which has tended to keep geo-data inaccessible to the outside world. Conversely, the mining potential of French Guiana may be well documented and suffer from a perception of "known territory," which could also be less attractive to new investors.

However, there is evidence of high potential and clear prospects for a range of minerals. The country's metallogenic map shows various insufficiently explored occurrences of minerals in the country. The brief overview below is based on dated and hardly usable data (bauxite being a notable exception). It illustrates the country has various mineral prospects, from the more traditional bauxite and gold, to kaolin and rare earths. It will have to be updated once a significant effort to compile the existing geological data and acquire new one based on modern technologies.

## Bauxite Prospects

In 2016, the US Geological Survey (USGS) estimated that Suriname's bauxite reserve base was 580,000 metric dry tons, the 10<sup>th</sup> largest in the world (USGS 2016). At 2015 prices, this translates to income (not including costs) of around US\$325 million per year over 50 years, or a total of US\$16.2 billion.

Most of Suriname's bauxite reserves—an estimated 324,700 metric dry tons as of 2006—are concentrated in the Bakhuis area in western Suriname (see Figure E.3 in Appendix E).<sup>29</sup> The Bakhuis bauxite ore deposits have been studied since the 1960s and were originally planned to replace the rapidly declining bauxite deposits used as the primary source for the Paranam refinery. In the early 2000s there was a push to develop the Bakhuis deposits led by then concession-holders BHP Billiton and Suralco. Eventually BHP Billiton and Suralco concluded that developing the Bakhuis deposits was uneconomic because of deep social and environmental concerns and high infrastructure costs (build a new hydropower plant and roads as well as conduct expensive improvements to the railway, the Corantijn River (dredging) and the Paranam refinery (to allow for the processing of the bauxite from Bakhuis)).

Since then, the Nassau bauxite deposits—known since the early 1950s—have been deemed the most viable source of bauxite for the Paranam refinery (see Figures E.3 and E.11 in Appendix E). BHP Billiton, and more recently Suralco, conducted exploration to characterize the extent of the deposit (est. 30,000 metric dry tonnes of bauxite ore).<sup>30</sup> This deposit would be sufficient to supply the Paranam refinery with bauxite for approximately 8 years with an ore production rate of 4.2 million dry tonnes per year, for a total of approximately US\$118 million a year. Developing the Nassau deposits would be costly, however, as it would require not only building the mine and associated support facilities but also developing a transport road (104km) for the safe and economic transport of the bauxite ore to the Paranam refinery. Other sources of bauxite (i.e., Para North and Kankantrie North mines) could also be considered to blend with the bauxite ore from Nassau. If feasible, these other sources would increase the estimated Nassau mine life to approximately 11 years.<sup>31</sup>

## Gold Prospects

In Suriname an overwhelming majority of the mining concessions that exist, are for gold and are concentrated in the Guiana Shield (see Figure E.10 in Appendix E).<sup>32</sup> Most known gold deposits—such as those found in Lely Mountains, Selakreek, Benzdorp and Goliath-Tibiti—seem to be related to deformational events in the Shield. Other types of gold deposits may be present, related to volcanic or intrusive events.

The recoverability of Suriname's known gold deposits—except perhaps Merian and Rosebel—has not yet been properly investigated. Intensive exploration and mining surveys are necessary to assess the size of the deposits and their (commercial, environmental, and social) feasibility.

## Diamond Prospects

Over the years several diamond concessions have been given out to local companies such as Margo Mining, Nana Resources but production levels remain minimal unlike in neighboring Guyana. Exploration is limited, and production usually occurs under subletting or subcontracting schemes. For example, Surinam Diamond Company, which holds a Mineral Right of Exploitation in an area near the Bemau Mountains, South of Brokopondo, contracts small-scale miners to extract diamonds by means of hydraulic mining from the alluvial deposits present.

Experts have identified four types of diamonds in Suriname: the scattered, well-preserved microdiamonds (found in Suriname since 1880); the diamonds from the Sipaliwini area, associated with Dalbana metarhyolites; the diamonds from the Lawa River region, associated with the Dachine ultrabasic (kimberlitic) body in French Guyana; and the ‘larger’ Rosebel-Sabanpassie diamonds. The Rosebel-Sabanpassie diamond finds are concentrated in an area of approximately 30x12 km, between the Suriname and Saramacca Rivers, some 110 km south of Paramaribo. After investigating the Rosebel-Sabanpassie finds in the 1950s and 1970s, the Geological Mining Service of Suriname concluded that the diamonds must be associated in some way with the Rosebel conglomerates (even though diamonds were never found in the conglomerate itself) and that their exploitation would not be feasible, unless as a by-product of gold exploitation.

Ultimately, although Suriname’s diamonds occur in widely spread areas and in various rock types, experts believe that the most promising areas in Suriname are those consisting of ultrabasic rocks (as present in the southeast part of the country). Further research is needed to identify the origin of Suriname’s diamonds, the size of the deposits and assess the feasibility of exploiting them.

## Other Minerals

In addition to the more traditional minerals such as bauxite, gold and diamond, there is evidence in Suriname of the presence of other minerals such as:

### Kaolin

There are large deposits of kaolin under the bauxite deposits of Moengo and Onverdacht and numerous smaller deposits in the interior of Suriname. In the late 1980s the government of Suriname invited interested parties to explore the country’s kaolin with the goal of developing a joint kaolin industry. The response was subdued and despite several surveys, the reserves and qualities of the kaolin deposits are not yet fully known. Still, in recent years there has been some progress: Moengo Minerals N.V. acquired in 2003 the exclusive kaolin mining rights for several kaolin deposits in the Moengo area in eastern Suriname.<sup>33</sup>

Based upon 5 years of extensive exploration and research carried out by Moengo Minerals N.V. in close cooperation with experienced and accomplished kaolin geologists and industrial mineral processing engineers, Proven, Probable and Inferred Reserves of Kaolin within the concession area of Moengo Minerals N.V. are estimated to be well in excess of 60 million tons. In 2011, Moengo Minerals initiated the construction of its metakaolin processing plant that uses Flash Calcination Technology. In 2013 Moengo Minerals obtained rights for exploration of kaolin for 25 years and later in the year the metakaolin plant became operational. The product—primarily used as an input for cement—has been on sale in Suriname since then.

### Crushed stone

Resources for crushed stone, such as granite, gneiss, amphibolite and greenstone, are readily available in the interior of Suriname, but the typically high transport costs reduce their economic feasibility. Unsurprisingly, there have been only a few quarries operating in the country. Grassalco has taken a leadership in this role,

promoting crushed stone production and export as a means to diversify the company's portfolio.<sup>34</sup>

### **Sand**

White quartz sands cover large areas in the Savannah Belt of Suriname. Several studies have shown that there are high-quality resources near Zanderij and Lelydorp, which have since been used in the production of glass in Suriname. In addition, there are abundant sand reserves in the Coropina Formation and in the Young Coastal Plain of Suriname that are often mined for various construction purposes.

### **Kyanite**

Suriname is known to have a kyanite deposit near Bosland, just northeast of Lake Brokopondo. After several studies it is unclear how much kyanite exists in Suriname however: estimates vary from 3 million tons to 0.5 million tons. Further exploration is recommended to determine whether exploitation of kyanite is feasible.

### **Phosphate**

The surveys conducted by the Geological Mining Service during the 1960s in West Suriname detected a copper/phosphate prospect in Bakhuis. The prospect, referred to as the K/3 area, is 1.5 km long, partly coinciding with the copper mineralization found in the mountains. Experts believe these phosphorites to be of sedimentary origin, meriting follow-up exploration.

### **Manganese**

A survey by the Geological Mining Service between 1953 and 1960 revealed that manganese occurs in several places in Suriname, including in the vicinity of the Sarakreek along the Suriname River, along the Tapanahony River and around Apoema Soela on the left bank of the Maraowijne River. However, the survey at the time showed no economically viable deposits and there has been no effort to develop them since.

### **Rare earth elements**

The mineral monazite—one of the main sources of rare earth elements—occurs in several locations in Suriname. In the 1960s, the Geological Mining Service of Suriname found indications of rare earth elements such as neodymium, cerium, scandium, and yttrium in Bakhuis. More research is needed to assess the size and quality of the deposits and their (economic, social, and environmental) feasibility.

## **Hydrocarbons**

There has been clearly a more systematic effort to enhance the understanding of Suriname's hydrocarbons potential than that of other minerals. Staatsolie has taken the lead, actively acquiring data, either alone or in partnership with others (companies or multi-client data providers), on Suriname's onshore, nearshore and offshore.

Extensive seismic surveys and bathymetry studies have been developed for Suriname's nearshore and offshore, and this information together with well data is sold to interested companies within data packages. So far, Staatsolie has accumu-

lated approximately 34,850 km of 2D seismic data, and approximately 4,750km<sup>2</sup> of 3D seismic data (see Figure E.12 in Appendix E). In 2016–2017, Staatsolie is planning to acquire more data—through multi-client service partnerships—including a broadband gravity survey of part of Suriname’s onshore (15,300 km<sup>2</sup> area), a new rock based geological study of Suriname’s offshore (based on 19 wells), and a 5,500 km<sup>2</sup> of long offset 2D seismic data offshore in water depths ranging from 25–50 meters.<sup>35</sup>

However, and despite all these efforts, Suriname’s share of the Guyana-Suriname Basin is still virtually unexplored. The Guyana-Suriname Basin is a sedimentary basin encompassing the coastal area of French Guiana, Suriname, Guyana and the eastern part of Venezuela. Most of the Guyana-Suriname Basin lies offshore and is believed to be similar to the petroleum system in West Africa, which has revealed several huge discoveries, such as the Jubilee discovery in the Tano Basin offshore Ghana. As noted earlier, the United States Geological Survey (USGS) ranked in 2000 the Guyana Suriname Basin 2<sup>nd</sup> in the world for prospectivity among the world’s unexplored basins and 12<sup>th</sup> for oil among all the world’s basins, explored and unexplored. The mean (P50) undiscovered resource potential is estimated at 15.2 billion barrels (USGS 2012).

While no finds have been made thus far in Suriname’s offshore, discoveries in neighboring French Guiana and Guyana along the Guyana-Suriname Basin bode well for Suriname’s prospects. Tullow Oil’s 2010 Zaedyus discovery offshore French Guiana proved to some experts the extension of the Jubilee play across the Atlantic.<sup>36</sup> ExxonMobil’s Liza-1 and Liza-2 wells offshore Guyana in turn suggest the presence of large high-porosity sandstone reservoirs, which could possibly extend into Suriname’s offshore (see Figure E.13 in Appendix E). Finding a deposit similar to ExxonMobil’s—1.4 billion recoverable barrels of high-quality oil (est. US\$70 billion at current prices)—in Suriname’s offshore is not a given but if it does occur, it would have a transformational impact on the country.

## **Enabling Environment for Extractive Industries**

As described in the previous two sections, Suriname’s extractive industries make a very significant contribution to the country, but their large untapped potential suggests that they could perhaps contribute more and better. This gap between Suriname’s extractive industries’ potential and their results is explained by various aspects of the enabling environment for the sector, including inadequate environmental and social oversight and regulation, an outdated legal framework, undeveloped institutional framework and capacity, unbalanced fiscal framework, poor mining title management, rampant informal ASM, and limited development of supply linkages and spillovers.

### **Inadequate Environmental and Social Impact Oversight and Monitoring**

The existing legal and institutional frameworks for environmental and social impacts management are not fully developed for the extractive industries. Suriname

does not have a specific environmental law. There is a draft environmental law, which has been awaiting approval from the council of Ministers since 2002. The legislation regarding environment and occupational health and safety that exists, is dispersed across different pieces of legislation, is incomplete in its coverage, and for a large part does not meet international standards. Suriname's only environmental institute, the National Institute for Environment and Development (NIMOS), has limited capacity due to the lack of legal backing and limited financial and institutional support.

Without proper legal frameworks and institutions able to implement and monitor them, there is significant uncertainty regarding social and environmental requirements and high risk of a race to the bottom. Companies and especially individual miners are often tempted to compete with each other to reduce costs by investing little if any resources in environmental and social protection. The result of this race is inevitably serious environmental and social impacts, which affect not only the health and well-being of miners but also the health and livelihoods of local communities.

Mercury use is the most pressing environmental and social issue. Mercury is used in high volumes (some estimates suggest up to 7kg of mercury for 1kg of gold) in Suriname for the extraction of secondary gold by gravity methods (Figure 3.7). It is, however, known that mercury is highly toxic, causing damage to the nervous system at even low levels of exposure. Mercury can contaminate the atmosphere and water at very long distance. When mercury leaches into rivers, is absorbed by ground-feeding organisms, and moves up the food chain through carnivorous fish. ASM has become the single largest demand for mercury in the world, and several studies have concluded that mercury use is facilitated by (a) fragmented responsibilities and knowledge about mercury within government, which obstructs effective policy making and implementation, (b) omissions in the regulatory framework, (c) the accessibility of mercury, (d) the widespread practice



**FIGURE 3.7**  
**Burning the Gold-Mercury Amalgam**

of whole ore amalgamation and (e) the suboptimal understanding and awareness of mercury related health risks. For years now, governmental institutions and NGOs (World Wildlife Fund (WWF), Pan American Health Organization (PAHO)) have executed mercury awareness campaigns among gold miners in Suriname but they have not been effective in motivating miners to reduce mercury, primarily due to the lack of mining concession titles for small-scale miners, the mobility of gold miners, the minimal monitoring and control, and the higher costs of mercury-free equipment. More recently, Grassalco introduced mercury-free mining in its Maripaston concession and is sharing its techniques with ASM miners *in situ* to demonstrate how mining can be profitable without mercury.

Soil degradation and pollution also directly affects the livelihoods of local communities and should be minimized or at least remediated at the time of mine closure. Suralco's recent decision to close operations has mobilized communities, concerned with the fact that mine closure was originally not contemplated by the 1958 Brokopondo agreement. In the absence of clear rules and corresponding monitoring, local communities from Para, Plantation Onoribo have resorted to protest and mobilization to ensure that Suralco will fulfill its moral obligations (and international best practice). The risk for conflict will be high since there will be probably be a mismatch between local communities' expectations (complete resolution of environmental damage) and the company's (government should address the issues with the funds accrued during operations because the company is not required by law to do so).

Another critical issue is the increased sediment level in rivers and creeks, which many local people in the interior perceive to be the most severe threat to their livelihoods. Water that previously was used for drinking and cooking is no longer suitable for human consumption. Virtually all watersheds near ASM activities are visibly turbid and of a coffee- with-milk non-transparent color. Fish that depend on visibility for hunting are no longer able to live in these watercourses. In addition, fish breeding and spawning places are being destroyed.

Efforts have been made to address some of these issues in the Draft Environmental Act, in the generic and voluntary guidelines for environmental and social impact assessment (2005 and 2009) released by NIMOS, in Staatsolie's Health, Safety and Environment (HSE) Policy, in the National Oil Spill Contingency Plan (prepared in collaboration with international oil companies and Staatsolie), and in the establishment of Mercury Free Partnership (2015) (including OGS, NIMOS, Office for Public Health (BOG), WWF, Conservation International, and Anton de Kom University). The effectiveness of these efforts is severely hampered, however, by the scarce human, technical, and financial resources available to review them and monitor their implementation and, more importantly, by fact that they are only truly enforceable when transformed into national legislation. NIMOS, for instance, does not have the capacity to monitor or enforce environmental or social standards in all of Suriname's vast onshore and offshore territory and thus often delegates this task to local district authorities that lack adequate training or capacity.

## **Outdated Legal Framework**

The mining law in force is the 1986 Mining Code, which embodies a century of experience with mining. It was promulgated by Decree on May 8, 1986 with an

extensive Explanatory Note, which explains that it should be considered as a "mother Decree." Specific legal regulations with respect to certain mineral resources like petroleum and bauxite were expected. Admittedly a flagship piece of legislation, this Decree vests the ownership of the mineral resources in the State (Art. 2) and separates it from surface ownership. It recognizes the importance of both large-scale mining investments, which can take advantage of exemptions of import duties, favorable depreciation and a re-investment reserve, and small-scale mining, which is authorized with simple means and techniques in selected areas. However, the executive power deliberately retained for itself maximum discretion in granting mining titles and managing the sector. Typically, the Decree does not give priority rights to the person possessing an exploration right in order for him to obtain the exploitation right. It does not make it impossible for the government to join a "second company" to the venture even if only the first one took all the technical and financial risks to reach the stage of exploitation.

The Mining Decree has lost relevance in various ways. It was designed at a time when bauxite was the primary commodity. For this reason, the right of exploration and exploitation for bauxite are granted by Resolution, like for hydrocarbons, as opposed to the right of exploration and exploitation for other minerals, included gold, which are granted by Ministerial Order. While most large mining investments to date have been made in the framework of an *ad hoc* negotiated mining convention, there is no mention in the Mining Decree of a Mining Agreement to be signed between large-scale mining developers and the government. This explains then why both the 'Rosebel Agreement' and the 'Merian Agreement' had to go to Parliament for approval, giving these conventions the force of law. More broadly, the 1986 Decree does not provide for the minimum stability and predictability that would be expected from a modern law. It leaves significant decision-making authority to the government (and the Minister of Natural Resources in particular), which creates flexibility but also presents many governance risks, including creating space for political influence over investment approvals and opportunities for corruption due to the discretionary authority.

Typically the tax regime for large-scale mining has been open for negotiations. The Mining Decree has little tax provisions and government has deliberately retained the power to negotiate royalty rates and grant exemptions on a case by case. This certainly present the advantage of customizing a fiscal package per mining operation and of taking into considerations specificities in terms of grade, life mine, infrastructure needs, etc. However, international experience shows that such negotiation can spread over years before turning to a result often not in favor of the State. Box 3.4 below illustrates the difference between two gold operations and the rest of the small-scale ones. More analytical work would be needed to precisely identify all applicable fiscal and parafiscal provisions and to model the impacts of their variations respectively on the internal rate of return of the project's proponent and the government take.

New mining legislation was drafted in 2012 in an attempt to modernize the legal framework but has yet to be adopted. Upon reading and comparing the 1986 Decree, the Draft Mining Code of 2012 and the Merian Agreement, two important shifts in the mining policy of Suriname come to light. The first shift is the extent of the power given to the executive to determine the conditions under

### BOX 3.4 Elements of Taxation of Gold in Suriname

Fiscal terms for large-scale gold mines are essentially negotiable. At present, IAMGOLD (Rosebel Gold Mines N.V.) pays the standard 36 percent corporate income tax on its taxable profit as per the general regime of Income Tax law 1922 and is subject to a separate progressive royalty regime. The latter is based on a fixed royalty rate of 2.25 percent, plus 6.5 percent if the gold price exceeds US\$425 per ounce. In the initial stages, the company could offset its revenue against large depreciation and investment allowances. Payments by Rosebel gradually increased from \$14 million in 2005 up to \$167.4 million in 2012. In the case of the Merian Agreement, Surgold will be subject to the same 36 percent income tax on annual profit as well as a fixed 6 percent royalty rate on net smelter return. Both the Rosebel and the Merian Mineral Agreements include favorable clauses on depreciation and loss carry forward, as well as exemption of import duties on equipment (not goods). While there is no VAT in Suriname both income tax and royalty are set at comparatively high levels, with a very moderate stabilization clause (only applicable to income tax).

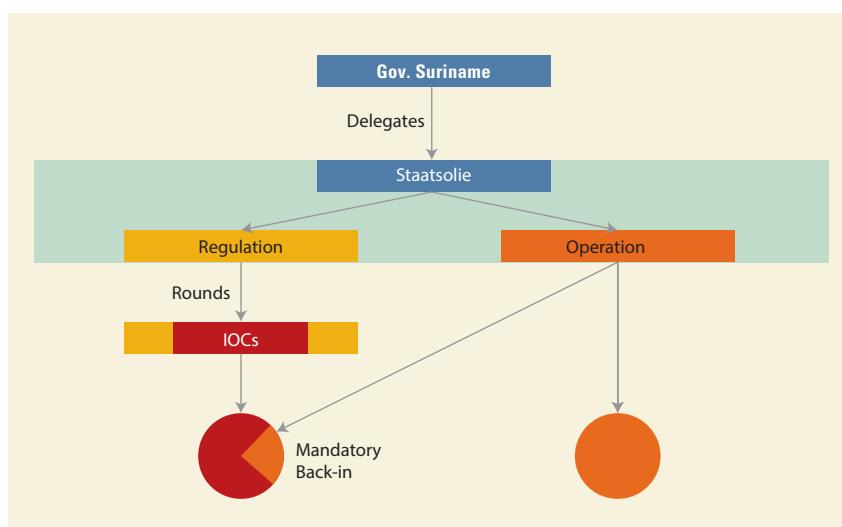
By contrast, the royalty rate of 1 percent for small-scale gold in Suriname is fixed and lower

than the rates in neighboring countries. Regulations about royalty payments by small-scale miners differ from those for holders of large-scale gold exploitation rights. For the latter, royalty payments are determined on a case-to-case basis through their specific agreement with the Republic of Suriname. For the former, royalty rates were determined in a 2002 regulation on the gold market. Its 1 percent royalty rate is very competitive from an international and regional perspectives. Countries that apply royalties to gold sales apply rates between 1 and 12 percent, but most often below 5 percent. In Guyana, traders pay a 2 percent fee, plus a variable royalty between 3 and 5 percent, depending on the world gold price. French Guiana levies a royalty of 3 percent. The and very competitive has increased the attractiveness of selling gold in Suriname and some of the gold exported by Suriname is believed to have been smuggled from Guyana or French Guiana. A decade ago it was Suriname's gold that was being smuggled to its neighbors after the government introduced a 3 percent royalty. The outflow of gold only slowed down when the government deregulated gold exports and reduced the royalty rate to 1 percent.

which mining will be carried out in Suriname. Indeed, while the 1986 Decree grants discretionary power to the government on certain specific items, the draft mining code introduces the possibility of negotiating a Mining Agreement. The list of points that are open for negotiation in such an agreement, as provided in article 39 of the 2012 draft, is so long that one may wonder to which extent it does not undermine the effectiveness of introducing a new mining code altogether. Second, in line with the general approach in the 80s of the mining industry, the 1986 Decree does not mention anything about protecting indigenous people, communities or settlements. Nor does it mention anything with respect to the environment or any obligation for the holder of an exploitation right to rehabilitate the mining site upon ending the mining operations. This reflects the general approach in the 1980s of the mining industry to social and environmental aspects of mining. To a certain extent, the draft mining code of 2012 remedies this situation. Article

82 for example introduces the obligation to come to an agreement with the local communities in the case where the exploitation activities are carried out in an area where the surface rights belong to said communities—communal lands. By contrast mining agreements, like the Merian Act, goes into great detail on setting the environmental obligations of the holder of the exploitation right and on dealing with the local impact of mining with a rather clear intention to prevent mining from impacting traditional ways of life.

The legal regime under which Suriname's oil sector operates is to a certain extent underdeveloped. Upon reviewing the key pieces of legislation—Staatsolie's Concession Agreement (Decree E8-B, Official Gazette 1981 no. 59), the Mining Decree of 1986 (Official Gazette 1986 no. 28) and the Petroleum Law 1990 (Official Gazette 1991 no. 7, as amended in 2001)—that set the rules that govern the oil sector, a few issues become apparent. For one, by virtue of the Mining Decree concession State Enterprises hold all mining rights onshore as well as offshore and per the Petroleum Law they are authorized to enter into petroleum agreements with other established petroleum companies. This gives State Enterprises—Staatsolie—a lot of control of the sector and power to make decisions, which certainly affords the system flexibility but also generates some risks and potentially conflict of interest. Secondly, the current regime does not adequately address international best practices in the petroleum sector, particularly with regards to social license, indigenous rights, transparency, land rights and health, safety and environment (HSE) considerations. Additionally, the treatment of royalties in the oil legal regime is uneven at best: The Petroleum Law does not mention the royalty rate for onshore operations nor does it specify the rate for the exploitation of onshore oil and gas separately. The 2001 Amendment also puts forth a royalty rate for the offshore acreage that does not meet good practice because it does not take into consideration different levels of production, quality of oil extracted, level of investment, or project profitability.



**FIGURE 3.8**  
Institutional Design of  
the Petroleum Sector in  
Suriname

Note: IOCs are international oil companies. The orange ball represents wells operated directly by Staatsolie. The red ball indicates wells potentially operated by IOCs, with a mandatory share of the operation owned by Staatsolie.

## **Insufficient Knowledge and Promotion of the Country's Mineral Potential**

There is very limited availability of geological information in Suriname. The most recent geological map is from 1977 and has never been updated. Because of the dense vegetation, the deep weathering of the rocks and the thick laterite caps, which make it very difficult for geologists to study it with the naked eye, relatively little is in fact known about the geology of this area. It is only with indirect methods such as geophysical measurements, satellite imagery and other remote sensing techniques that the substrate can be better mapped. To establish which minerals—besides those already known—could possibly be recovered under favorable circumstances, and where they occur, a thorough investigation of Suriname's geology is required. Recent examples in countries such as Argentina, Madagascar or Mauritania have shown that the development of the geological infrastructure has a strong effect on the development of the mining sector.

## **Undeveloped Sector Institutional Framework and Capacity**

The institutional capacity to monitor the mining sector is lacking. The Ministry of Natural Resources has limited capacity with respect to the management and oversight of the mining sector. The technical knowhow has for long been left to the Bauxite Institute (est. 1981), which never had an equivalent for gold. The Geological Mining Department (GMD), in charge of both geology and mining titles, has lost most of its high-level human resources and lacks modern equipment (see Box 3.5 below for further details about GMD). In 2014, the Minister of Natural Resources himself declared that the Ministry should not have less information about the sector than the industry and called for the creation of a Minerals Institute. Industrial gold mining still does not come under any specialized institution, the Bauxite Institute has no longer any bauxite production to monitor, and the GMD still only has a couple of master's degree personnel. The long overdue institutional reform for mining in Suriname should therefore remain a priority and will require strong leadership, legal changes, and appropriate funding.

In petroleum, the government has delegated the management and monitoring of the oil sector to Staatsolie. Currently, Staatsolie defines the national strategy for the sector; identifies opportunities for further development (i.e. gathers and administers geophysical data, identifies and promotes opportunities); regulates (i.e. establishes the rules for the operation of the petroleum industry); contracts (i.e. organizes auctions and signs contracts on behalf of the Surinamese state with third parties in exploration, development, production and closure activities), and monitors, inspects, and audits (i.e., ensures compliance with the existing rules such as HSE requirements, directly or by agreement with other public authorities such as the National Institute for Environment and Development (NIMOS) and the Ministry of Labor). In addition, Staatsolie is expected to develop and maintain a commercially successful vertically integrated petroleum company, diversify into other businesses (e.g. power generation) all the while acquiring technology and management expertise.

**BOX 3.5****Suriname's Geologisch Mijnbouwkundige Dienst (Geological Mining Department)**

Although mining has played an important role in Suriname's economy from the 19th century, the sector did not have a dedicated government department until the 1940s. In 1958 the Geological Mining Department became part of the Ministry of Development (a precursor to the current Ministry of Natural Resources). At its formation the GMD was assigned four responsibilities:

- Make geological maps;
- Inventory mineral resources;
- Advise the Minister on mining legislation, exploration permits and concessions;
- Monitor the activities of third parties resulting from these (mine inspections) and provide services to others in the field of geological reconnaissance.

Geological surveys of Suriname were performed in the 1960s and 1970s. One of the main accomplishments of this geological fieldwork was the creation of a geological map of Suriname in 1977. Thanks to research from the GMD bauxite deposits were discovered in the Bakhuis region in West Suriname in the 1960s.

The Geological Mining Department was expected to play a leading role with regard to geological research, exploration for mineral deposits, supervising mining activities and attracting investors. But it has been unable to do this for years, partly because of a lack of skilled personnel and equipment. There are long-standing plans to transform the service into an up-to-date, autonomous organization and empower it, both institutionally and materially, so that it can better supervise the mining sector, but those plans have not yet been realized.

The concentration of power in Staatsolie gives Suriname's oil system flexibility but it also puts an undue burden on the company, besides generating opportunities for conflict of interest. The latter can arise for example when Staatsolie is deciding how much oil to produce: For the company's bottom line, ramping up production shortly after making and developing a find is important to help recover costs and make a profit. International experience suggests, however, that to minimize the risk of *Dutch Disease*—particularly when finds are large—production levels should be managed to allow the country to develop mechanisms to administer the wealth (e.g. Sovereign Wealth Funds), promote local content, economic diversification, etc. Conflict of interest may also arise when Staatsolie needs to cut costs but simultaneously also ensure that all regulations are adequately applied.

## Poor Mining Title Management

Suriname's management of mining titles lacks transparency and is often abused or not enforced. Under Suriname's current mining law, there are various types of mining titles, which cover diamond, gold, and other minerals: reconnaissance rights for up to 200,000 ha for a maximum of 3 years; exploration rights for up to 40,000 ha for a maximum of 7 years; exploitation rights for up to 10,000 ha for 25 years; small min-

ing rights for alluvial or shallow mining), and construction materials. Multiple applications may allow an enterprise to hold a larger area, following successful prospecting or exploration, for additional exploration or mine development. Exploration and production mining titles can be transferred to other qualified parties provided they are able to obtain environmentally sound modern mining technology.

Between 2005 and 2010, the number of exploration licenses tripled from 20 to 64 in Suriname, representing respectively an area of 420 and 1,020 thousands of hectares. Exploitation licenses also increased from 15 to 22 in this period. Unfortunately, since the information available on Suriname's mining permits and licenses is not regularly updated and shared, it is unclear whether or not the 86 exploration and exploitation licenses are still valid and which companies or individuals hold them. This lack of transparency creates room for speculation, reduces legal certainty (deterring investors), and also generates opportunities for corruption.

Acquiring mining titles in Suriname comes with rights and duties, which are often violated. Among others, the concessionaries have to submit quarterly reports to the Geology and Mining Department and pay taxes, and they are not allowed to sublet their concession to third parties (i.e. migrant miners). Some local Maroons and Brazilian *garimpeiros* however engage in artisanal mining on concessions and pay a fee of 10 percent of production to the titleholder. There are also some Maroons that have mined for decades in areas awarded in a concession, without applying for mining rights or paying fees either to the State or to any titleholders. They believe that their activity does not require government approval and claim the property rights over traditional land and its resources. Instead of complying with the official laws, they resort to their traditional Gramman (paramount chief of the tribe) and Kabitens (captains or village headmen) of the tribal villages. *Garimpeiros* usually pay their fees, either to the titleholder or to the Maroons that claim ownership over the land and its minerals. The result is a hybrid, complex and sometimes disputed structure of property rights, in which miners, local tribes and titleholders all claim a share of the resource rents. It is in the complex structure of formal and informal claims that the government needs to enforce its own rules (defined in the Mining Decree) and reap its fair share of the rents. The GMD however does not have the resources (human and material) to execute effective control.

## Rampant Illegal and Informal ASM Activity

The rampant illegal and informal ASM activity in Suriname undermines existing legal and regulatory regimes, tests the authority of the state over its territory, damages the performance and competitiveness of mining operations (from industrial miners such as Rosebel, to medium-scale miners such as Sarafina) and discourages the development of new prospects (costs of dealing with migrant miners make Suriname less attractive to junior companies that often drive exploration). In addition, ASM activity in Suriname also taints the reputation of all mining activities (negatively impacting ability to secure a license to operate) because it is frequently associated with environmental degradation (mercury use, siltation of rivers, deforestation), social conflicts and criminal activities.

Over the years, the Surinamese government has adopted various measures to deal with the challenges linked to ASM activity in Suriname with limited success.

From launching a gold purchasing program in 1994; to creating the Maripaston concession to encompass an area of violent conflicts about stakes and putting it in the care of Grassalco; to cooperating with Brazil's and the Guianas' armed forces to fight the inflow of illegal miners; to formally establishing the Gold Sector Planning Program (OGS) to legalize ASM and restore order to the interior. OGS' most visible action thus far has been the removal of over 8,300 illegal miners from natural parks and several concessions belonging to Surgold, Grassalco, IAMGOLD and others. In most cases, expelled miners eventually return to the concessions to continue their illegal operations. The situation is particularly dire in Merian and Rosebel. In the latter as of December 2015 there were 200–250 illegal miners active in the Royal Hill pit, generating a loss of product and production (limited access to the pit) as well as high safety and environmental risks (due to the use of mercury and the miners' proximity to heavy machinery and the blast radius). In parallel with the removal of illegal miners, OGS has managed to register 19,000 people active in the gold fields; to improve the safety of the Afobaka dam and the Brokopondo reservoir by removing scallions operating there; to provide miners with training on GPS, GIS, the use of tailings ponds, retorts and water cycling, and to establish four ASM zones that give ASM miners access to land, training and government services.

Securing some of the gains made in recent years, however, requires large and constant flows of money and human resources, which are particularly hard to come by during an economic slowdown. It also requires an updated and stronger legal and regulatory framework that provides legal certainty to these processes and to the ASM activity in general.

## **Limited Development of Local Supply Chains and Linkages**

The size and structure of extractive industries' linkages to local suppliers of goods and services in Suriname is not clear. When productive linkages are present they can have a visible and widespread impact on employment and on economic diversification.

According to the 2012 Suriname Private Sector Assessment Report (Elias 2012), linkages between the large companies active in the mining sector and the local Small and Medium Enterprises (SMEs) is minimal. This appears to contradict the data from IAMGOLD, Newmont, and the Bauxite Institute, which points to the presence of established or at least developing goods and services supply relationships with local companies. The same is true for medium-scale mining and ASM for which little to no detailed information is available on their linkages, except for anecdotal information pointing to strong ties between local suppliers and ASM activities. Further research is thus needed to fully assess the existing linkages between industrial-scale mining as well as ASM to help identify possible business opportunities and areas for policy intervention.

Information on the role local content plays in the oil sector is also limited to the data volunteered by Staatsolie in its annual reports. As per the most recent two annual reports, Staatsolie is making a push towards enhancing local content by engaging local contractors: In 2014, for example, an assessment was executed at

30 local contractors focused on the gap between current and required adherence to Staatsolie's policies and procedures. The gap analysis was then discussed with all participating contractors, who subsequently submitted plans for improvement. While supporting supplier awareness of standards and procedures is important, it is only one of several ways of boosting local supplier participation. Others include building SME capacity, improving access to finance and reforming investment climate regulations, which are largely beyond the scope of what can be expected of Staatsolie but that could be considered by the Surinamese government based on a more complete and detailed understanding of the current status quo (including existing obstacles to local participation).

## Recommendations

The competitiveness of large-scale mining and the oil industry can be divided into two categories of considerations: mineral potential and policy factors. Government and stakeholders can act on both. The mineral potential is not just a "given" in the sense that it evolves through time in parallel to the scientific understanding of the underlying geology, as well as the fluctuating market preferences. The poor attractiveness of a country's mineral potential can be explained by a relatively poor natural wealth or by a lack of modern geological information or low appetite for the country's particular minerals from international markets at the time of the measure. Key policy factors include uncertainty concerning the administration of current regulations, quality of the geological database, environmental regulations, regulatory duplication, the legal system, the taxation regime, uncertainty concerning protected areas and disputed land claims, infrastructure, socioeconomic and community development conditions, trade barriers, political stability, labor regulations, security, labor and skills availability, presence of relatively cheap energy and good infrastructure.

Taking these categories in mind, this report makes the following recommendations on how to improve the competitiveness and contribution of Suriname's extractive industries:

### Promote Suriname's Mineral Potential

To improve Suriname's knowledge of its own mineral resources and boost the sector's competitiveness the government should undertake a comprehensive geology program. Pending more analytical work on this topic, such a program would typically include:

- Airborne geophysical survey: this consists in flying over the country with magnetometers and spectrometers to measure and map the surface's response; this is then used to guide ground survey.
- Geological mapping with associated geochemical survey: geological mapping is the traditional way to deduct the subsoil formation based on reading the surface; and a geochemistry campaign consists in taking samples in statistically predefined spots or along the streams to infer subsoil chemical composition.

- Setting up of a modern and easily accessible geo-database: it is key to integrate all the old and newly-acquired data into a unique geographic information system (GIS); this should in turn allow to capture, store, manipulate, analyze, manage, and promote geological data.
- Promotion efforts: promotion should include interpretation of data, production of thematic maps showing prospective areas for different ores, participation in international scientific and commercial events, etc.

Making the data and synthesis products openly available should be a priority as the information gathered is a public good (mineral resources are legally vested in the State). The program should also include training and support to a new generation of geologists working for the Geological and Mining Department and for the Universiteit van Suriname. Geological data are extremely valuable to a country not only to demonstrate attractiveness for investments, but also to guide decision-making in areas such as agriculture, water resources management, land use, urban planning and disaster risk management.

## **Improve Management of Environmental and Social Issues**

At the same time that Suriname's mineral potential is promoted, the Government of Suriname should also take steps to reduce the environmental and social risks associated with development of the extractives sector. One specific option that the government should consider is conducting a Strategic Environmental and Social Assessment (SESA) of the extractive industries, following the example of countries such as Malawi, DRC, Cameroon, Kenya, and Mozambique. The SESA acknowledges that sound environmental and social management is critical for the success of extractive industries activities, and that markets fail to allocate environmental and natural resources efficiently. It is a process that focuses attention on a variety of key issues, including: (a) institutional issues, such as weak capacity to enforce environmental regulations; (b) governance issues, such as inadequate compensation frameworks for environmental and social damage; and (c) political economy issues, such as unbalanced national and local frameworks for benefits sharing.

The SESA process in Suriname should combine analytical work with public participatory processes to engage multiple stakeholders—including vulnerable segments such as tribal communities, women, and youth—in a policy dialogue on environmental and social priority issues. If well implemented, SESA can be the catalyst for: increased attention to environmental and social priorities associated with extractive industries' development; strengthened environmental constituencies; improved social accountability by making policy process more transparent; enhanced sector capacity for managing environmental and sociopolitical risks associated with extractive industries development.

In parallel to preparing and conducting the SESA, the government of Suriname should launch a vast campaign to limit if not eradicate the usage of mercury. To succeed in reducing and preferably eradicating the use of mercury in the country,

the government should declare it as a key priority and nominate a champion such as the Minister of Natural Resources. The work of the champion should in turn be supported by the already established inter-institutional, multi-disciplinary *Mercury Free Partnership*. Preparation of Suriname's ratification of the MINAMATA Convention on Mercury, an international treaty designed to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds, should remain the main focus of the *Mercury Free Partnership*. At the same time the group could consider launching a vast campaign to eradicate the use of mercury in the interior of the country, modeled after Suriname's successful anti-malaria program. The campaign on mercury should simultaneously highlight the health risks linked to mercury and provide concrete demonstrations of non-mercury mining techniques: Grassalco's successful demonstration facility at Maripaston should be replicated in the new mining zones that OGS has established.

More generally, climate change exacerbates the negative environmental and social impacts of mining and its associated development. Mining-induced land-use change can reduce resilience by driving deforestation and loss of forest resources thus contributing to the emission of greenhouse house gases and reducing the capacity of ecosystems to adapt to negative results of climatic changes. Suriname needs to clearly identify mining as one of the drivers for deforestation when developing its strategy to Reduce Emissions from Deforestation and Degradation and forest stock enhancement (REDD+). Strategic planning should in particular consider not just the footprint of potential future mines but all the ancillary infrastructure. As an example, the development of the bauxite in the Bakhuis basins would require major power, railway, and port infrastructure, which would in turn have major impacts on the forest and their inhabitants. The SESA in Suriname should incorporate those dimensions and lead to the development of appropriate integrated strategic land use planning tool.

## **Develop Long-Term Sector Policies for Mining and Petroleum**

To contribute to the quality and predictability of the investment environment for extractives, Suriname should have a consistent set of long-term policies for the sector. As a priority, government should establish a policy that details the respective roles of the government and the private sector in developing the extractives industry to provide clarity, guide government planning, and inform investment decisions. This may be a sensitive issue in Suriname, but also one that is key for the successful development of the sector. Governments sometimes desire and require state equity in mining projects, either to create a public perception of State control over the development of the national resources endowment, or to participate in the financial rewards of the project. Those two objectives can be achieved through other means than equity participation. Almost no foreign investor will agree to terms where the government holds a majority equity position, and if government is a minority shareholder, it is questionable whether government gains any additional control or revenues than can be achieved through direct legislation. Additionally, governments that take an equity stake in a mine can incur substantial public dissatisfaction. In developing economies, the public often has unrealistic

expectations as to the benefits that it will realize from a mining project. This dissatisfaction is focused on the mining investor in nations where the state does not take an equity interest, but in nations where the government is a part owner, that dissatisfaction is extended equally to government. Most nations today have established a regulatory system whereby the government receives a risk-free tax take and exerts the desired level of control through statutory requirements.

The other key aspects that a sector policy should address include: mining title management, fiscal regime, environmental and social safeguards. Drafts of the mining and petroleum strategies addressing all key issues such as the role of government in the development of mining and oil and gas production should be shared in advance and discussed with all relevant stakeholders (government institutions, private sector, civil society) to benefit from their expertise (e.g. contribution from IOCs) and ensure their buy-in. Once that is secured, these long-term policies should be made public, to help frame all discussions/decisions on extractive industries in Suriname

## **Modernize the Legal Framework for Extractives**

To promote transparency, reduce uncertainty, and thus attract investment to extractive industries, the Surinamese government should go beyond the 2012 draft law and undertake in-depth review of key aspects of the existing legal and regulatory framework for mining and petroleum, such as taxation, environmental and social licensing and monitoring, land rights, ASM, contract administration, and technical, safety, and health regulations. The review should also consider international standards and good practice so that they feed into Suriname's own legislation (e.g., revenue-sharing agreements, mining and petroleum tax regimes, mining title management, etc.). A repository of readily accessible information and training tools for consultation should be made available to all participants in the review processes, including representatives of civil society, indigenous and Maroon peoples, and private sector or government officials. This legal review could provide a basis for a proposal of several new legal instruments such as, by order of priority, a new Mining Law (including tax provisions that cannot be included in the general tax law), ideally a separate new Oil Law, and as follow up regulations, a Model Mining Agreement and a Model PSC. This is not to forget that Suriname greatly needs a new Environmental Law not only for extractives but also for the other sectors.

To enhance predictability and transparency, the fiscal terms for both mining and petroleum sectors should be revised. For industrial mines, if the structure of a revised law is to include the signature of a mineral agreement between the Surinamese government and the company, the fiscal terms should not be negotiable. Best practice is to limit negotiations to detailed arrangements and special situations to reduce the time needed for closing the deal. For artisanal mining, to be able to enforce the tax on artisanal miners, the government should consider a special simplified regime, with a key role for the mining title holder. In both cases detailed analytical work and fiscal modeling should be done prior to making decisions in order to anticipate both the internal rate of return of mining operations and government take under different price scenarios. For oil and gas sector, the govern-

ment should consider revising the overall government take, including royalty rate so that it covers both onshore and offshore and is progressive (i.e. varies according to levels of production, quality of oil extracted, etc.).

## **Strengthen the Institutional Framework for Extractives**

To promote a more adequate and stronger institutional framework and facilitate inter-institutional coordination and management of the extractive industries, the existing institutional architecture for mining and for oil should also be reviewed taking in consideration international best practices. The assessment should tackle key aspects such as the governance model of the mining and hydrocarbons sector and be used as a base to design and plan a program to strengthen the administrative capacities, systems and procedures of government institutions, and to attract and train the required professionals to fulfil the requirements of the very demanding tasks of monitoring and overseeing the oil and mining sectors. The plan should include a clarification of roles and responsibilities, as well as identify the funding sources for the institutions involved, so that the resources needed to fulfil their duties are assured.

Specifically on petroleum, the Surinamese government should move towards the separation of the regulatory role of Staatolie (and create an oil agency, modelled after Brazil's National Oil Agency (ANP), Mexico's National Commission for Hydrocarbons (CNH) or Colombia's National Hydrocarbons Agency (ANH) for instance) from its operational role (and create an independent national oil company to represent the state in each development) to resolve possible internal conflict of interest. Separating these two roles has proven essential for securing dedicated, unbiased and professional monitoring; equal and fair treatment of the various stakeholders which enhances competition; promoting effective cooperation between national and international oil companies, and supporting transparency.

With respect to mining, the objective would be to create a strong and autonomous institution that could assume the Surinamese government's responsibility to manage geo-information, monitor statistics, stimulate the sector's development, regulate operations and enforce the law. This idea to consolidate the existing Geological Mining Service (GMD) with the Bauxite Institute and possibly other bodies is not new: although no detailed institutional assessment seems to be available to calibrate both the existing and the needed resources, there is a long-standing plan to reform the institutional framework. The US Geological Survey (USGS) made recommendations to this effect as early as 1992, and in 1998 the British Geological Survey (BGS) drafted a "Creating A Minerals Institute in Suriname Preparatory Study" in the context of an EU-funded project designed to assist Suriname in better coping with the volatility of commodity prices. In the 25 years since the BGS Study, the proposal might have lost traction but not its relevance.

Such a Mineral Institute should cover the three typical functions of mining administration. In a country where the State is the largest employer and the private sector needs to be enabled rather than constrained by more regulation or competition from the public sector, the recommendation is not to further expand the role of public administration. However, mineral resources are vested in the state and

government should have the means to properly exercise good and sustainable stewardship over the country's resources. It should indeed be better organized to undertake negotiations over mineral agreements in an efficient and fully informed manner. During exploitation, it should also be capable to impose remedies to mining companies based on solid technical grounds and in a transparent way. More precisely—and in addition to the administrative divisions dealing with human resources, financial resources, archives, IT, legal matters or library—strong sector institutions should cover the following three typical functions:

- 1 *Geological Survey.* The Geological Survey (or the Geological Mining Department (GMD) as called in Suriname) has a leading role with regards to geological knowledge, research and promotion of the country's mineral potential. It is generally the custodian of a national geo-database (GIS) as well as physical maps and collections of samples. Some countries even involve such a Survey in exploration on behalf of the State but given the costly and capital-risk nature of this activity, it is generally recommended that the State finances the acquisition of basic geological knowledge (cf. geological program below) whereas the private sector invests in capital-risk exploration of specific targets.
- 2 *Mining Cadastre.* The Mining Cadastre maintains an up-to-date registry of all mining titles, including pending ones. Best practice is that the cadastral information be publicly available and accessible. The absence of a reliable mining cadastre can create opportunities for corruption and unequal treatment of mining operators.
- 3 *Mining Inspectorate.* The Mining Inspectorate is the division in charge of monitoring the rights and obligations of mining title holders and enforcing associated regulation. It is usually also in charge of developing sector statistics and to liaise with other government departments such as the Ministry of Finance for fiscal matters and the Ministry of Labor, Technological Development and Environment for both environmental impacts and labor issues.

To ensure its success over the long run, the Minerals Institute should be financially sustainable. The possibilities range from a sole government budget to a range of financial resources that include fees charged to sector companies. To avoid conflict of interest, many countries have developed earmarking of a portion of royalties to the sector institutions. In Suriname, it was contemplated that 25 percent of royalties on bauxite and construction materials be allocated to the Minerals Institute. This will have to be carefully assessed, and of course gold might have to replace bauxite. It was also contemplated that the Institute would benefit from 0.5 percent of the market value of all other mineral resources. The costs and benefits of adding such a de facto 0.5 percent royalty should also be carefully assessed.

## Promote Transparent Government Revenue Management

Given the strategic place of extractives in the country and the demand for accountability from the public, Suriname should adopt tools to promote high transparency

standards regarding management of revenues generated by oil and mining. This would also improve the investment climate by providing a clear signal to investors and international financial institutions that the country is committed to greater transparency; by strengthening accountability and good governance, as well as promoting greater economic and political stability. This, in turn, can contribute to the prevention of conflict based around the oil, mining and gas sectors. One such tool is the Extractive Industry Transparency Initiative (EITI), which Suriname is already planning to join in 2016–2017. The information provided through EITI is crucial to mitigate political and reputational risks negatively affecting businesses and governments' alike. In extractive industries, where investments are capital intensive and dependent on long-term stability to generate returns, reducing instability is beneficial for business. Transparency of payments made to a government can also help to demonstrate the contribution that their investment makes to a country. Benefits to civil society from the EITI come from increasing the amount of information in the public domain about those revenues that governments manage on behalf of citizens, thereby providing opportunities to hold government institutions to account.

Another tool the Surinamese government should consider reviving the Suriname Stabilization and Savings Fund (SSSF), which would capture excess mineral- and oil-related revenues and help minimize "Dutch Disease" effects (see Box 3.6 below). For the SSSF to be effective, transparent governance will be required as

### BOX 3.6 Stabilization and Savings Funds

Revenues from extractive industries are highly volatile due to the short-term commodity price fluctuation, which makes it difficult to plan budgets or commit to investments, and which can cause large swings in the country's economic conditions. Short-term macro-economic management needs to use prudential rules in setting budget and exchange rates, and build buffer funds to absorb commodity price volatility. One of the ways countries are addressing the volatile resource revenues is by establishing special dedicated buffer or price stabilization funds. Timor-Leste's Petroleum Fund has been widely regarded as one of the successful examples amongst developing. The Petroleum Fund balances the effect of swings in international petroleum prices. Similarly, South Sudan has established an Oil Revenue Stabilization Account (ORSA) as one of South Sudan's two reserve funds (the other being the Future Generation Fund). An ORSA

is an account into which the government channels a share of its revenues, and uses these funds if price shortfalls hit the budget. The purpose of oil stabilization funds such as ORSA is therefore to build up a protective buffer against market fluctuations and ensure the country has sufficient budget funds until spending is adjusted or prices rise or reach a more stable level. The level of funds that should be saved, and invested through sovereign development funds should be tailored to a country's specific needs and capacities and should balance the annual budget needs, the requirement for investment in the development of infrastructure, education, health etc. and the responsibility to be good stewards for future generations with the capacity to manage investments within federal, state as well as local authorities. Without the capacity to invest, resource revenues could be wasted in cost overruns, delays, inflation, corruption and other inefficiencies.

well as clear guidelines on how to use the fund. The Ministry of Finance is already leading a legislative reform to pass a Savings and Stabilization Fund Bill that would achieve these benefits once the bill is fully enacted as law.

## **Support the Development of Supply Chains and Linkages**

The government could consider establishing a supplier development program to increase local linkages with the extractive industries. As a first step, the government should conduct an initial diagnostic to assess the size and structure of existing linkages between ASM and industrial mining companies and local suppliers, as well as forecast demand for goods and services for extractives that could be met through local supply. The Government of Suriname could then introduce a supplier development program drawing on the diagnostic to encourage the incorporation of competitive local content in the supply chain of global mining and oil and gas companies. Such programs can be an effective way to contribute to economic diversification, to increase competitiveness and long-term profitability of companies, to create jobs, and to strengthen social license to operate through relationship with local suppliers and local communities.

The program should provide tailored solutions to each subsector (petroleum, mining), based on the local reality and international best practices. In essence these types of programs:

- Address market inefficiencies. Measures that mitigate the barriers to local participation arising from high capital investment, specialized input, and technological complexity of the extractive sector.
- Promote competition and the emergence of an efficient domestic economy. Temporary market interventions that help to support the development of domestic competence.
- Foster technology and spillover effects. Measures that incentivize the localization of R&D processes and centers of excellence.
- Support the development of adequate local skills. Measures that support the development of a better-educated workforce to increase productivity and adaptability.
- Develop regional trade synergies. Measures that promote efficient access to public goods, better coordination, the diffusion of best practices, work mobility, regional comparative advantages, and economies of scale.

## **Improve Mining Title Management**

To improve the governance of mining titles and address the issues related to legal uncertainty and lack of transparency, the government of Suriname should clearly lay out the “rules of the game” and ensure fair treatment of all players with respect to mining title management. One way to move ahead is to modernize and strengthen the mining cadaster, following the example of countries like Peru,<sup>37</sup>

and improve the GMD's capacity to monitor implementation (a difficult but at the same time absolutely crucial task). Additionally, the government of Suriname could consider adopting the notion of "first-come first served," which gives priority to the first one claiming a right of reconnaissance or exploration of an area. With sometimes limitations linked to the technical and financial capabilities of the requester, this principle is the best way to minimize arbitrary decisions and corruption in administrative decisions. Then explorers—fundamentally risk-takers—will want guarantees that they can obtain the right to exploit if they discover economically viable deposits. Without those guarantees, they might simply not be able to convince shareholders to risk capital.

## Advance ASM Formalization

Efforts to formalize ASM should be continued. ASM poses very significant challenges that cannot be easily addressed. Formalizing informal miners does not only give the government the ability to levy taxes on the income from currently informal miners, but also to better regulate and control their actions. At the same time, the government could offer better public services to the people in the interior, such as protection, education and health care. Thus, the taxation of miners could, in part, reflect the benefit principle of taxation: miners are charged on their income and receive public services in exchange. The transformation from informal to formal thus requires a comprehensive approach in which taxation is just one element. OGS has over the past four years adopted and implemented a series of strategies designed to bring order to ASM in Suriname with some success. Keeping this progress alive will require, among others, additional investment (time and money) in OGS' already identified activities; the improvement of coordination among ASM miners; the expansion of zoning of mining regions, active border cooperation with Brazil and Guyana; the development of incentive schemes for sustainable mining practices; and the elaboration of new legislation and regulations.

## Notes

- 1 See for example Helman, Christopher, 'With Second Big Oil Discovery, Exxon Puts Guyana on the Map', Forbes, June 30, 2016. Available at: <http://www.forbes.com/sites/christopherhelman/2016/06/30/with-second-big-oil-discovery-exxon-puts-guyana-on-the-map/#312343382b99>.
- 2 Alcoa also justified its decision with the high energy costs. To find the proper energy mix for its Suriname operations, it had been using both hydropower from Afobaka and heavy fuel from its own thermal plant, both of which were said to be no longer competitive. The power produced by Afobaka was mainly used for the alumina smelter in Paranam, until it was dismantled in 2000. The national power company (EBS) signed an agreement to procure the extra power and its purchases increased substantially from 50 MW in 1996 to 120 MW in 2007. At the same time, Alcoa needed huge amount of energy in the form of heat and steam to refine bauxite. Because transforming power into thermal energy can be costly, natural gas, coal and oil combusted on site are the most usual fuel sources and Alcoa built a 78 MW thermal power plant at Paranam.
- 3 For more, please refer to: <http://www.starnieuws.com/index.php/welcome/index/nieuwsitem/35261>

- <http://www.radio10.sr/nieuws/bauxietdeal-monaco-resources-in-afrondende-fase/58844>.
- 4 For more, please refer to: [https://www.alcoa.com/global/en/investment/pdfs/2015\\_Annual\\_Report.pdf](https://www.alcoa.com/global/en/investment/pdfs/2015_Annual_Report.pdf).
  - 5 See for example 'EX-99 – IAMGOLD Annual Information Form for the Year that Ended December 31, 2013', March 21, 2014. Available at: <https://www.sec.gov/Archives/edgar/data/1203464/000119312514110217/d697067dex991.htm>; and Jadnanansing, Sharmila, 'Global Challenges in Gold Mining', IAMGOLD, April 30, 2016.
  - 6 A revised life-of-mine plan for Rosebel, completed in December 2015, demonstrates a mine life of 6.6 years and average attributable gold production of 316,000 ounces per year.
  - 7 There is no equity dilution mechanism in this deal, which means that the government's stake will be preserved regardless of whether the government has the funds to cover its share of the investments required by the JV. Nevertheless the government is expected to look into alternative payment options like a shareholder loan.
  - 8 'IAMGOLD's Rosebel Mine Signs Agreement to Acquire Saramacca Property: Potential Soft Rock Mineralization Could Extend Rosebel Mine Life', IAMGOLD, August 31, 2016. Available at: <http://www.iamgold.com/English/investors/news-releases/news-releases-details/2016/IAMGOLDs-Rosebel-Mine-Signs-Agreement-to-Acquire-Saramacca-Property-Potential-Soft-Rock-Mineralization-Could-Extend-Rosebel-Mine-Life/default.aspx>.
  - 9 For more the agreement please refer to: <https://www.sec.gov/Archives/edgar/data/1164727/000119312514285190/d755143dex102.htm>
  - 10 As per the Mineral Agreement, there is a equity dilution mechanism, i.e. amounts owed that the government of Suriname cannot pay will be deducted from its stake in Surgold.
  - 11 'Newmont Brings Merian Into Commercial Production on Time and Below Budget', Newmont, October 3, 2016. Available at: <http://www.newmont.com/newsroom/news-room-details/2016/Newmont-Brings-Merian-into-Commercial-Production-On-Time-and-Below-Budget/default.aspx>
  - 12 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 an estimate 12,000 are Brazilians, directly work in ASM. This would be equivalent to a significant part of the official workforce in Suriname (about 200,000 people).
  - 13 Most gold miners and mining service providers come from Brazil, known as *garimpeiros*; others from countries such as Peru, Haiti, Guyana, China, the Dominican Republic, and Colombia.
  - 14 Suriname has a substantial (almost 15%) population known as 'Maroons'. They live tribally, according to ancestral cultures and traditions, under comparable circumstances as the indigenous peoples. There are six maroon tribal peoples in Suriname: the Saamaka, Okanisi, Paamaka, Matawai, Kwinti and Aluku.
  - 15 Participants in the small-scale gold mining sector are required by law to pay to the government: royalties of 1% of total export value, sales tax, payroll tax, retirement provisions of 2% of income, and tax on profits of 36% of net profits.
  - 16 Small-scale gold miners are in contact with mercury in different stages of the mining process, notably amalgamation, separation of the amalgam, removal of excess mercury and burning the amalgam.
  - 17 Among other things migrant miners are obliged to make use of retorts to recycle the mercury when extracting the gold from the amalgam. Furthermore they are obliged to use sedimentation ponds and to fill in the mining pits.
  - 18 Staatsolie operates all the onshore blocks with the exception of the Coronie and the Uitkijk blocks, which are operated by its subsidiary Paradise Oil (100% owned by Staatsolie).
  - 19 Staatsolie Annual Reports, 2007–2015. Available at: <http://www.staatsolie.com/nl/media-center/publicaties/>
  - 20 The dividend that Staatsolie pays to the government has been set at 50% of net profit in the past several years.

- 21 'Staatsolie Nieuws', Staatsolie, No. 2, 2016. Available at: <http://www.staatsolie.com/media/21459/staatsolie-nieuws-oktober-2016.pdf>
- 22 As of 31 December 2015 proven reserves stood at 84 million stock tank barrels (MMSTB), a decrease of 16 MMSTB from 100 MMSTB at the end of 2014.
- 23 Staatsolie Annual Report 2015, Staatsolie, 2016. Available at: <http://staatsolie.com/media/21385/staatsolie-annual-report-2015.pdf>
- 24 Companies can sign a *Technical Study Agreement* (TSA) with Staatsolie giving them the opportunity to evaluate the acreage. In the case after this evaluation the companies want to continue exploration in a block they can negotiate a *Production Sharing Contract* (PSC). Extensive seismic surveys have been developed along the basin, and this information is sold to the interested companies within data packages.
- 25 In May 2016, Hess Suriname Exploration Limited, a Hess Corporation subsidiary, announced it would enter into a farm-out agreement with Kosmos Energy (operator) and Chevron Global Energy for offshore Block 42. Hess acquired a one-third interest from both Kosmos and Chevron.
- 26 Between 2007 and 2011, four exploration wells were drilled. Repsol's West Tapir well and Murphy's two wildcats did not encounter what they were hoping for, while Teikoku Oil, who drilled the Aitkanti well in Block 31 about 100 km north of Paramaribo, believed that the purpose of the well was accomplished.
- 27 Staatsolie received only two bids for Block 58 and no bids on blocks 59 and 60 in its 2015 offshore deepwater bid round.
- 28 This survey is an attempt to assess how mineral endowments and public policy factors affect exploration investment. The 2014 survey was circulated electronically to over 4,200 individuals and received a total of 485 responses, providing sufficient data to evaluate 122 jurisdictions.
- 29 Bauxite resources could be higher since only 25% of the concession area granted in 2003 – 2,784 km<sup>2</sup>—has been prospected. It is also expected that by washing Suriname could add 20-22% to its bauxite resources.
- 30 Suralco has held a mining concession for approximately 8,300 hectares in the Nassau plateau since 1977.
- 31 'Executive Summary for the Nassau Plateau Bauxite Project', Suralco, 2014.
- 32 According to the Geological and Mining Service of Suriname there are currently 123 exploration titles covering 1,882,514 ha; 60 exploitation titles covering 307,185 ha and 55 small-scale titles covering 10,037 ha. The total area under concession is equivalent to 13.5% of Suriname's territory.
- 33 For more on Moengo's operations please refer to: <http://www.moengominerals.com>
- 34 "Our Strategy", Grassalco, 2016. Available at: <http://www.grassalco.com/en/about-us/our-strategy> "Grassalco introduces 'crushed stone in a bag'", Grassalco, 2016. Available at: <http://www.grassalco.com/en/news/31-news/59-grassalco-introduces-crushed-stone-in-a-bag>
- 35 For more on this please refer to: <http://opportunities.staatsolie.com/en/data-projects/multi-client-data/> ; <http://opportunities.staatsolie.com/en/data-projects/maps/> ; and <http://opportunities.staatsolie.com/en/data-projects/data-packages/>
- 36 See for example "Zaedyus exploration well makes oil discovery offshore French Guiana", Tullow, September 9, 2011. Available at: <http://www.tullowoil.com/media/press-releases/zaedyus-exploration-well-makes-oil-discovery-offshore-french-guiana>
- 37 Peru maintains an updated online mining cadaster, available at: <http://www.ingemmet.gob.pe/en/catastro-minero-google-earth>

# 4

## Conclusions and Policy Recommendations

Suriname faces a historic opportunity to promote a transformation of its economy. Its economic model has been dependent on the extractives sector, with an associated large public sector that redistributes revenue earned from extractives, resulting in economic and social vulnerability to fluctuations in international commodity prices. The private sector outside of extractives is relatively underdeveloped, and Surinamese firms are little integrated into global value chains. The vulnerability associated with this economic model led to the recent economic crash following the downturn in global commodity prices—and led to renewed calls for economic diversification and private sector-led growth. This response to the current crisis creates an important opportunity for political will to enact reforms that encourage new private investment in diversified economic activities that can increase the competitiveness of Suriname’s economy.

This call for diversification raises a crucial public policy question: what kind of diversification, and for what purpose? Suriname has abundant natural resources and existing productive capacity in the agriculture and extractives sectors, although both sectors are concentrated in their production and exports and focus on commodity products with little quality upgrading or value added domestically. There is significant room for diversification within these sectors, in terms of attracting new investment to develop new products, upgrade product quality, and enter new markets with these more competitive products.

This report has identified opportunities and constraints to competitiveness and diversification within the agriculture and extractives sectors. Within agriculture, the report recommends prioritizing specific high-potential subsectors to address key



constraints in the export chain and promote new investment. This targeted sub-sector work can be supplemented by steps to improve the cross-cutting investment climate for agribusiness. Within extractives, the report recommends reforming key aspects of the enabling environment for the sector, such as identifying and promoting new mineral extraction potential, implementing legal and institutional reforms, and improving management of social and environmental issues in the sector. These reforms will both facilitate new private investment in the sector and improve the benefits generated by the extractives sector for the Surinamese people. Tables 3.1 and 3.2 below identify specific priority actions that the government can take to begin to implement these recommendations.

Further analytical work is also recommended to inform longer-term competitiveness and diversification plans. This report has analyzed the agriculture and extractives sectors separately, but there are opportunities to facilitate linkages between these sectors as well, such as regarding transport, energy usage, and local supplier development; additional analytical work could inform coordinated sector planning in the future. Additional trade competitiveness analysis will further identify competitiveness and market access potential of specific agricultural products. There is the need to assess existing local supplier relationships in the extractives sector to identify opportunities to increase domestic linkages (as mentioned in Table 3.2). Such future analytical work can build on the implementation of the short-term reforms recommended by this report, furthering the process of unlocking new investment that can increase competitiveness of the agriculture and extractives sectors in Suriname.

**TABLE 3.1 Recommended Priority Reforms for the Agriculture Sector**

Focus area	Specific recommended action
Priority subsector investment promotion support	<b>Select two subsectors for priority investment promotion support</b> from the list identified as having high potential for short-term impact: fruits and vegetables, cereals/animal feed, coconuts, pork, and aquaculture.
	<b>Design and implement strategic reform and promotion action plans for the two subsectors.</b> Through a deep dive into each subsector: identify key constraints to investment and export; develop reform plans to ease the constraints; prepare investor value propositions and target investor lists; and initiate outreach to local and foreign investors with information and match-making support.
	<b>Establish a cross-governmental implementation task force</b> to implement these investment promotion action plans, likely including participation from MTIT, MOALF, and IDCS.
General investment climate improvements for agribusiness	<b>Address constraints to agribusiness export market access</b> , in particular improving food quality inspection and certification facilities; promoting market access, especially addressing non-tariff barriers in CARICOM; and increasing technical support for farmers to meet standards. These reforms should be coordinated across different development partner programs, including with the initial work on prioritized subsectors.
	<b>Review and publicize procedures and requirements for land access</b> for agricultural investment to increase transparency and inform investment decisions of potentially interested investors.
	<b>Clarify institutional arrangements for investment promotion</b> , establishing one agency with investment promotion mandate and providing a legal basis for that agency's mandate through the Investment Law reform process underway.
	<b>Pursue private investment in agriculture SOEs</b> , informed by an internal Government of Suriname review of the legal and policy requirements to advance privatizations and development of an action plan to prioritize and package investment deals for specific enterprises.
	<b>Improve the investment policy framework</b> for promoting investment in agriculture and FDI in general, by strengthening investor legal protections and updating investment incentives through an updated Investment Law.

**TABLE 3.2 Recommended Priority Reforms for the Extractives Sector**

Focus area	Specific recommended action
Promoting mineral potential	<b>Finance and launch a comprehensive geology program</b> to acquire, interpret, and promote new geological data about mineral resource availability.
Social and environmental	<b>Advance the mercury program</b> to continue reduction of mercury usage in gold mining, with a specific goal of ratifying the MINAMATA convention on mercury. <b>Conduct a Strategic Environmental and Social Assessment</b> to identify specific needs for improved social and environmental management, build stakeholder consensus around reform plans and lead to appropriate strategic planning tools.
Legal and institutional reforms	<b>Advance the mining law reform</b> , with a focus on decreasing room for discretion in investor incentives and strengthening the framework for mining titles. For the mining subsector: <b>conduct an institutional assessment to define specific plans to establish a mineral institute</b> . For the oil subsector: <b>establish a policy to separate the regulatory and operational roles of Staatsolie</b> and plan for a separate regulatory body.
Sector reforms	As a priority sector policy, <b>establish a policy that details the respective roles of the government and the private sector in developing the extractives industry</b> to provide clarity, guide government planning, and inform investment decisions. <b>Advance progress with the Extractive Industries Transparency Initiative</b> to increase transparency around government revenue from the extractives sector.
Longer-term analytical work	<b>Assess existing supplier relationships between large extractives operations and local suppliers</b> and identify supplier development opportunities and needs to increase linkages between the extractives sector and the rest of the economy. <b>Conduct fiscal modeling</b> of different fiscal framework scenarios to understand implications for revenue generation and investment attraction.



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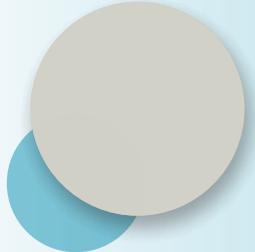
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# Appendices







## **Appendix A**

### **Agricultural Trade Analysis**

The agriculture sector scan methodology (per WBG 2014) consists of background research and in-country interviews with the private sector in Suriname to identify high-potential subsectors. To supplement this analysis, quantitative trade outcomes and competitiveness analysis was also conducted with a focus on agricultural trade using customs data from Suriname and other international trade data. This analysis drew on the World Bank's Trade Competitiveness Diagnostic Toolkit methodology (Reis and Farole 2012). Results of this analysis informed the sector scan findings presented in Chapter 2, and additional details are provided in this appendix, along with an overview of trends in trade development and demands for trade protection in Suriname.

Besides significant exports of bananas, rice, and fish and shrimp, agribusiness exports in Suriname are limited with no other export product averaging more than US\$1 million over the last three years. From 2013 to 2015, exports of rice, bananas, and fish and shrimp averaged US\$40 million, 30 million, and 34 million, respectively, and were by far the main agribusiness export products in Suriname. Among the selected products shown in Table A.1 below, only dairy (US\$338,660), cassava (US\$408,105), and fruits and vegetables (US\$910,928) averaged more than US\$100,000 over the same period. Furthermore, some products—like cocoa, coconut, and palm oil—are essentially not exported at all.

Analysis of the revealed comparative advantage (RCA) of Suriname's agricultural exports validates the importance of bananas, rice, and fish and shrimp in the export basket. Table A.2 below shows the RCA index for each agricultural export product with recent annual exports exceeding US\$100,000. The index is well

**TABLE A.1 Export Values for Selected Agribusiness Products, US\$**

	2013	2014	2015
<b>Animal products</b>			
Beef	9,753	11,624	11,017
Dairy	286,307	329,997	399,677
Pork	0	29,860	33,430
Poultry	2,542	11,577	74,969
Fish and shrimp	35,194,030	35,194,030	31,373,134
<b>Vegetable products</b>			
Bananas	32,301,219	32,605,117	24,503,415
Cassava	355,570	513,471	355,274
Cocoa	0	..	..
Coconut	8,478	13,691	9,845
Fruits and vegetables*	999,208	983,676	749,901
Palm oil	0	..	0
Rice	37,879,361	49,994,645	39,978,536

Source: Suriname customs

Note: '..' indicates trace exports of less than US\$5,000.

\*This measure of exports of fruits and vegetables is for fresh produce and does not include exports of processed products.

above 1 for bananas, rice, and fish and shrimp, revealing a comparative advantage for Suriname in those products. Cassava is the other export product with an RCA index suggesting a comparative advantage.

A few firms dominate export activities, with less than five firms accounting for the majority of exports in selected products. A cursory view of Table A.3 below shows that the total number of exporters for the majority of selected products is very small, with some products being exported by less than five firms, and only four products (cassava, fruits and vegetables, rice, fish and shrimp) averaging between 20 and 35 exporters per year.

With the exception of fish and shrimp products, exports are heavily concentrated in terms of markets (see Table A.4), with one or two destinations accounting for the majority of exports, such as for fruits and vegetables, cassava, and coconuts (approximately 95 percent to the Netherlands), rice (65 percent to Jamaica), and bananas (52 percent to France and 39 percent to the Netherlands). Suriname ben-

**TABLE A.2 Revealed Comparative Advantage (RCA) Index for Suriname's Agricultural Exports**

Product	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Bananas	12.0	25.8	30.5	33.4	40.3	44.2	49.4	46.9	36.4	39.1	38.3
Cassava	6.5	11.9	5.6	4.8	3.4	6.1	5.2	2.8	1.1	1.4	2.9
Dairy	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1
Fish and shrimp	15.8	14.5	13.1	13.3	12.4	12.2	13.9	13.9	8.3	10.1	9.3
Fresh fruits and vegetables	1.4	0.8	1.1	0.7	0.8	0.6	0.6	0.8	0.4	0.4	0.4
Rice	11.8	13.8	10.4	7.6	10.2	10.3	16.2	19.6	12.8	14.9	14.8

Source: UN COMTRADE.

Note: products listed include those with agricultural exports greater than US\$ 100,000 in recent years.

**TABLE A.3** Number of Exporters for Selected Agribusiness Products

	2013	2014	2015
<b>Animal products</b>			
Beef	1	4	2
Dairy	7	9	6
Pork	0	2	1
Poultry	2	2	2
Fish and shrimp	24	29	37
<b>Vegetable products</b>			
Bananas	7	7	2
Cassava	27	19	20
Cocoa	0	2	2
Coconut	4	7	4
Fruits and vegetables	32	35	36
Palm oil	0	1	0
Rice	24	34	31

Source: Suriname customs.

efits from duty free access to the CARICOM markets, but the country has not been able to translate this advantage into exports; exports to Jamaica and Trinidad & Tobago, the two largest markets, are limited to fish and rice exports to Jamaica, with virtually no exports to Trinidad & Tobago.

Suriname exports benefit from duty free treatment in the largest CARICOM markets but the country has not been able to translate this advantage into exports. Table A.5 below shows the tariffs paid by non-CARICOM countries when

**TABLE A.4** Main Export Destination for Selected Agribusiness Products in 2015, % Exports

	Netherlands	Guyana	Aruba	Other
<b>Animal products</b>				
Beef	0	72.6	27.4	
Dairy	0	93.3	0	Curacao (6.1)
Pork	0	100	0	
Poultry	0	0	17.5	Trinidad and Tobago (82.5)
Fish and shrimp	27	0.4	0.3	USA (18), Jamaica (13), Japan (11)
<b>Vegetable products</b>				
Bananas	39.1	0	0	France (51.7)
Cassava	94.7	0	2.4	Curacao (2.1)
Cocoa	2.1	97.9	0	
Coconut	95.6	0	4.4	
Fruits and vegetables	93.9	0	2.3	French Guyana (1.9)
Palm oil	100	0	0	
Rice	0	0	0	Jamaica (64.8), Venezuela (21)

Source: Suriname customs.

**TABLE A.5 Average Tariff Preferential Margins for Suriname Exports in CARICOM**

	Jamaica	Trinidad and Tobago
<b>Animal products</b>		
Beef	40	15
Dairy	17.5	14.6
Eggs	20w	27.5
Pork	40	40
Poultry	33	40
Fish and shrimp	29.5	29.7
<b>Vegetable products</b>		
Bananas	40	40
Cassava	28.3	28.3
Cocoa	11.9	11.9
Coconut	40	40
Coffee	31.3	31.3
Fruits and vegetables	26.3	30
Palm oil	28.3	28.3
Rice	23.3	23.3
Sugar	36.6	37.5

Source: WTO.

exporting to the two countries in the bloc with larger population and GDP than Suriname (population 529,000 and GDP PPP US\$4,725): Jamaica (population 2.8 million and GDP PPP US\$23,765) and Trinidad and Tobago (population 1.2 million and GDP PPP US\$27,016). These two countries represent 52 percent of CARICOM's GDP. The table below shows that the tariff preferences (i.e., the difference in tariffs paid by Suriname and non-CARICOM countries) granted to Suriname's exports compared to exports from countries outside CARICOM range from 11.9 percent for cocoa to 40 percent for beef, pork, poultry, bananas, and coconut. Thus, tariffs do not seem to be the main obstacle for exporting to these countries. However, non-tariff barriers like SPS measures might be restricting exports of some products.

Opportunities for import substitution also seem to be limited because most of the domestic demand for these products is already being met by local production or because the imported volume for some of these products is already small. Table A.6 shows the domestic production, import, and export values and their ratios for key agribusiness products in Suriname in 2014. Although data limitations prevent us from calculating the share of imports over domestic production for all products, the majority of the domestic demand for these products is already being met by domestic production as the ratio of imports to domestic production is very low for beef (5 percent), eggs (17.9 percent), pork (5.6 percent), cassava (1.7 percent), coconut (1.3 percent) and rice (1.3 percent). The only exception being poultry for which imports represented 82 percent of domestic production in 2014. On the other hand, only a few products like dairy, poultry, fruits and vegetables, and sugar

**TABLE A.6 Production, Import and Export Values for Selected Products in 2014, SDR**

	Domestic production	Imports	Exports	Imports/production	Exports /production
<b>Animal products</b>					
Beef	34,860,000	1,734,199	38,942	5.0%	0.1%
Dairy	—	55,277,493	1,105,491	—	—
Eggs	42,350,000	7,578,466	8,989	17.9%	0.0%
Pork	22,899,000	1,276,876	100,030	5.6%	0.4%
Poultry	99,335,000	81,452,465	38,783	82.0%	0.0%
Fish and shrimp	—	4,677,482	117,900,001	—	—
<b>Vegetable products</b>					
Bananas	85,486,000	611	109,227,140	0.0%	127.8%
Cassava	8,697,000	145,590	1,720,129	1.7%	19.8%
Cocoa	—	7,372,782	211	—	—
Coconut	36,193,000	457,501	45,866	1.3%	0.1%
Coffee	—	436,534	992	—	—
Fruits and vegetables	—	51,248,227	3,295,316	—	—
Palm oil	—	3,451,099	269	—	—
Rice	195,854,000	2,550,362	167,482,061	1.3%	85.5%
Sugar	—	48,038,455	504	—	—

Source: Suriname customs and LVV.

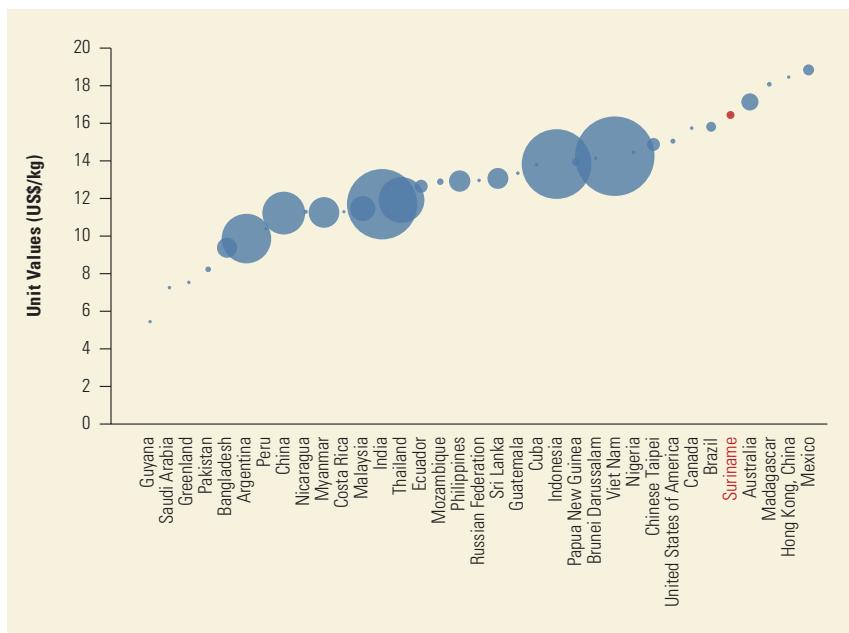
Note: Import values in bold are above US\$5 million per year. “—” indicates not available.

recorded exports over US\$5 million dollars in 2014 which will make them attractive candidates for import substitution.

The analysis of trade competitiveness of individual products provides interesting insights on potential future export expansion potential. Figures A.1 and A.2 below use shrimp as an example, examining imports of shrimp into Japan and the US, two important markets for Suriname’s exports. The size of the bubbles in the figures reflect the share of imports from that country; the larger bubbles (for India, Indonesia, Vietnam, and Ecuador) reflect imports from those countries that represent about 20 percent of total imports; Suriname represents a small but not insignificant share of imports. Exports to Japan receive a very high price of about US\$16/kg, one of the highest prices, while exports to the US receive a very low price of only US\$/kg. This analysis indicates that there may be opportunity to increase the value of exports sold to the US, or perhaps increase the volume of lower-quality exports sold to Japan. This type of trade competitiveness analysis can be done across products to inform the final subsectors prioritized for reforms and investment promotion.

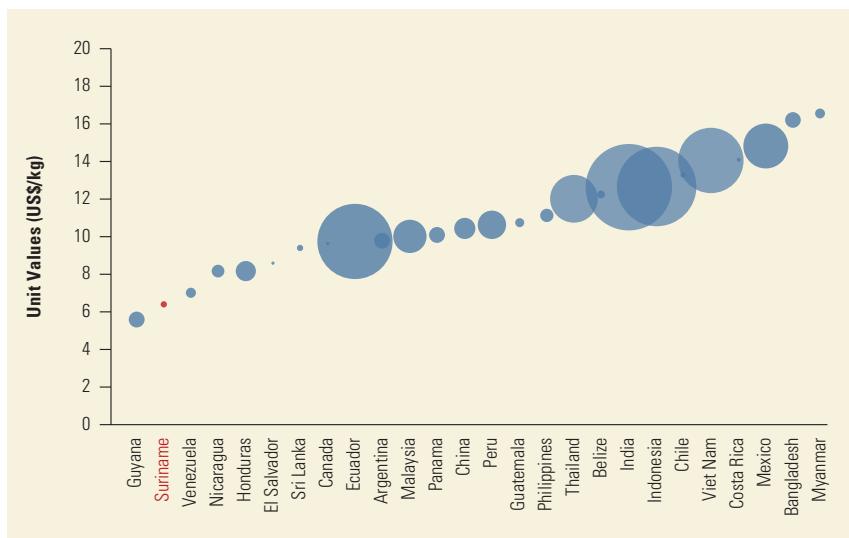
## Trade Development

As market protection for its crops is reduced in the EU, strengthening ties with the Caribbean Community is seen as a strategic goal (Panadeiros 2014), which would enable Suriname to take advantage of one of its major assets, land, in order to supply the largely land-scarce Caribbean islands. Despite recent improvements, Suriname’s shipping links remain relatively limited, with regular cargo flights to just three

**FIGURE A.1**
**Japan Imports of Shrimp from Different Countries**


Source: COMTRADE 2016.

Note: Size of bubbles represents the share of imports from that country; larger bubbles indicate larger shares, with imports from India, Indonesia, and Vietnam being about 65 percent of total imports.

**FIGURE A.2**
**United States Imports of Shrimp from Different Countries**


Source: COMTRADE 2016.

Note: Size of bubbles represents the share of imports from that country; larger bubbles indicate larger shares, with imports from India, Indonesia, and Ecuador being about 62 percent of total imports.

South American destinations and four in the Caribbean. Shipping routes for sea freight are equally limited with most cargo requiring transshipment through Port of Spain. Exports to Brazil, which borders Suriname, account for less than one percent of total exports (Elias 2015), there being no road links. One exporter reported that

difficulties are experienced in selling to countries such as Brazil, Cuba, and elsewhere in Latin America because importing countries require documentation in their language and the Surinamese authorities are unable to comply with this request.

Suriname has daily flights to Miami but no direct flights to other US destinations. Unlike neighboring Guyana, it also has about ten direct flights to Europe weekly, which can be used to export perishable produce such as fish, crustaceans, and vegetables. Although KLM flies Boeing 747s on the route to Amsterdam, which offer considerable cargo space, some exporters report that there is often a shortage of air cargo capacity to Europe. The main victims of this are the vegetable exporters: consignments of fish and seafood are not offloaded because fish exporters pay higher freight rates and because health certificates certify a specific number of boxes and European authorities will not accept a consignment where the actual quantity shipped is inconsistent with the certificate. The air freight space limitation is not universally acknowledged, however, with one sizeable vegetable exporter indicating that it never had problems.

Other countries have found that changes in planes used by airlines can have a negative impact on air freight options, to the detriment of agricultural exports. For a time KLM did replace the 747s on the Paramaribo route with smaller planes. The difficulty faced by both KLM and Suriname Airways is that the passenger traffic is seasonal and unidirectional. For example, when members of the diaspora return home for Christmas or for school holidays the planes are completely full flying from Amsterdam and almost empty in the opposite direction. Suriname has no significant tourism industry that could both provide balance and additional flights that could offer cargo space. Vegetable exporters see themselves as being in competition with the Dominican Republic, which has had considerable success in increasing air freight exports to Europe, partly on the back of a thriving tourist industry. Suriname's exporters cite that air freight rates out of Santo Domingo to Europe are less than half the rate charged for exports from Suriname. At least one of Suriname's exporters has ceased fresh exports because of the freight rates, preferring to ship frozen products by sea container. Exporters feel that cargo-only flights to the Netherlands would be valuable, although that would appear to require an increase in vegetable exports beyond that which could be presently absorbed by the existing "Toko" market (see section on vegetables).

In 2015 it could take up to a month to obtain export documentation for a particular consignment, with applications anecdotally reported as being required to be submitted in hard copy and manually processed. A project based in MTIT and funded by the Caribbean Development Bank and the EU, aims to introduce an Electronic Single Window (ESW), which could reduce the processing time to as little as 48 hours. The ESW will allow importers and exporters to submit all of the documentation needed online. A feasibility study for this was under way in mid-2016.

A general view in the literature is that potential exporters suffer from limited access to market information. This may serve more as an attempted explanation for limited market development rather than be a significant difficulty, as there are many web sites in the USA and Europe that provide trade information, particularly in the horticultural sector. Less is available about Caribbean markets, although a relatively recent study looked at horticulture markets in Barbados and in Trinidad

and Tobago (Capricorn Projekt 2009). A recent Caribbean Development Bank project, based at the Suriname Business Forum, aims to promote improved relationships between exporters in Suriname's agricultural sector and importers in Barbados and Trinidad and Tobago. Emphasis is being placed on capacity building of Suriname's exporters.

Investors have so far tended to take a fairly optimistic view of market prospects, without the benefit of detailed research. Examples include an aquaculture company that hopes the species it is rearing will gain consumer acceptance but has yet to establish this at a time when the first production is available to market; a company planting citrus that had not made prior contact with the country's leading juice maker; exporters who argue for introduction of cargo-only flights without having done a full assessment of the potential for filling them; and producers that had made assumptions about market access in the Caribbean without identifying the trade protection barriers that could be faced.

## The Domestic Market and Import Protection

In recent years there has been a significant increase in the number of 'supermarkets' in Suriname, ranging from fairly small rural or suburban stores to extremely large urban ones. This has largely been done by Chinese investors. However, the recent economic difficulties, which have resulted in a major drop in consumer purchasing power, have exposed the fact that investment in such retail stores was excessive. Some supermarkets have been closing and others have been constructed and not opened, or left half-constructed. Indicative of the retailing changes now taking place are the experiences of one poultry company, which had supplied 60 freezer display cabinets to various supermarkets and has now had 16 returned following the stores' closure.

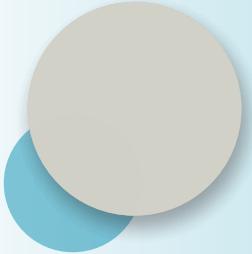
In fact, this rationalization may be beneficial for companies supplying the domestic market. Companies contacted indicated that the excessive number of retail outlets meant the volume they supplied to each was too small, increasing their costs. The dairy, MCP, also claimed that difficulties were caused by stores that apparently tried to save money on energy by increasing the temperature of their refrigerated displays, leading to deterioration in milk quality, a problem not experienced by competitors supplying milk prepared from milk powder as this does not go sour.

Agricultural subsectors that produce almost exclusively for the domestic market have tended to receive higher income transfers than those that produce for export. Analysis of the sector has argued that import protection should be replaced by efforts to increase efficiency in the sectors, such as by improving the quality and quantity of feed production for the poultry industry and reforming the dairy price policy to facilitate private sector involvement (Derlagen et al 2013). Under the Caribbean region's Common External Tariff (CET), duties imposed by Suriname on imports from non-CARICOM countries are usually 20 percent, including for meat products such as poultry. Some products, such as wheat and maize flour, are duty-free. Until recently the duty-free list contained 40 products, including non-agricultural products, but that had now been increased to 60.

Suriname's private sector takes a rather different view from that of Derlagen et al. It argues that the failure to reserve the right to use special agricultural safe-

guards at the World Trade Organization negotiations in the 1990s was a major mistake and has resulted in the country becoming an open market for imports, making it impossible to further develop local production. The poultry sector, in particular, points to claimed triple digit import duties in several Caribbean countries (for imports from outside the CARICOM area) and wonders why similar protection cannot be provided to Suriname's farmers. Chicken producers face particular difficulties because the bulk of the country's imports are of 'leg quarters'. These are not required by chicken meat processors in the USA and can thus be sold at a low price on other markets. A similar cause for concern is the import of skimmed milk powder, prices of which are low on world markets, in part because of EU farm support and other subsidies. Companies supplying other products are also worried about the expansion of the duty-free list as this could further jeopardize their competitiveness. For example, jam and ketchup have recently been added to the duty-free list, despite being produced locally.





## **Appendix B**

### **Factors Influencing Agricultural Development**

In the 2017 World Bank Group Ease of Doing Business Index, Suriname ranked 158 out of 189 economies, a slight decrease from 2016 when it ranked 155. From the point of view of attracting investment, a particular concern is that the country ranks 185 in terms of the ease of starting a business, 187 for enforcing contracts, 165 in terms of protection offered to minority investors, and 176 for registering property (Doing Business 2017). There has been a longstanding policy preference favoring public enterprise activities over the private sector, which has led to the creation of regulations that have placed barriers in the way of private investment (IDB 2014). Setting up a business required 13 different procedures and an estimated 84 days, although there have been recent efforts to reduce this time. Further difficulties for investors were highlighted in the 2010 World Bank Enterprise Survey, which noted that the four largest problems facing businesses were an inadequately educated workforce, customs and trade regulations, access to finance, and corruption (Enterprise Survey 2010). In the World Economic Forum Global Competitiveness Index, 2014–15, Suriname fared slightly better, coming 110<sup>th</sup> out of 144 countries. However, it was not included in the 2015–16 index because of absence of data.<sup>1</sup> To address the difficulties highlighted by these indices, the government set up a Competitiveness Unit in 2012 in MTIT (then the Ministry of Trade & Industry). It has since commissioned various detailed reports on how to enhance competitiveness (Julien 2015; ESP 2015). These have included recommendations to focus on fish and crustaceans, vegetables, gold, tourism, and wood products, including advocating for greater access to the Netherlands market and improved penetration of the US market.

There is no specific law guiding the process of investment attraction and no template for an investment agreement. The government has started to make reforms in broader economic policies that have an impact on agriculture, such as those relating to trade, infrastructure, and financial markets. Laws that need to be revised and rewritten have been identified as those relating to investment protection; legal certainty; transparency; alternative dispute resolution; industrial property; secured transactions; electronic transactions; licenses; and creation of limited liability companies (Elias 2015). In theory, this should simplify the investment process and reduce the requirement for investors to join multiple lines in order to establish their businesses. The first step in implementing these changes, the introduction of legislation, has moved forward slowly, although recent legislative progress has been made in 2016 with several priority reforms including amending the Companies Code, the licensing law, electronic transactions, competition policy, and secured transactions.

Agricultural policy in Suriname has included both general and commodity-specific measures that have created transfers to agriculture, including import tariffs, direct payments to producers, tax exemptions, subsidized credit, and government support for rural infrastructure, irrigation, research, and training. This approach leads to "ad-hoc and discretionary policy measures" (Derlagen 2013), with much investment depending on the willingness of the government to grant a license to a particular business. Several investors report having waited over a year for a license. The arbitrary nature of administrative decisions was illustrated by one commercial farmer who, following applicable rules granting a discount on duty for items imported for investment purposes, applied for and received a reduction for a particular product. Six months later, another application for the same product was denied.

## **Animal and Plant Health and Food Safety**

Until the outbreak of "Moko" disease in the banana industry,<sup>2</sup> Suriname's agriculture and livestock were generally free of economically important pests and diseases, such as black sigatoka that affects bananas (reportedly in the country but largely dormant), and a range of animal diseases. However, the country is vulnerable to other diseases from outside as appropriate regulations are not currently in effect.

While exports of bananas and rice are taking place to the EU and CARICOM without major problems, non-traditional export crops have had problems complying with food safety requirements. There is no food health and safety legislation and limited technical capacity for quality control.

Recent assessments have concluded that Suriname lacks the institutional and legal frameworks to support a sound agricultural health system. There is no co-ordinated surveillance system, and there is limited infrastructure and few skilled and trained staff for control purposes. Among the main concerns are agro-chemical and environmental contamination of the food supply, particularly due to pesticides, which are often used without attention to use instructions and with little understanding on the part of farmers regarding their utility. As in other areas, food safety programs are fragmented across government departments (IDB 2013), although recently efforts have been underway to improve the legislative environ-

ment for food safety. A state-of-the-art Ministry of Agriculture laboratory burned down some years ago shortly after opening and has not yet been fully replaced. The laboratory of the Bureau of Public Health is claimed by food processors to be inadequate. This places considerable difficulties in the way of identifying food safety and animal health problems. Exporters of animal products, in particular, require a certified laboratory to meet the demands of external markets, while exports of horticultural products to Europe require tests to be carried out for maximum residue levels (MRLs) of pesticides, for which samples presently have to be sent to the Netherlands. Even simple information required by farmers to decide on fertilizer application, such as soil pH content, cannot be obtained (Visser 2016).

Exports to the Caribbean are constrained by the lack of standards in Suriname that comply with those established in the CARICOM region. Producers of processed products are concerned that the Bureau of Standards has been slow to act on establishing such standards, as they would like to both export to Trinidad and Tobago and use Port of Spain as a hub for exports to the rest of the Caribbean. A related problem is the slow progress in developing phytosanitary protocols with CARICOM countries. Such protocols involve identifying all growers and packaging facilities and making arrangements for their frequent monitoring and inspection to ensure that they comply with necessary standards, including through the use of improved chemicals. Suriname hosts the Caribbean Agriculture Health and Food Safety Agency (CAHFSA) but exporters report limited interaction with this agency.

A further significant difficulty faced by exporters relates to the treatment of products at the airport prior to export. Although the airport is equipped with a functioning commercial scanner, packages are often ripped open, primarily as a drug smuggling control measure. Exporters also argue that the presence of sniffer dogs is unhygienic, and that this jeopardizes the benefits achieved from ISO, GlobalGAP, HACCP and other certification. One fruit juice exporter had to recall a consignment of certified fruit juice after delays at the airport. To address these problems fresh produce exporters have proposed construction of a central packing station. The use of legitimate exports to smuggle drugs is, however, clearly a potential problem and there are reports of exporters who have been approached to collaborate with this.

## **Agricultural Research and Extension**

A recent IDB analysis of Suriname's agricultural innovation system (Roseboom 2013) indicates that while there was a good history of plant breeding for rice and agronomical work at the former banana SOE, SBBS, the system as a whole remains fragmented. There are few records of recent publicly funded transfer of any technology. Agencies involved include the national rice institute (SNRI) at ADRON, CELOS at the Anton de Kom University (ADEK) and research conducted directly by LVV. The overall level of investment in agricultural research in Suriname is 1.1 % of Agricultural GDP (IDB, 2013). In its Agricultural Innovation Strategy, LVV puts emphasis on creating mechanisms to finance results-based innovation, and generating improved linkages with national and international research institutions. Research activities by all agencies have been criticized for not having been market oriented, although the Ministry of Agriculture does point to markets among the

diaspora for sweet potato and potential markets in the Caribbean for coconut oil and coconut water to justify its present priorities. Emphasis of both the Ministry and CELOS seems to be more oriented to the needs of rural communities than to larger commercial ventures, for which little support is forthcoming.

Extension in Suriname is the responsibility of the Agriculture, Livestock and Fisheries Department, leading to a possible duplication of effort. In the case of the Agriculture Department the Extension Division is not well staffed at present and lacks a clear extension strategy. The ministry employs 132 extension officers. There are three levels and the majority are at the lower level. Considering the relatively small number of farmers in the country, the extension officer/farmer ratio of around 1:75 is much better than the FAO recommended rate of 1:400. However, a long-standing problem is that many extension officers do not have the right educational qualifications. They have to be trained to bring them up to an adequate level of agricultural knowledge and extension skills but this training has reportedly been neglected (Visser 2016).

Extension officers work from three regional offices in the East, Middle, and West of the country. There is almost no presence in the interior of the country but there are some NGOs active in agricultural extension who mainly work in the interior areas. They often rely on LVV for technical backstopping (Roseboom 2013). Extension activities combine a mix of farm visits, use of demonstration plots and special training. An example of special training conducted is the collaboration with the new cassava factory to train around 600 farmers in cultivation practices. Collection of data seems to be one of the main tasks of the extension division and takes up much of the officers' time. This role inhibits development of a good relationship with farmers, who are reluctant to provide information for fear this could be used by tax collectors. Occasionally the Ministry distributes seed, fertilizer and other inputs free of charge but this is not done according to any transparent mechanism, "thus reinforcing the perception of favoritism and unprofessionalism" (Visser 2016).

Many farmers have received some training in Good Agricultural Practices (GAP) and received a GAP booklet to register all crop handling practices. However, few if any use this booklet because GAP adherence does not result in a better price unless they are one of the few working directly with processors or exporters. Extension officers reportedly do not feel that they get much support from researchers while, at the same time, researchers complain that extension officers promote technologies that have not been validated by them. A closer link between the two is definitely desirable (Roseboom 2013). As most farmers are part-time they are difficult to reach during normal working hours. A further problem is that agricultural extension staff is predominantly male (Roseboom J. , 2013), and there are cultural factors amongst some of the country's ethnic groups that could make access of male extension staff to women farmers difficult. In the main, women farmers tend to focus on subsistence cultivation, with the sale of surpluses at local markets.

Extension staff of LVV is sometimes contacted in case of a disease. Agro-input stores also provide information on crop protection, but in most cases this information is generally considered to be not too reliable (Visser 2016). Discussions held by the mission with input importers suggested that agro-chemical use is often fairly random rather than targeting a specific chemical product at a specific disease.

The Livestock Development Division has 15 extension staff, together with a few veterinarians. There are plans to turn an old State Farm into a training and demonstration center for the livestock sector, and it already has some small ruminants for which SRD 1.95mn was allocated for their promotion. The Fisheries Department provides virtually no extension, although there are plans to promote small-scale and community aquaculture and there are understood to be two officers responsible for this.

The weakness of the existing extension services is a major cause of concern. However, in a country such as Suriname, which has a 95 percent literacy rate combined with rapidly improving cell phone coverage, improving traditional approaches to extension may not be required. Brazil, for example, has an excellent Smartphone Application that provides advice to farmers on numerous different crops, how to grow them, the diseases they face and the ways of treating those diseases. Adaptation of this to conditions in Suriname and translation into Dutch could be very beneficial.

## Irrigation and Drainage

The northern areas of Suriname are largely flat and only just above sea level. In such an environment good drainage is essential. Existing drainage is largely by gravity. Salinity in the dry season is a problem up to 115km inland in some areas (Mertens 2008). The existence of pronounced dry seasons necessitates irrigation for many crops. According to budget figures, the government allocates approximately 80 percent of the total agricultural budget to irrigation and drainage. Several ministries are involved including the Ministry of Public Works; the Ministry of Regional Development; and the LVV. Farmers face problems with both oversupply and, in the dry season and short rainy season, with scarcity of water. In the rainy season, plots can be inundated for several days (Henstra 2013). Very large parts of the existing infrastructure are in a bad condition, due to poor maintenance and repair operations. In part, this is caused by the fact that much agricultural land is neglected and there is no water management on neglected land, causing problems for farmers on neighboring plots.

Failings in the existing system include suboptimal coordination between ministries; low managerial capacity of users' organizations (known as Water Boards); a lack of financial contributions by water users, with a consequent heavy reliance on government for operation, maintenance and investment; inefficient coordination in running the water supply, resulting in insufficient supply during periods of peak demand; and poor training and lack of commitment of Water Boards and farmers. Failure to price water provides no incentive to avoid spillage and waste caused by poorly levelled plots. While such technical, administrative and institutional problems have been thoroughly analyzed, there has been little follow-up and there is a "clear lack of leadership in addressing the problems" (Garrido 2013). In 2004 an EU project attempted to revitalize the Water Boards (which date back to colonial times) but none was functioning in 2013. Additional problems include the high cost of diesel for water pumping, the lack of assessment of demand and the lack of understanding of volumes pumped, so the amount of water supplied does not necessarily correlate with that needed. Status and power relations may play a major role in water allocation decisions (Henstra 2013).

## Land Availability and Tenure

Apart from the corporate farming of paddy in Nickerie and bananas in Nickerie and Saramacca districts, together with some privately owned plantations that date back to colonial times, mainly in the Commewijne District, farms tend to be very small (1–5 ha), providing little scope for economies of scale. Without some consolidation, these small farms may not be an attractive proposition for companies interested in working with smaller farmers for crops other than vegetables. The defunct SOEs for which the government had been seeking buyers are believed to have around 15,250 ha of arable land (Panadeiros 2014). A recently completed agricultural development plan makes several proposals for the utilization of some of this abandoned land by developing “reciprocal relations” between the corporate and smallholder sectors for cocoa, citrus and other products, although the commercial viability of the proposals does not appear to have been well examined (Kaplan 2015).

Based on the principle that “all land, to which others have not proven their right of ownership, is domain of the State”, commonly known as the “domanial principle” (Delchot 2008), approximately 95 percent of the total land area is publicly owned and, where appropriate for use, allocated under lease by the government. There is no clear protection of traditional use rights of indigenous peoples, tribes or other farmers and it is also unknown what percentage of land has clear title. There has been reported little effort by the government to identify property owners and register land titles.

This approach to land distribution goes back to early colonial times when land was issued under the condition that it must be cultivated. Since 1982, the new allocation of state land can only be done on a leasing basis. A little more than 1 percent of all land in the country is leased by the government to private individuals through long-term leases and rental agreements, or is held as communal property. There are two types of title: the land-lease title, the only type that has been issued since 1982, is more restrictive than was the leasehold title, because permission is needed to dispose of land under this title. As a result of these restrictions a lively informal land market in land-lease titles has developed, particularly when people have been unable or unwilling to comply with the requirement to cultivate the land. Nevertheless, large areas remain uncultivated.

This informal market may also have much to do with the fact that registration of land-lease titles between 1991 and 2007 was only about one-fifth of the number of applications and that the transfer of ownership or changes to the original approved uses requires permission of the Minister, which can cause considerable bureaucratic delays (Delchot 2008). There is a weak cadastral and land registry system, and inadequate land-use planning and enforcement (Roseboom 2013). A particular concern of the agricultural sector is the increasing use of good agricultural land for house building. This is mainly occurring in the Commewijne District, following construction of the bridge over the Suriname River that now makes commuting feasible to Paramaribo from Commewijne. The need to obtain approval for change of land use is often ignored and, if the procedures are followed, can take a long time. One agro-processor indicated that it had been waiting for over a year to get approval to construct a new factory on agricultural land. Furthermore,

there are reports that distribution of agricultural land is often politicized, with opportunities for rent seeking, as people with connections are able to more quickly obtain leases and then obtain approval to sell them on for a considerable sum.

An ineffective registration system makes it difficult for the government to sell land, because subsequent buyers cannot be sure that they are dealing with a seller who is the legal owner. The use of land as collateral for loans is thus very difficult. This lack of land rights represents a disincentive to make agricultural investments. The lack of registration is a particularly strong disincentive for an investor to make long-term investments, such as through planting tree crops.

Non-citizens and non-residents cannot receive land without special approval of the Council of Ministers. While this policy could control access to land for the diaspora, avoiding large tracts of land being left unfarmed, a consequence may be that potential sizeable investments by both the diaspora and expatriates will not take place. While the creation of a freehold land market appears to be desirable, numerous improvements to registration, legislation and other important areas are necessary for this to take place. Such changes are likely to require extensive technical assistance. When land sale does become possible, this should be done through competitive bidding rather than through the present allocation process. Additionally, transfer of existing land-lease and leasehold land to freehold should be done for fees that reflect the difference in value of leased and freehold land (Delchot 2008).

Despite the above discussion, it should be pointed out that companies contacted during the course of the research who had made recent investments requiring land, did not, with one exception, highlight obtaining that land as having caused major problems.

## **Human Resources**

Despite relatively high official rates of unemployment, particularly youth unemployment, difficulties in finding workers have been noted for several sectors. Contracts with Chinese infrastructure companies have permitted Chinese workers to be brought to the country to work on specific projects and workers from the Philippines and Vietnam have been recruited for other activities but the formal import of labor has generally been resisted by the country's trade unions. Even though most agricultural subsectors are presently succeeding in recruiting the required manpower, labor costs are high in comparison with other producing countries and a future shortage of workers is seen as a risk, particularly if employment in the mining industry expands. As in many other countries, the smallholder sector is aging, with a median age for males of 50 (Panadeiros 2014). There are already many workers from the Caribbean in the agricultural sector, notably from Guyana and Haiti. For the Surinamese, working and living in urban areas or overseas is becoming increasingly attractive and agricultural entrepreneurs report a considerable reluctance of people to take on farm work. Some farmers are reportedly encouraging their children not to follow in their footsteps. Many farmers work only part-time and, particularly in inland areas, some are said to be leaving their villages to prospect for gold.

In addition to a possible labor constraint for the agricultural sector there has been a shortage of qualified agricultural professionals, such as agronomists, and

other professionals needed by investors, such as accountants. Entrepreneurs in all sectors identify an important problem as being the inadequately educated labor force, with over 30 percent of firms identifying this during a recent survey (Ortega 2014). The recent economic decline has, however, led to an increase in the number of qualified professionals looking for work. There seems to be a mismatch between skills taught by vocational training institutes and the requirements of the private sector (Elias and Kamau 2014), although, as noted below, they are starting to offer courses in food technology.

In Suriname, the government has historically been the employer of first resort, and most educated people seek a job in the public sector. Although they are not high-paying, government jobs have until now been guaranteed until retirement and offer good benefits. A particularly important factor in the attractiveness of government employment is that it provides health insurance, which is not widely available elsewhere. There are also reports of enforcement of working hours not always being strict, and increases in the size of the public sector around election cycles, with a resulting underutilization of public sector employees. Thus the country faces a situation where, as many people prefer to continue to work in the public sector or to migrate, it is missing the most important factor for economic growth: human capital (Elias and Kamau 2014). In the private sector, labor flexibility is constrained by the Dismissal Permits Act, which prohibits employers from dismissing employees without permission of the Minister of Labor.

## **Technical Knowledge**

There is recognition by the private sector that large increases in exports of many commodities are unlikely to be achievable, for a number of reasons. For example, the permitted catches of fish and prawns are limited by the need to guarantee sustainability and exports of fresh vegetables are likely to continue to be constrained by air freight capacity limitations. Thus many entrepreneurs have been looking to find ways of adding value to their products rather than increasing the total quantity of exports. Several businesses contacted indicated that they lacked the necessary skills to introduce or upgrade processing, or to develop new retail packaging to replace bulk exports. The Polytechnic College (PTC) recently introduced a food technology course and twelve students are presently 18 months through a four-year course. The Natuurtechnisch Instituut (NATIN) offers a course at a lower level and graduates of this course may then move on to that offered by PTC.

Technical farming skills of smallholders appear limited. Several people contacted noted that farmers are content to follow the practices of their parents who, in turn, learnt from their parents. The apparent lack of interest in learning new skills and in technological innovation was commented on; this may have a lot to do with the fact that many farmers are part time. However, it is possible that the slow speed of change owes more to the lack of information than to the unwillingness to change. Inability of small farmers to comply with standards required for certification was also highlighted as a problem, an issue that is particularly important for the horticultural subsector. Some exporters and agro-processors commented that they have provided training, but with poor results.

## State-Owned Enterprises in Agriculture

There are a large number of state-owned bodies in the agricultural sector. In some cases, particularly rice milling and fish processing, these duplicate the role of private companies, although they play a relatively small role in the subsectors. In the case of milk, the SOE is the only buyer of fresh milk. The government-owned banana company, on the other hand, was sold to an overseas investor in 2014. In cases where the enterprise is not a limited liability company with the government as sole shareholder, the employees are usually regarded as civil servants and are paid by LVV.

The main SOEs involved in commercial or semi-commercial activities are listed below:

- Alliance Estate. This has 2200 hectares and is part-planted to citrus. A recent report (Kaplan 2015) recommends that it be rehabilitated with citrus and other crops, initially by planting limes, although discussions in LVV suggest that costs would be too high for profitable operation and other discussions suggested that the land was not suitable for citrus.
- Phedra, Victoria, and Babunhol are former oil palm estates. In the report by Kaplan Planners these are proposed for mixed activities including cocoa, dairy and broiler production (Kaplan 2015). One of these is now being used for small ruminant development.
- MCP, also a limited liability company, is the only commercial buyer of fresh milk, competing with three importers of milk powder.
- SML is a former rice plantation and mill, now just doing a limited amount of milling. It functions as a limited liability company. A few years ago, some of its land was sold to the state oil and petroleum company, Staatsolie, for planned sugar production that did not materialize.
- VKI is the agency that certifies that fish processors and aquaculture companies meet European standards.
- SAIL is a fish and shrimp processing limited liability company. It was recently denied certification by VKI and is inactive while problems identified are being addressed.
- CEVIHAS operates the main fishing port in Paramaribo.
- IAP is a recent factory development to process cassava. It has been funded with a loan guarantee from the government. Transfer of the factory to the Ministry of Agriculture is under consideration.
- SLOC is a small one-hectare nursery farm with ten workers. LVV indicates that the aim is for this to be privatized although it may be too small for commercial operations and there are existing private nursery operators.
- Mariënburg is a rum company that uses imported molasses as there is no sugar production in Suriname.

Most of the above are discussed in more detail in Appendix B on the individual subsectors. The intention to privatize many of the commercial SOEs was announced five years ago but, of the agencies proposed, only the banana one, SBBS, has been sold.

## Finance

The government has traditionally relied on domestic sources of financing rather than on external sources, thus lowering the exchange-rate risk by borrowing in the local currency. However, from the standpoint of private-sector development and investment, public-sector borrowing has tended to crowd out private-sector access to finance (IDB 2014).

Farmers experience significant cash flow problems, which are a barrier to investment in new crops or improved technology. Loans are difficult to obtain because few farmers can offer suitable collateral. As with elsewhere, banks are reluctant to accept moveable collateral such as machinery and equipment, but the lack of freehold land means that fixed collateral is difficult to provide. An Agriculture Credit Fund (AKF) was managed by the government-owned Agricultural Bank (Landbouwbank). Efforts had been made to seek an overseas investor for this bank, but it was recently merged, initially with the Volkscreditbank (VCB) and then the Surinaamse Postspaarbank (SPSB). Despite its name, the Landbouwbank functioned as a normal bank and did not pay particular attention to agriculture, with the exception of its role with the AKF. The maximum AKF loan for the agricultural sector was 200,000 SRD, for up to ten years, with the exception of loans to the rice sector, which could go up to 500,000 SRD. Interest rates were 6.75 percent per annum in 2013, which represented a subsidy of 5–6 percent compared with prevailing commercial rates. In July 2013, the total fund portfolio consisted of just 191 loans (Derlagen 2013). Following the recent transfer of ownership it is understood that no loans out of the Fund are presently being made. A Dutch MFI, Seva, which is based in New Nickerie, also makes loans to farmers to purchase pesticides, fertilizer, farming tools and equipment.

Investors almost unanimously have highlighted the high rates of commercial interest as being the major constraint to future investment. Several companies contacted had ambitious plans for expansion, but were unable to implement them at annual interest rates of 15–18 percent. An additional observation that businesses made was that bank officers responsible for deciding on loans rarely, if ever, had any knowledge of the agricultural sector to help them to tailor loans to the particular needs of agriculture.

## Agricultural Sector Representation

There are several organizations representing business, and the agricultural sector in particular:

**The Suriname Chamber of Commerce** provides services such as a "One Stop Window" to assist with applications for new licenses or license renewals. It maintains a register of businesses and publishes a Business Register. It also provides an Entrepreneurship Support Center that offers training in business activities.

**The Suriname Business Forum (SBF)** draws its membership from the Suriname Trade and Industry Association, the Manufacturers Association, and the Chamber of Commerce and Industry. The ministries of Trade and Industry, Justice, Agriculture, and Finance are also on the Board, as are the Women's Business Group, Anton de Kom University, and the Council of Trade Union Federations. The SBF has identified numerous laws that require reform if business is to succeed in the country but, so far, few have been repealed.

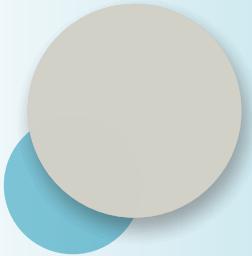
**The Suriname Manufacturers Association** (Associatie van Surinaamse Fabrikanten [ASFA]) has 12 member groupings, of which one is Agriculture and Food Industry. The association aims to promote the brand "Made in Suriname". It also provides advice on investing in the country.

**The Agricultural Platform of Suriname** was first proposed in 2015 in response to a request from the President of Suriname for consultations on various sectors. The agricultural sector was initially not included in this request but a few activists in the industry promoted the Platform as a means of facilitating consultation. The Platform was formally launched in May 2016. It has been built around existing subsector associations and has succeeded in getting support from all subsectors with the exception of rice, which recently experienced a split of its association into two competing organizations. The Platform aims to establish a high-level committee, drawing membership from the Platform and from relevant ministries, and wants to map out a detailed plan for agricultural development, with a time frame. Agricultural development plans have proposed to establish a formal Agriculture Chamber, which would have a legal status; this Agriculture Platform is cited as a possible forerunner to such a Chamber.

## Notes

- 1 [http://www3.weforum.org/docs/gcr/2015-2016/Global\\_Competitiveness\\_Report\\_2015-2016.pdf](http://www3.weforum.org/docs/gcr/2015-2016/Global_Competitiveness_Report_2015-2016.pdf) and [http://www3.weforum.org/docs/WEF\\_GlobalCompetitivenessReport\\_2014-15.pdf](http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf)
- 2 The moko disease is reportedly under control as of mid-2016, although not fully eradicated.





## **Appendix C**

# **The Main Agriculture and Fisheries Subsectors**

This section briefly reviews the agricultural and fishery products of Suriname. It includes important products for the domestic and export markets, as well as products not presently produced to any great extent, but which have been produced in the past.

### **Rice**

Rice is the main staple of Suriname. There are also significant exports. Until 2010 over 50 percent of these went to the EU as a result of preferential access under the Cotonou Partnership Agreement (CPA), and, from 2008, the Economic Partnership Agreement (EPA). However, EU preferences have been eroded because of general reductions in EU import duties on rice and the accession of new countries to duty-free access under the “Everything but Arms” program. This has led to a change in the profile of Suriname’s exports, and from 2011 Jamaica, where Suriname competes with Guyana for an import demand of around 100,000 tons, has been the dominant market. In 2014 73 percent of exports went to the Caribbean, 14 percent to North America and only 12 percent to Europe.<sup>1</sup> According to trade statistics reproduced by LVV, over half of these exports were of “cargo” rice (brown rice) (LVV 2015), but this seems inaccurate as mills contacted indicated that only small quantities of cargo rice were exported, to Europe. Also, recent export statistics suggest that the average value of cargo exports per ton is actually higher than that for white rice, which would be unlikely given that white rice has gone through

greater processing. In 2015 Suriname reached a government-to-government agreement with Venezuela to swap rice for oil products and fertilizer.

In exporting, the mills face a significant logistics constraint in that siltation at the Nickerie port means that only vessels with a capacity of up to 2500 tons can be used. Road transport to Paramaribo for export on larger vessels would not be cost effective.

The area under paddy in recent years was increasing until 2014, which is the most recent year for which figures are available. This is attributed to higher world market prices during the world food price crisis of 2007–08, as well as to the implementation of an EU Project in support of the rice sector in the Caribbean. However, despite the recent devaluation, the industry is under price pressure: since March, 2013 the price of 5 percent Thai rice on world markets has fallen from around US\$580 a ton to around US\$370 and the export price for Surinamese 25 percent "brokens" is now little over US\$300 which, according to the rice industry, "seriously threatens the survival of the sector".<sup>2</sup>

The great bulk of production is in Nickerie district. There is limited production in Saramacca. Improvement in yields has been relatively small<sup>3</sup> and total production, which for the larger farmers is highly mechanized, remains below levels achieved in the 1970s (Panadeiros 2014). No significant new varieties have been developed and existing varieties are liable to diseases, increasing the cost of pesticides and herbicides. Mills also complain that they are receiving a lot of paddy where the grain is not fully developed, leading to a higher proportion of "brokens" in the final outturn. According to the rice research center, ADRON, it is difficult to get an acceptable balance between the need to increase yields and the need for an acceptable milling quality. Mills have complained that seed supplied by ADRON is from a range of varieties and say that recent seeds supplied have led to complaints from rice customers in Jamaica regarding the poor "keeping" quality of Suriname's rice. Some farmers have started to use seed from Guyana, but this may not blend well with ADRON varieties.

The cultivated area is normally used for two crops a year with a larger area for the first one. On the larger farms both sowing and pesticide applications are done by plane, with a seeding rate of 180kg per hectare. Three or four companies, each with several planes, provide such pesticide and seeding services. Harvesting is usually done when the soil is still wet, causing significant soil compression, as well as deep tracks that damage the levelled ground. Estimated production of dry paddy in 2014 was 275,000 tons, with exports of rice in excess of 100,000 tons. Around two-thirds of production is by a small group of around 55 large farms of 75 ha and more. Many of the larger mills have their own plantations, running to several thousand hectares in some cases. The remainder of production is by around 1,500 small to medium farmers with just a few hectares. Smaller farmers are leaving the industry rapidly, with a consequent increase in the average farm size. Large government-owned farms have ceased operation over the last two decades and some have been divided among smaller farmers. Land used recently has been over 60,000 ha, a figure which includes double counting to take account of the two harvests, but greater areas are available if there was a market and if production, logistics and marketing difficulties could be resolved.

The paddy is harvested by combine harvesters and is immediately delivered wet to the mill. In this the system follows that of the USA rather than that employed

by the, mainly smallholder, production systems of SE Asia where the paddy is often first cleaned, threshed and winnowed, and possibly dried, by smallholders before sale to mills. On receipt at the mills in Suriname the paddy is first cleaned of extraneous material and the outer chaff is removed before drying takes place. This chaff or husk has no real value, although it can be used as fuel. Because the oil parastatal Staatsolie used to sell fuel to millers at advantageous rates there was no incentive to use husk for fuel for drying purposes. Only recently have companies begun to consider investing in husk-fueled dryers but no one company produces sufficient husk to justify such a dryer without buying in additional husk from other mills and, also, drying operations are only required for around two months a year. The mills have made a proposal to Suriname's electricity parastatal to supply all husk for an electricity generator, which would have an estimated cost of over US\$10 million. Such a generator could also use stalk from the fields, which is presently burnt illegally.

During the milling process, the hulls are removed from the raw grain to reveal whole brown rice, known in Suriname as cargo rice. This is sometimes exported as such, for subsequent milling in the recipient country, or for sale in the health food market where brown rice is valued for its nutritional content. Milling removes the bran layer, resulting in white rice. Almost all of the domestic demand in Suriname is for white rice. Most mills market their own brand of rice domestically but some do not export, preferring to sell to exporters, who are often the larger millers. The bran is sometimes used as raw material for the feed industry or sold directly to cattle or poultry farmers who prepare their own feed. There are opportunities to add value to the bran but they have yet to be exploited (Elmont 2010). Some broken rice is also sold to the feed industry (see section on Animal Feed below).

In addition to seed varieties, other problems faced by the rice subsector include poor irrigation and drainage, due in part to a lack of maintenance, that leaves rice-production areas lying idle (Macnack 2011), lack of funds for fuel to run irrigation pumps, poor land levelling, fluctuating yields and poor fertilizer application, little industry coordination, political interference in price setting, the use of outdated machinery, both for farming and for milling, and poor access roads. Farmers do not pay for water: introduction of charges would probably lead to a significant decline in production. Climate change is manifesting itself through diseases, pests and weeds that had not been seen before. Some of these matters, particularly relating to seed improvement, are likely to be addressed by a recently approved Islamic Development Bank project, to be implemented with the assistance of Malaysia, and scheduled to begin in 2017.

There are 24 rice mills, although not all may be working at any one time. Two of these are in Saramacca District. There is overcapacity in drying, storage and milling (Elmont 2010). However, this overcapacity does not seem to be leading to any great consolidation, although the industry does expect that some mills will close in the coming years. Competition to obtain farmers' harvest seems limited and the price offered by the mills is similar throughout the Nickerie area. When mills find themselves short of supply and unable to meet an order they are more likely to seek rice from their competitors than to raise the price to attract deliveries from farmers. Some have contracts with smaller farmers and may advance them funds to facilitate production and guarantee deliveries to the mill.

Following a Ministry of Agriculture program in 2009, at least seven mills are now ISO 2200 certified and others have British Retail Consortium (BRC) certification and GMP+ certification for rice to be used in feed. Little attempt at value addition seems to have been made and most rice is exported in large bags or bulk. Parboiled rice is popular in parts of the Caribbean and some limited quantities of parboiled rice have been recently exported, the Dutch Government having provided assistance to establish a parboiling plant. However, those interviewed during the mission indicated that local rice varieties were not really suitable for parboiling, which could only be successful if Suriname started to cultivate the variety used in Guyana.

## Bananas

Bananas are Suriname's most important agricultural export product. In the past this sector was dominated by a state-owned company, which went bankrupt (with an accumulated debt of US\$25 million) in 2002, resulting in the temporary collapse of banana production and export (Panadeiros, 2014). Subsequently, the government established a new SOE, Stichting Behoud Bananen Sector (SBBS), which benefited from grants and technical assistance from the EU Special Framework Assistance (SFA) and, later, the Banana Accompanying Measures (BAM) support program for ACP banana suppliers. This was aimed at helping them to address preference erosion that will see preferences fall from EUR 3.26 a carton in 2010 to EUR 1.38 a carton in 2020 (Derlagen 2013). This support in Suriname has been considered by the EU to be a success story.<sup>4</sup> Primarily as a result of increased yields, production reached 94,000 tons in 2010, but it declined to 77,000 in 2014. By bringing in new management in 2015, the company reports confidence that the decrease is only temporary and expects to increase production in the coming years, aligned with industry standards. The main markets are France and the Netherlands, but there has also been a recent increase in sales to Trinidad and Tobago as well as to the local market. There are two plantations, Jarikaba and Nickerie, with a harvested area of 1,978 ha. Bananas are also a source of animal food for the country and this provides a market for the fruit that do not meet export standards. As well as bananas, Suriname produces around 25,000 tons of plantains, for human consumption and backyard animal feed.

In 2014, a 90 percent share in SBBS was sold to the Belgian fruit and vegetable importer UNIVEG, which, in Suriname, trades as Food and Agricultural Industries NV, and is now part of The Fruit Farm Group. The willingness of a European company to make such an investment suggests optimism that Suriname will be able to remain competitive on the European market. However, European market prices have been squeezed in recent years by the tendency of supermarket chains to use bananas as "loss leaders". Opportunities to increase significantly sales of standard "Cavendish" bananas appear limited but the company is in close cooperation with different universities to try new varieties of bananas.

The subsector employs around 2,200 people, of whom 40 percent are women. Given the reluctance of people from Suriname to work in the agricultural sector, the company depends on bring in people from abroad; this topic is being discussed by the company with the government to find a long-term solution. In 2015,

it was identified that the Jarikaba plantation had been infested with the "Moko" disease. The company has put strict controls in place to control the outbreak, and reports success with disease control and that actions are being taken to exterminate the disease.

## Fruits

Fruits and vegetables are presently mainly grown by up to 4,000 small and part-time producers on family farms, using a low level of technology. With appropriate investment in production technologies, attention to product quality that follows EU marketing standards, the use of suitable packaging material, and the development of a cold chain, there does appear scope for significant increases in export sales of fruit (Kaplan 2015). Additionally, fruit processors use many imported raw materials that could be replaced by domestic production. A draft Agricultural Development Plan identifies melon, watermelon, lime and orange as being possible crops for development (Kaplan 2015). To this list could be added other products with apparent potential for export to Europe, such as papaya and mango.<sup>5</sup> Additionally, the berries of the podosiri (acai) palm, which grows wild in Suriname, are considered one of the top "superfoods" due to their antioxidant properties and presumed health benefits. They have been promoted on, among others, the Oprah Winfrey show. The purple berries are presently collected and processed into a juice, which constitutes an important part of the diet some populations in the interior areas of the country. The crop is also grown in Brazil where it is widely marketed as ice cream and other products.

The leading local juice processor is mainly interested in securing supply of passion fruit, the juice of which it believes has considerable export possibilities, as well as Surinamese cherry, mope (*Spondias mombin*), and ginger, but may also be happy to collaborate in the juicing of other fruits for various investors presently making new plantings.

In addition to smallholder production, citrus fruits are grown on the Alliance estate, a former sugar cane plantation that is now an SOE. Around 80ha are presently cultivated. The suitability of the estate for commercial citrus has been questioned, as the soil is clay, which is unsuitable for mechanization. A private Dutch investor has planted 20,000 trees of varying citrus types (lime, orange, grapefruit), together with podosiri, on cleared, leased land at a different location. He plans total plantings to reach 200,000 trees, which would require 3,000ha. The venture is being carried out in association with one of the biggest Brazilian citrus companies, which is providing advice on technical matters as well as on marketing. All production is planned for export, primarily to Europe, with about 40 percent as fresh fruit and the remainder processed. The coffee plantation, Katwijk, also has some citrus and was pulping grapefruit before its plantation was heavily damaged by floods.

Mango grows in abundance but there are numerous varieties, which complicates export sales. Similarly, recent expansion in pineapple plantings by smallholders, made possible by construction of a new bridge and road, has involved three different varieties, which does not cause problems on the domestic market but is likely to do so if investors started to export or carry out processing. Almost all

pineapple reproduction is vegetative. IICA has undertaken to provide new planting material that can be grown year-round (Visser, 2016). At present Suriname imports some pineapples from Guyana at certain times of the year. A Swiss company, Swisssur, grows 40ha of organic-certified acerola or Barbados cherry (*Malpighia emarginata*), on land that was a colonial plantation until 1860. The acerola is marketed in Europe as juice, powder and concentrate. As noted above, the banana company is also considering fruit development, including papaya and mango. It notes that Brazil is successfully exporting papaya by air freight, thereby avoiding the problem of having to harvest before the flavor is fully developed, which is a problem when sea freight is used.

Suriname is generally considered to be more or less self-sufficient in fruit, with the exception of temperate products, such as apples, and some imported oranges. However, local agro-processors producing juices often use imported raw materials. Frozen orange juice is presently shipped from Brazil to Suriname via Rotterdam and some is then soon to be reshipped to the Netherlands in retail packs aimed at the diaspora, as Surinamese people have a preference for sweet drinks.

Development of both fruit and vegetable production by smallholders requires attention to farming practices that can ensure certification in GlobalGAP and other standards. Originally set up by European supermarkets as EurepGAP, GlobalGAP is now a world standard. While not presently needed for sales to the diaspora in the Netherlands, it would be needed to expand exports to European supermarkets and is already often required within CARICOM, particularly where the market includes tourist hotels, which tend to require the same standards that their customers are covered by at home. Indeed, this is often mandated by travel companies. Unfortunately, smaller farmers in Suriname reportedly have significant difficulties in meeting such standards, for both fruits and vegetables. One company supplying both domestic and export markets works with seven outgrowers, while the leading juice processor started with 120 contract farmers but has only 30 remaining. Suriname Candied Fruits (see section on Agro-processing) is working with 52 farmers to produce citron and is also beginning to promote pineapple production.

Yields of fruit have been low by international standards and exports of fruit are very low, presently less than 500 tons. Obtaining planting material is said to be a problem. The domestic market for fresh fruits functions in a similar way as that for vegetables, described in the section below.

## **Vegetables**

Vegetable production is estimated at 24,000 tons per annum and roots and tubers at around 7,000 tons. Over 2,000 tons of vegetables were exported in 2015. Despite the stated intention to develop sales to the Caribbean, 95 percent of those exports were to the Netherlands, with leading products being bitter gourd (*Momordica charantia*), okra, string beans (yard-long beans) and African eggplant (*Solanum macrocarpon*). Demand in the Netherlands is said to be increasing for okra and string bean and other European markets are also reportedly interested. String bean was identified as a priority crop by an FAO Post-Harvest workshop in July

2015, in that it offers potential for economic growth and its low cost of production makes it suitable for poorer farmers. The fact that it is a leguminous crop also makes it beneficial for the soil (Visser 2016).

The climate is suitable for cultivation of vegetables throughout the year as there is only a small range of daily maximum temperatures, but in the two rainy seasons the crops must be grown under tunnels and the ground covered with mulch, to neutralize the effect of rain. Drip irrigation is also desirable (Kaplan 2015) to provide a more efficient use of fertilizers and water. Very little cultivation of this type is presently carried out but farmers have recently been reportedly using more water-soluble fertilizer, in part to save money following the recent price rises resulting from devaluation. Some are also using foliar fertilizer. There is generally considered to be scope for significant increases in vegetable exports, particularly in the European winter. However, for perishable vegetables this will require new approaches to air freight that would probably involve collaboration within the industry to organize charter flights (see Appendix A on Agricultural Trade Analysis above). One report identifies butternut squash, cherry tomatoes, capsicum, and zucchini as possible crops for development (Kaplan 2015). Other possibilities include roots and tubers, as well as hot peppers, which has had a recent first trial shipment to Trinidad and finds a sizeable potential demand in the Caribbean.

A study of the CARICOM market identified eggplant, cucumber, yams, and sweet potatoes as being potential products for sale to Barbados and Trinidad and Tobago. There is believed to be interest in the Caribbean for imports of organic products but, to date, little has been done to introduce the organic concept to Suriname and farmers are said to not really understand what is involved. Traditional Surinamese products are only of interest to the diaspora and are unlikely to find a market elsewhere, even in the Caribbean (Capricorn Projekt 2009). There are around seven regular exporters but others do occasional shipments. Sales are mainly to wholesalers who supply the "Toko" shops in the Netherlands, which are stores that serve the diaspora markets. Exports to supermarkets in the Netherlands are nil or negligible. There is some re-export of okra from the Netherlands to the UK and Germany, suggesting scope for development of this product. Exporters have so far avoided trying to develop sales to supermarkets, primarily because of transport constraints that limit quantities that can be shipped and because Dutch supermarkets require GlobalGAP certification. However, there seems to be a decline in the "Toko" shops as supermarkets broaden the range of products they sell, and exporters may eventually be forced to address the issue of certification.

Exporters have different approaches to obtaining their supply. Some have their own farms with, perhaps, some other farmer-suppliers. These are more likely to have or to be aiming to achieve certification. Others, who are presently content to supply just the "Toko" market, may rely on ad hoc purchases from local farmers. This is risky, however, as an increase in prices on the local market can mean that farmers will sell to local traders instead of to the exporter. Exporters do not have contracts to supplied fixed quantities but seem to basically send to their agents in the Netherlands whatever they have available. This can be risky if quantities shipped exceed demand. Exporters report occasional difficulties in obtaining payment from importers and disagreements regarding product quality. There are no arbitration arrangements.

On the domestic market vegetables are almost entirely produced by smallholders. The main crops are broadly the same as those exported; although root crops play a more important role, as do tomatoes and leafy vegetables. Production methods vary but in the case of tomatoes some farmers may use shade nets and raised beds. Soil fertility is maintained mainly by applying chicken manure, although this is reportedly becoming increasingly expensive, due to a rising demand. The vegetables are generally sold to traders with whom the farmers have had a working relationship for some years. The trader takes wooden crates to the farm and the farmer grades and packs the vegetables in the crates, to await collection by the trader. Payments are usually only made after the trader has sold the produce. The risk of post-harvest losses is thus taken by the farmer (Visser 2016). Traders are likely to sell to retailers in Paramaribo's central market but there are also several smaller markets in the suburbs and lots of roadside stalls selling both fruits and vegetables. Traders and larger farmers may sell directly to supermarkets, although many supermarkets do not handle fresh produce. Direct sales are also carried out to hotels and leading restaurants.

The country is largely self-sufficient in vegetables other than temperate ones. The notable exception to this general self-sufficiency is the mining sector. Other countries with high reliance on enclave-based extractive industries, such as Papua New Guinea, have seen the emergence of specific supply chains to provide fresh domestic produce to the mine workers. Such supply chains are often organized by the mining companies themselves but may also be operated by independent companies. There may be scope for such developments in Suriname as there is growing interest among mining firms to strengthen their linkages with the agricultural sector by procuring more of their food products locally (Ortega, 2014). Mine legislation does say that supplies should be purchased locally but does not specify that they have to be of local produce.

## Cassava

In 2014, production of cassava was estimated at around 7,000 tons (LVV 2015). A factory to produce cassava flour, Innovative Agro-Processing Industries Ltd. (IAP), was opened in 2012 in order to take advantage of market potential in Barbados. Despite the government's commitment to reduce state involvement in agriculture, it financially backed the factory. The company made arrangements with almost 600 farmers to supply raw material and carried out training of those farmers, together with LVV extension officers. Over 2000 tons were processed in 2015 and yields achieved by farmers were good. It is important that cassava be grown as a rotation crop (e.g. with soy) rather than as a monoculture, as continuous cropping can easily lead to soil exhaustion and soil fertility depletion. There are around 100 varieties of cassava and CELOS is trying to identify those with the greatest disease resistance, particularly against Cassava Frogskin Disease, which causes plants to produce thin roots that accumulate little or no starch. Meanwhile, farmers reportedly continue to use cuttings from diseased plants. Purchases by IAP in 2016 were expected to be close to 6000 tons but the company has presently ceased operations until difficulties with the processing facility can be addressed, running the risk that farmers will become disenchanted. IAP also appears to be short of operating capi-

tal. The long-term aim of the company is to supply the market for gluten-free products such as pasta, noodles and cassava chips.

There is some limited export of peeled, frozen cassava, usually in shipping containers, for sale to the diaspora in the Netherlands. Annual exports have varied between 200 and 450 tons in recent years. There is a past instance of this route being used for drug shipments. This accounts for only 2 percent of Dutch cassava imports and there would appear to be scope for expanding sales. A small processor in Suriname produces a kind of cassava porridge and Melkcentrale also markets cassava custard. Cassava also has a potential use as animal feed and the IAP factory has made some sales of by-products to farmers and the feed industry. At present, however, feed producers are reluctant to purchase cassava roots directly from farmers as they consider that the price farmers expect, similar to that they obtain in retail markets, would not be cost-effective for feed production. Moreover, they are not presently equipped to do the necessary preliminary processing.

## Sugar

There is now no commercial production of sugar, although it was a former plantation crop. In 2013 the oil and petroleum SOE, Staatsolie Maatschappij, began to grow sugar with the intention of producing bio-ethanol. Plans were to produce the crop on 150 ha on a trial basis. However, the decline in world oil prices, the SOE's lack of expertise in sugar, its inability to find a partner with the necessary farming skills, and alternative uses for the allocated funds meant that it ceased these operations in 2015. Ideally, sugar requires self-draining soils on land with a slight gradient. The Suriname coastal environment may not, therefore, be totally suitable. Suriname's rum distiller uses imported molasses. The growing awareness of the health problems associated with sugar consumption (e.g. the recent introduction of a United Kingdom "sugar tax"), the loss of ACP preferences in the EU, and continued planting by lower cost countries such as Uganda suggests that new investment in sugar in Suriname is unlikely to be viable for purposes of export. However, imports of sugar into the country reached SRD 48mn in 2014 and there may be some scope for import replacement, although possible difficulties with mechanization of the crop may render such production uneconomic.

## Oil Palm

Oil palm has been grown in the recent past, with most production being on three state-owned estates. There was a processing mill in Paramaribo. This business, which was set up with Netherlands development aid, collapsed in the late 1980s due to conflict in the interior (Roseboom 2012) and some disease problems and there are now 6000 ha of land under oil palm that are neither harvested nor used for other purposes.

Suriname's forestry policy emphasizes selective logging followed by regeneration. The exception is where land has been identified for conversion. Two zones were identified by the Foundation for Forest Management and Production Control (SBB) as being suitable for conversion to oil palm. Stringent conditions are imposed by the government when forest is cleared for plantation purposes. Clearing must initially be on a small parcel of land, which must then be planted to the conversion crop before further clearing can take place. This is to stop use of an agreement to grow plantation crops as a front for illegal logging.

An agreement was reached between the government and a Chinese company in 2011 to develop one area, involving 52,000 ha in the east of the country, but that agreement has been hotly disputed by inhabitants of the area. There has also been opposition to the proposed importation of workers from China. Although the agreement was endorsed by Act of Parliament, little progress seems to have been made and a required Environmental and Social Impact Assessment has yet to be carried out. The Act would need to be revoked before the land could be re-allocated to another investor.

Oil palm was mentioned as a high priority in the National Development Plan for 2012–16 and the government has recently been promoting the crop as a potential joint-venture investment to develop an additional 20,000 ha to the south of Paramaribo, which again includes the clearance of primary forest (IDCS, undated) and for which Malay-

sian investors have been identified. Despite the worldwide explosion in palm oil production, demand remains high. Production in Suriname on already cleared land, with certification as such by the Roundtable for Sustainable Palm Oil (RSPO), could achieve strong market penetration in the USA or Europe. However, the criticism of the environmental impact of many new oil palm developments suggests that clearance of forested areas would limit market opportunities to fewer buyers.<sup>6</sup>

## Cocoa

The world's chocolate producers are very concerned about future sources of supply of cocoa and are seeking new production areas to compensate for expected production declines in West Africa. Suriname has been a cocoa exporter. However, the plantations, which used the Fine Flavor Trinitario variety, were abandoned in the distant past and an attempt to rehabilitate them after WW2 failed, apparently due to disease. A study by IICA has confirmed that land and climate are suitable for the redevelopment of the industry if disease problems could be addressed (IICA 1992). A draft Development Plan recommends the establishment of cocoa using the high-yielding Forastero variety, involving two areas totaling 1300 hectares of commercial plantation farming and 135 outgrower families, each with 3 hectares (Kaplan 2015). Negotiations are under way with an Israeli company to implement this recommendation, with the area under consideration now believed to be 1500 hectares of the SOE Alliance Farm.

Leading world cocoa traders are interested in greenfield site development for bulk cocoa, although they would probably not want to invest in the land, preferring to limit themselves to offtake arrangements with the land developers. While cocoa has not traditionally lent itself to contract farming, some companies are now beginning to investigate this in order to guarantee both supply and traceability. However, a factor contributing to the decline in production worldwide has been the low returns experienced by farmers. In a medium-income country, such as Suriname, where many smallholders work part-time, cocoa may not offer suitable returns to small-scale farming. Harvesting of the crop has yet to be mechanized and labor requirements are high, at around one person year for three hectares. This may also constrain plantation development unless it was permitted to import workers from other Caribbean countries.

Traditionally, people had one or two cocoa trees in their gardens to make a chocolate drink known as "skrati" but this largely died out as imported chocolate drinks became widely available in the 1950s and the practice has not been transferred to younger generations. Some cocoa pods can still be found for sale in local markets. The name of skrati has recently been resurrected by a small company that produces Fine Flavor chocolate products. Some of these are exported to the Netherlands, but the bulk is sold in Suriname.<sup>7</sup> Production is only around 200 bars of chocolate a month. It has only 100 trees but also purchases small quantities from outgrowers. Suriname Candied Fruits also has plans to plant some trees of the Trinitario variety and also work with contract farmers, with the aim of producing and exporting small quantities of cocoa butter, while a resort plantation is also considering small-scale plantings.

## **Coconut**

This is another former plantation crop, with the main district for production having been Coronie. Some new planting of dwarf varieties has been observed. Ministry of Agriculture statistics estimate that there are over one thousand hectares of palms and that this area has doubled in recent years (LVV 2015). A draft Agricultural Development Plan recommends that the feasibility of rehabilitation of the industry be examined. However, it is unlikely that large-scale plantings would be commercially viable in a high-cost country such as Suriname, given the labor requirements to collect, open and process the nuts, although one farmer has experimented with a mechanical harvester to be used on the dwarf varieties. Even most low-cost countries have seen relatively little replanting. There may be scope for producing and marketing of coconut oil for medicinal and cosmetic purposes, particularly if this could qualify for organic certification, as such products are rapidly growing in popularity and are now being produced in many countries. Two small producers in Suriname, one organic, were identified in the course of the research, but there may be more. Coconut exports in the last three years have amounted to around US\$10,000 a year, nearly all to the Netherlands.

## **Coffee**

Coffee was formerly cultivated in reasonable quantities but production is now on only one plantation, Katwijk, which includes roasted coffee among a range of products marketed under the KW brand. The plantation experienced flooding in 2015, with the loss of almost half of its one thousand coffee trees. While prices on the world market fluctuate, there are, unlike with cocoa, no concerns about a structural deficit for the robusta coffee grown at sea level. It is not possible for Suriname to compete with bulk producers such as Brazil and Vietnam and the crop is likely to remain a niche industry, supplying local consumers, the tourist industry (by providing a picture of Suriname's colonial heritage) and, perhaps, the diaspora.

## **Fish and Crustaceans**

Fisheries account for just over 2 percent of GDP but until recently contributed 60 percent of agricultural exports by value, making it the second most important export category after mining. The USA is the main export destination, followed by Jamaica and the Netherlands. Production consists of finfish, sea shrimp, and seabob shrimp. Up to 45 species of fish are caught, with ten counting for 80 percent of the harvest. In recent years the catch of shrimp has tended to decline and evidence suggests that the most important commercial species of fish may have been harvested beyond sustainable levels, although export statistics report increases in exports until 2014. Snapper, which is caught in Suriname's waters by a licensed Venezuela-owned fleet, is also in danger of over-exploitation (Seijo 2013). Yellowfin tuna caught outside the country's Exclusive Economic Zone (EEZ) is landed in Paramaribo and exported fresh under an arrangement with the fishing company. In terms of quantity landed it is the dominant species. A significant reduction in the

number of shrimp trawlers has not yet led to the expected stock recovery and exports of shrimp fell by one third in 2014 compared with 2013.

In 2014, licenses were given to 114 shrimp and seabob trawlers and fish trawlers and landliners, mostly owned by foreigners, 400 coastal small-scale boats, and 753 inland and estuarine boats and canoes, although it is not clear how many of these were really active. The weight of fish exports amounted to 29,000 tons and shrimps to around 3,000 tons, of which 16,500 tons were accompanied by health certificates. The sector is estimated to employ around 5,000 people but it is reportedly difficult to obtain qualified labor.

Suriname suffers from piracy of fishing boats and from Illegal, Unregulated and Unreported (IUU) fishing, claimed to be mainly by vessels from Guyana and Venezuela. Estimates of stocks are based on Catch per Unit Effort (CPUE) rather than on a rigorous assessment of stock levels and are complicated by the fact that several of the species are trans-boundary resources. Suriname only recently developed a Coast Guard capacity, although formal legislation relating to this has yet to be passed. Meanwhile Suriname's waters are patrolled by the Defense Force, with costs met by the Fisheries Dept. A Sustainable Fisheries Management Plan (FMP) was prepared in 2013, but does not appear to have been formally published.

The industry is regulated by an SOE, CEVIHAS, which manages the main wharf for fishing vessels, supplies ice to the industry and operates a vessel repair service. Regulations govern the depth at which fish and shrimps can be caught and all industrial vessels are equipped with a Vessel Monitoring System (VMS) so that their movements can be tracked. One area of concern for CEVIHAS is that most of the processors operate at facilities that are not part of the main wharf complex. This makes monitoring of their activities difficult, both to ensure sustainability of the fisheries and in terms of monitoring the catch for tax collection purposes. The SOE therefore has plans for expansion of the main wharf with the intention of making it mandatory for all fish to be landed there.

The Viskeuringsinstitut (VKI) was established at the insistence of the EU and is responsible for ensuring that fish processing facilities meet acceptable standards. At the beginning of 2016 there were 17 approved processors but it has been rigorous in carrying out its role and has temporarily removed the licenses of four of them. These include a government-owned processor, SAIL, which was not operational at the time of the mission while it was awaiting necessary upgrades. Suriname's seabob shrimp obtained Marine Stewardship Council (MSC) certification for sustainable and well-managed fisheries in 2011, the first tropical fishery to obtain such certification.

Tuna are exported both fresh and frozen, either as loins or whole after removal of the head and guts. Other fish are also exported fresh or frozen. The decline in fishery stocks and worldwide shortage of fish means that species that were previously considered as by-catch are now increasingly considered to be commercially attractive. The main focus of the processing companies, which all have HACCP certification, is now to add value through retail packaging and branding, something that has not been done in the past. Processing of shrimp is mainly limited to peeling immediately after landing, followed by freezing. Further processing and packing is done in the destination market.

In 2007 imports of smoked fish from Suriname were banned by the EU because of high levels of Benzo[a]pyrene residues, which are toxic. As a result of this ban the Dutch Private Sector Investment Program supported a company to establish a modern smokehouse that complied with EU requirements. LVV's Fisheries Dept. also planned to construct smokeries in the districts of Commewijne and Nickerie. Smoked fish is popular with people from Suriname and export sales to the diaspora can yield higher prices than sales on the local market.

## Aquaculture

Aquaculture has been tried in Suriname since the 1950s but with only very limited success. There are presently three companies operating commercially compared with five that were farming a decade ago, but one of these three is close to ceasing operations. There are also only a small number of individuals involved in subsistence aquaculture, although the Fisheries Dept. of the Ministry of Agriculture has had several activities to promote it. Production was formerly of white shrimp and tilapia but companies have recently changed from tilapia to tambaqui (Black Pacu), which is a pure freshwater fish, compared with tilapia that can exist in both fresh and salt water. Fish is sold locally, mainly to hotels and restaurants and some is also exported. One company was set up in 1987 by a well-known Surinamese businessman to produce shrimps, but has apparently never made a profit and has been funded by other business interests of that person. It is thought likely to close in the near future. The lack of profitability is attributed by the owner to the inadequate size of the domestic market, market competition from Asian producers, and the costs of frequent tests of water quality for shrimps. The final straw was probably that from this year the government has ceased supporting the VKI to do the residue monitoring needed to keep the CARICOM and European export markets open for the export of shrimp from aquaculture. All standards required by the two regional markets are now aligned and the shrimp producer is particularly concerned that Surinamese standards are now lower than those of CARICOM, despite Suriname being a member of CARICOM. It also argues that regulatory requirements, such as those related to labelling, are not enforced domestically.

Other reasons for the disappointing development of the aquaculture sector have been said to include the high price and low quality of feed; high start-up costs; lack of technical knowledge; highly competitive and high-cost export markets for tilapia; export on ice of unprocessed fresh fish, which produces low returns; a lack of expertise in aquaculture; and limited government support (Roseboom 2012; Seijo 2013).

There has been a sizeable recent investment in Black Pacu production by a company that also owns a fish processing plant. It plans 13 one-hectare ponds, and ten are already in production. Certified feed is imported from Brazil. The choice of Black Pacu rather than tilapia was made because tilapia involves intensive production with antibiotic use whereas Black Pacu is reared more extensively. Also, if tilapias escape they can have considerable environmental consequences, while Black Pacu cannot breed outside of a certain environment in the Amazon. Finally, it would be extremely difficult for Suriname to compete with Asian production. The downside of this decision is that Black Pacu, despite being a very tasty

fish, is not widely known by consumers and thus initial marketing difficulties may be experienced.

While there may be some potential for investments to upgrade the efficiency of sea fishing activities and to add value, the scope to significantly increase the total catch appears extremely limited. That suggests that aquaculture is likely to present the best option for development of the sector, provided that past difficulties can be overcome. Declines in the value of the SRD also mean that imported fish feed should be cheaper. Studies have indicated that at least 30,000 hectares in the Northern Commewijne area are suitable for cultivation of fish and shrimp. Market potential appears to be good, although the competition from Asia is likely to continue to be a constraint. Suriname presently accounts for just 2.5 percent of the Netherlands crustacean market (ESP 2015). The government continues to believe in the potential of the sector and aims to develop an aquaculture research and training center. It prepared a National Aquaculture Disease Management Plan in 2013.

There may also be scope for the farming of ornamental freshwater fish, targeted at the North American market, as Suriname has a wide diversity of these (Kaplan 2015).

## Poultry and Eggs

For cultural and religious reasons, poultry is the main source of protein. It is both the most important agricultural import product (10 percent by value) and the leading livestock product produced in Suriname, accounting for around 50 percent of total livestock production and around 12 percent of the value of all agricultural production, second only to rice (LVV 2015). Estimated production of poultry meat is 9,000 tons a year, compared with imports of about 20,000 tons (Kaplan 2015). There are over 2,000 small-scale poultry backyard producers. Difficulties faced by them include the high costs of feed and the limited availability of veterinary services.

There are several fairly large broiler producers. One is an integrated broiler and fast food chain operation that is considering also developing feed production. Another is an integrated operation that began as a feed mill and is now producing broilers using its own facilities and under contract farming arrangements. The two largest slaughter and marketing companies are Sranan Fowru N.V. and Surinaamsche Pluimvee Industrie N.V. (Espee). These both rear their own broilers and contract with other farmers, including one that produces 20,000 birds a week. Sranan Fowru recently obtained Yum Brands Certification that enables it to sell to a range of fast-food chains. There has been a recent investment in duck production by a Dutch national, with a capacity of 50,000 birds, which take around 50 days to reach marketing weight. The company has experienced problems in developing an export market, which it attributes to protectionism in the target CARICOM markets.

Further investment in broiler production, together with a hatchery and a feed plant, to replace imported poultry meat has been suggested (Kaplan 2015). The problem with this is that broiler producers face particular difficulties because the bulk of the country's imports are of "leg quarters". These are not required by chicken meat processors in the USA and can thus be sold at a low price on other

markets. There are also suggestions that the people of Suriname prefer dark meat rather than white meat. While, with a 20 percent import duty and the recent devaluation, it should be possible for domestic producers to compete with the import of whole frozen birds from the USA or Brazil, it will still be impossible to compete with these cheap offcuts.

Suriname is self-sufficient in eggs at most times. There are around 200,000 layers producing over 50 million eggs a year (LVV 2015). Some breeding eggs are imported and the egg producing companies also market layer and broiler chicks. The scope for export of whole eggs is very limited, with the possible exception of some sales to neighboring French Guiana. Jamaica has been producing liquid egg for use by caterers and consumers but the company involved ran into difficulties due to a shortage of whole eggs. The high cost of production suggests that this may not be a potential export industry for Suriname but the possibility could be explored, given the trade preferences available in the Caribbean.

## Dairy

The dairy subsector involves around one thousand small-scale farmers, of which about 60 percent sell their product to Melkcentrale Paramaribo (MCP), an SOE that is required to buy all raw milk offered to it at a price fixed by the Ministries of Agriculture and of Trade and Industry, which is based on the cost of production. This raw milk is responsible for 60–70 percent of total output by MCP, while the remainder comes from processed imported milk powder. Raw and processed milk are sold blended, with the powdered milk being used, in part, to stabilize raw milk supplied by farmers. Around 10,000 ha of pasture are used for dairy production. Pastures are mostly of poor quality, resulting in low milk yields and high costs. Because of the resulting low profitability, farmers have been reluctant to adopt better technologies, but the pricing policy, which results in a higher price (SRD2.72 a liter) than in major milk producing countries, has enabled them to stay in business and reduces the incentive for productivity-enhancing investments (Derlagen 2013). Potential ways of improving productivity include better pasture management, better feed, improved breeding, use of supplementary feeds more attuned to the situation in Suriname, more efficient milk collection and improved quality control. These solutions are well recognized but there has been little activity to implement them. Recent indications are that farmers have been slaughtering some of their dairy cattle, possibly due to the impact of the El Niño drought, which reduced pasture growth and increased salinity.

MCP claims to process 80 percent of all milk marketed (raw and reconstituted) although this is not consistent with LVV data that suggests that it is much less.<sup>8</sup> Three other dairy processors produce the remainder from imported milk powder. There has been an ongoing legal dispute as to whether these are also legally obliged to buy raw milk, but they have never done so. There has been a glut of milk on world markets in recent years and world milk powder prices are low. Their raw material cost has been significantly less than that of MCP, at around SRD2.00 per liter, although the recent devaluations will have affected this. MCP suffers a number of marketing difficulties, including the poor shelf life of its milk, which it attributes to poor refrigeration in retail stores, and the higher margins that com-

peting suppliers are able to offer retailers. Its aim is to have in-store displays using refrigerators that it supplies itself.

The retail price for MCP milk (SRD4.95 a liter as of mid-2016) is also set by the government, at levels higher than international prices. This has been significantly less than the price charged by the companies reconstituting powdered milk. MCP makes no margin from milk but in most years is able to generate a small profit from the sale of yoghurts, custards, flavored milks and other products that are not price controlled. However, this profit is inadequate to fund reinvestments and the SOE is using 40 year-old equipment for milk processing. In addition to replacing this, it would also like to install a UHT plant.

## **Beef**

Beef production is relatively limited. Despite some consolidation, less than 25 out of 1000 registered cattle farms have 50 or more animals and just six farms have more than 200 cattle (Panadeiros 2014). However, the largest farm has 6000 head. Rearing of cattle is largely by grazing, with limited supplementary use of animal feed and occasional more intensive use of feed when animals are purchased for fattening prior to slaughter. Estimates are that about 2,000 tons of beef are produced annually, with a slaughter rate of around 800 animals a month. Around 10,000 ha of pasture are used for beef, which, together with dairy, makes cattle rearing the second user of agricultural land after paddy. If efficiencies were introduced, pasture management improved and the role of animal feed enhanced, increased beef production could probably be achieved without additional land being required. However, most farmers appear content to put their animals on existing pasture, make few efforts to improve that pasture and are very reluctant to use feed.

There was reportedly a surplus of beef in 2016. Export would require introduction of a disease monitoring system as well as a certified laboratory. Capacity to develop exports to the Caribbean may be constrained by the various tariff policies in other Caribbean countries, which are more advantageous for beef imports from outside the region than they are for poultry. For example, in Jamaica poultry receives protection from duties totaling 260 percent while only the common external tariff of 20 percent is applied to beef imports. As with cheap poultry cuts, the domestic market is constrained by sizeable imports from the USA of beef trimmings for use in patties and burgers.<sup>9</sup> Further, the recent establishment of a commercial beef farm in Trinidad may generate pressure for protection by that country.

## **Pork**

Pork production involves around 150 farms, with a few big producers that use state-of-the-art production techniques. The leading company, Suriname Pig Farms N.V., is vertically integrated in association with Varros N.V.; rearing pigs as well as slaughtering and processing. It has contractual arrangements with other farmers, supplying them with piglets and buying back the pigs when ready for slaughter. Suriname Pig Farms recently received support from the Dutch Private Sector Investment Program to develop an Artificial Insemination capacity. Most of the other farmers are small, using out-of-date technologies. Similar to beef, production is estimated at

2,000 tons per annum (Kaplan 2015). The country is close to being self-sufficient in pork meat, but there are still considerable imports of processed pork.

The meat processing factory, Varros N.V., began operations in 2003 as a slaughter house for pork. It now produces a range of cold cuts that are presently sold in wholesale packs to butchers rather than in retail packs, although, in response to the increase in the cost of imports, it is making ambitious new investments that are likely to see retail packaging introduced for sale through dedicated displays in supermarkets. Pork now constitutes 40 percent of its meat supply and some beef navel is imported from the USA to prepare salted beef, the local animals being considered unsuitable for this purpose. Varros also runs a chain of butchers in Suriname under a different name and is endeavoring to franchise this in Guyana. The company also hopes to export to elsewhere in the Caribbean.

## **Small Ruminants**

Goat and sheep rearing is limited. There are around 10,000 in the country. Apart from occasional sales by butchers there is almost no organized market for the meat, which is mainly consumed at parties and other events, largely for the Indian community, when the organizers are likely to buy live animals from the few farms. Coastal humidity can cause problems with parasites and expansion of production may require farms to move inland to higher locations where there is less humidity. The Ministry of Agriculture, Animal Husbandry and Fisheries has plans to increase production but any increase may not be very significant.

## **Animal and Fish Feed**

Dependence on imported feed components is one factor contributing to the inefficiency of the livestock sector, and investment in animal feed ingredient production is needed (Roseboom 2012). The recent decline in the value of the Suriname dollar has provided an added incentive for this and initial investments are beginning to be seen. Poultry (broilers and layers) account for over 90 percent of feed use (LVV 2015) but there is potential for improving cattle and dairy farming by introducing feed and not relying solely on pasture, as discussed above. Feed is made up of bulk items such as maize (corn), soybean, rice and cassava, together with nutritional supplements (concentrate). All raw materials except rice, rice bran and very small quantities of cassava are presently imported. Ministry of Agriculture statistics put raw materials used at 50,000 tons in 2014, with one half being maize and just over 5,000 tons being soybean. The maize proportion may have declined since then as a result of moves to replace maize with rice in several feed mixes. A wide range of poultry feeds are offered by the local suppliers depending on the age of the birds and whether they are layers or broilers.

There are three feed companies in Paramaribo and livestock farmers also make their own feed by mixing rice and other ingredients with imported concentrate or with feed supplied by one of the three. The three companies make use of rice and rice bran in their formulations and one company has ceased using imported maize entirely. Local production of soybean and corn would appear to be agronomically possible. Research into the potential of production has been conducted by CE-

LOS,<sup>10</sup> with positive results, although there are some people who feel that maize is unsuitable for the environment of the country. Others argue that it is not really required as it can be replaced by rice. However, a poultry producer has recently cleared 400ha with the intention of growing maize, soybean and feed rice, planning to conduct trials in 2016 on around 50ha. The initial aim is to produce feed for its own poultry. If all goes well there are plans to expand the area under production and supply the local feed companies. A pig producer also has plans to grow maize and there has reportedly been interest from Brazilian investors to grow maize and soybean on 5000ha of land in Nickerie. A rice mill owner in Nickerie hopes to grow soybean on his land in order to produce feed for the district, thus avoiding high transport costs from Paramaribo.

With domestic production of raw materials Suriname's animal feed producers are optimistic that they could develop an export business with the rest of the Caribbean. It is also noted that extraction of soy oil would be an additional possibility if domestic production of soybean were achieved. In common with other subsectors, feed producers are concerned at the lack of laboratory facilities within the country.

The main aquaculture investor imports certified feed from Brazil. A small company has recently started to produce fish meal, which can be used for both aquaculture and as poultry feed, using as raw material fish heads and guts removed prior to export of fresh fish, as well as the by-catch that cannot be sold. Production is limited by the small raw material supply and the seasonal nature of the fisheries sector but, even so, the company is presently having difficulties in developing markets. One of the problems faced is that poultry and aquaculture companies require certified feed with the GMP+ certification and this company is not able to comply. Thus its market is likely to be only small-scale aquaculture and poultry producers rather than commercial aquaculture and livestock companies seeking an international market.

## **Agro-Processing**

Agro-processing is limited and several companies producing processed foods use imported raw materials rather than those available in Suriname. In addition to cassava, dairy and meat processing and small-scale chocolate and roasted coffee production, reasonably sizeable companies using some domestic ingredients include a food sauce and jam processor, N.V. Interfood; the candied fruit producer, Suriname Candied Fruit, which aims mainly at export markets; and a fruit juice manufacturer, Carifruits. These are all certified to international standards. Other smaller companies carry out small-scale coconut oil processing, soft drink production, honey production, fish drying, and preparation of vegetables in vinegar. There are also some spice and dried herb producers. Products of most of these companies are available in supermarkets: smaller producers sell sauces and similar items in the Central Market of Paramaribo and in other local markets. In addition, a fruit and vegetable exporter has started preparing ready-to-eat fruits in small plastic containers for supply to hospitals as well as a range of pre-packaged vegetables for sale on the local market, aimed at exploiting the potential market for labor-saving products.

In general, countries with small populations find it difficult to develop viable processing industries for export that can supply other than niche markets and the

diaspora. Such niche industries are often introduced as a result of donor support and tend to lack sustainability. On domestic markets economies of scale are lacking to compete with multinational companies, unless the products are clearly formulated to meet local tastes. In many countries there is often a lack of continuity of raw material supply that would enable processors to maximize utilization of facilities. Additionally, raw material quality is unreliable.

Products sourced locally for processing for the domestic market include am-  
soi,<sup>11</sup> gherkins, hot pepper, ginger, mope, passionfruit, pineapple and a range of other local fruits, including podosiri (acai). Processors report that they have to compete with the domestic market for supply and, in most cases, have yet to organize reliable value chains. Tomato sauce for ketchup manufacture is all imported as local tomato varieties are unsuitable for ketchup. A supplier of peanut butter who uses imported peanuts did investigate the possibility of using local raw materials. However, the risk of aflatoxin in peanuts means that they have to be tested prior to use. Testing the small quantities supplied by individual farmers would not have been cost-effective. The alternative, of grouping farmers into a cooperative that would have dried all of the peanuts presented too many difficulties. Another company processing gherkins is able to buy some of its raw material locally, but in insufficient quantities to meet all of its demand. The high labor input for the vegetable is given as the main reason for non-availability locally.

Processed product exports using domestic raw materials are very limited. A couple of small companies export frozen vegetables. Varros, discussed earlier as a pork processor, also does processing of poultry meat and beef. Carifruits has recently been assisted by the Dutch Private Sector Investment Program to install pasteurizing equipment that will lengthen the storage and shelf life of products and permit them to be stored without cooling. A first shipment of tropical juices to Trinidad was scheduled for June, 2016. Suriname Candied Fruits is a new venture designed initially to produce succade, the candied peel of citron. The company was assisted by the Dutch Government to scale up production on its own farm and by outgrowers. Its farm is GlobalGAP certified and it is presently working to certify 52 outgrowers. Once farmers are certified the company guarantees to take all the fruit they produce. Finally, as noted earlier, SwissSur produces processed acerola products for export.

## Other Potential Areas for Investment

In addition to potential direct investments in crops, livestock and fisheries, as well as in processing and feed, there may be scope for investments in a range of other products and support services, including:

**Agro-tourism.** Suriname presents considerable opportunities for eco-tourism, given its vast areas of untarnished rain forest. This potential is only now beginning to be exploited. There also seem to be related possibilities for agro-tourism, where tourists could visit and/or stay at farms. For instance, the major new citrus farm is being developed in association with an environmental and cultural resort while development of a coffee plantation is related in part to a plan to show tourists the country's colonial heritage.

**Herbs and spices.** Some potential investors have identified the possibility of supplying the large Indian community in Canada with Indian culinary herbs and spices, which could be supplied by air freight through New York. However, it is understood that there have been no developments to date.

**Hemp.** The possibility of cultivation of industrial hemp was suggested to the mission. As it is a variety of cannabis, the legality of industrial hemp varies depending on the country. It has lower concentrations of psychoactive substances than marijuana and its importation is usually permitted, although strict testing procedures are likely to be required. Hemp finds applications in a wide range of industrial products. However, according to the USDA, hemp markets are, and will likely remain, small, thin markets and there is a potential for oversupply.

**Plantation timber.** Suriname has vast forest resources, which the country is endeavoring to manage in a sustainable fashion through use of natural regeneration. It is seeking further donor support for Sustainable Forest Management work. Given the country's forest resources little attention has been paid to the possibility of promoting plantation timber, apart from a few trials that were unsuccessful, apparently because of the acidity of the soil at the location used. Nevertheless, there is a growing interest in plantation forestry amongst investors worldwide and plantation teak can grow to maturity within five years, thus providing a reasonably rapid return on investment. Care would need to be taken that plantation developments were not used to disguise illegal logging, however.

**Flowers.** At one time flowers were thought to represent a small, though promising, opportunity for both domestic and export markets but developments have not materialized, despite the country's agro-climatic advantages. A Belgian-funded project trained 14 growers to grow flowers for export but only two are now doing so, apparently because of the high cost of air freight. Indigenous Suriname varieties are sold at the Dutch flower auctions in Aalsmeer. Difficulties encountered include the existence of nematodes in Suriname's soils. As a consequence, black earth has to be imported and is sold by input stores or nurseries (Visser, 2016). Most of the flowers sold in Paramaribo are imported from the Netherlands. Local flower sellers include a row of shops near the main hotel area. Wholesale sales are also made to the hotels. Roses are both grown locally and imported but the local ones are inferior. There may be additional scope for growing both tropical and other flowers for export although it should be noted that most flowers, such as roses, grown in the tropics for sale to Europe are grown at altitude (Ethiopia, Kenya, Uganda, etc.).

**Input supplies.** Several recent reports on the agricultural sector comment on the absence of reliable input supplies in Suriname. However, little evidence was found for this during the mission. There are fairly sizeable input importing companies who act as both retailers in Paramaribo and as wholesalers supplying retailers in other districts. These mainly handle a range of generic products, while one new entrant concentrates on selling branded products from European and USA manufacturers. Concern has been expressed about the quality of some of the agro-chemicals imported into the country, but there are presently no suitable testing

facilities to address this concern. In 2015, Suriname reached an agreement with the Government of Venezuela to swap rice for urea fertilizer. The urea is marketed under the brand of a leading rice miller.

Farmers often use retained seeds, sowing them in a seed bed and selecting the best seedlings for replanting. Such home production of seed can lead to cross-fertilization. On the other hand, imported seeds have not undergone serious screening to identify varieties most suitable for cultivation under Suriname's conditions (Visser, 2016).

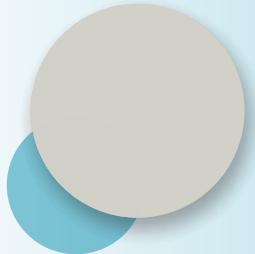
**Veterinary services.** There is a shortage of both veterinarians and veterinary supplies, which are limited to basic chemicals to treat animals for screw worm, ticks and similar problems. The Ministry of Agriculture, Animal Husbandry and Fisheries employs some veterinarians and there are also a few vets who mainly treat pets in Paramaribo. Upgrading of the livestock sector is likely to require improved access to veterinary support.

**Mechanization services.** The rice sector makes heavy use of mechanization. Indeed, one of the leading organizations in the sector after the Second World War was known as the "Foundation for the Development of Mechanized Agriculture in Suriname" (SML) (Central Bank of Suriname, 2014). Large farms use their own combines and employ aerial seeding and spraying. However, there has been a tendency by small-scale farmers to overinvest in agricultural machinery for rice. This is attributed by (Panadeiros, 2014) to the lack of willingness of farmers to collaborate, leading to all of them buying equipment that is then underemployed. There may, therefore be scope for the development of equipment rental services. For other commodities, the relatively high cost of labor and the apparent reluctance of people in Suriname to undertake full-time farm work suggests that agricultural production that can be mechanized is more likely to be successful than that depending on high labor inputs. Cassava is one crop for which mechanization solutions are being actively sought.

## Notes

- 1 <http://suriname-rice.com/>
- 2 <http://suriname-rice.com/nationalriceconference/>
- 3 About 4.45 tonnes per hectare in 2014 (14 percent moisture) compared with 4.2 in 2009, according to Ministry of Agriculture statistics.
- 4 See [https://ec.europa.eu/europeaid/sites/devco/files/aap-financing-suriname-af1-20121218\\_en.pdf](https://ec.europa.eu/europeaid/sites/devco/files/aap-financing-suriname-af1-20121218_en.pdf)
- 5 See <https://www.cbi.eu/market-information/fresh-fruit-vegetables/trends/>
- 6 <http://www.rspo.org/consumers/about-sustainable-palm-oil>
- 7 <http://www.tanbun.org/index.htm>
- 8 Based on milk powder import statistics, total production of reconstituted milk by private companies should be around 10 million liters per annum. This would put MCP's share at about 40 percent of the total market (author's calculations based on LVV statistics).
- 9 <http://agritrade.cta.int/en/layout/set/print/Agriculture/Commodities/Beef/High-beef-prices-are-stimulating-a-rethink-of-Caribbean-beef-tariff-policies>
- 10 [http://www.celos.sr.org/projects/ongoing\\_projg.asp](http://www.celos.sr.org/projects/ongoing_projg.asp)
- 11 Best described as a cross between Chinese cabbage and endive.





## **Appendix D**

### **Detailed Agriculture Subsector Evaluations**

This appendix presents the detailed subsector evaluation scores across the criteria presented in Table 2.2 in Chapter 2. These scores informed the relative prioritization of subsectors as presented in Figure 2.3. The subsector scores are presented in the following order:

- 1 Aquaculture
- 2 Bananas
- 3 Beef
- 4 Cassava
- 5 Cereals/animal feed
- 6 Cocoa
- 7 Coconut
- 8 Dairy
- 9 Fish and shrimp
- 10 Fruits
- 11 Oil palm
- 12 Pork
- 13 Poultry
- 14 Rice
- 15 Vegetables

## 1. AQUACULTURE

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	3	Worldwide decline in sea fish availability suggests strong potential demand for aquaculture products. Reduced catches in Suriname's waters likely to have negative impact on balance of trade without matching aquaculture development. However, production cost constraints may limit potential balance of trade impact.
Direct and indirect jobs	3	Additional jobs in fish and shrimp farming likely to be limited but aquaculture could protect existing jobs in fish processing
Higher value jobs	3	As above, could protect existing management jobs rather than generate significant new ones
Average for Criterion 1:	3.00	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	4	Strong demand for aquaculture products worldwide. Probable inability to compete with Asian producers suggests need for product differentiation by selecting products not widely produced elsewhere
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	2	Discussions with investors identified some interest in expansion in the sector, while others were closing aquaculture operations.
Does Suriname offer a conducive business environment for this activity?	3	Land and other constraints do not appear to be major. High cost of finance is major difficulty, which could be addressed by outside investment. Access to certified feed input through the domestic market is constrained by import dependence.
Average for Criterion 2:	3.00	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	4	Very limited existing investments given the potential
Improvements to overall value chain performance	4	Could significantly address throughput difficulties likely to be experienced by the fish processing industry in future

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**1. AQUACULTURE** (continued)

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
Greater inclusiveness leading to improved farmer incomes	2	Small-scale production unsuitable where certification is required for export
Average for Criterion 3:	3.33	
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	4	Aquaculture ventures do not need to invest in processing facilities as these already exist. Established processors likely to entertain joint ventures
Does Suriname have the people, skills, and supporting services to compete in this subsector?	2	Existing skills are available in the processing sector. Some additional skills required for aquaculture are not available. Availability of certified feed import supply services are limited.
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	4	Adequate land and water resources are available.
Average for Criterion 4:	3.33	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?	<b>Score (5 = low risk; 1 = high risk)</b>	
Are there market risks?	2	Market risks come from (1) trying to compete with Asian tilapia, (2) lack of market acceptance of fish developed as alternative to tilapia (3) differentiating local fish from tilapia which has bad reputation due to use of antibiotics, etc.
Are there risks from climate change?	3	Fish presently being bred are Amazon fish so temperature increases unlikely to have impact.
Are there phytosanitary and other safety and quality risks?	3	Diseases are always a potential problem for aquaculture.
Are there political and other risks, such as related to land availability	3	Existing investors have not encountered problems but new investors may find it difficult to obtain land.
What are the risks that barriers to growth in this subsector will be difficult to remove?	2	Estimate of time, resources, or willingness required to remove major barriers especially input supply as well as skills would be significant.
Average for Criterion 5:	2.60	
<b>Total score:</b>	<b>15.27</b>	
<b>Average score for all five criteria:</b>	<b>3.05</b>	

## 2. BANANAS

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	3	Significant growth of the sector appears unlikely. Loss of preferences in EU may be compensated by additional sales to CARICOM, by development of Mini Bananas and by value addition such as pulp production for export
Direct and indirect jobs	2	Some additional jobs possible if production is increased. Note that many of the existing employees are not from Suriname
Higher value jobs	2	Existing banana company unlikely to require many additional high-paying jobs. New investor in banana sector unlikely
Average for Criterion 1:	2.33	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	2	Demand constrained by loss of EU preferences. Prices poor as a result of practice of EU supermarkets to use bananas as "loss leaders"
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	2	Further significant investments by existing investor in banana sector likely to be limited. Subsector unlikely to be attractive to new investors
Does Suriname offer a conducive business environment for this activity?	3	Existing investor reports few constraints with exception of import clearance delays and increasing housing construction on agricultural land on perimeter of plantation in Jarikaba
Average for Criterion 2:	2.33	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	2	New investment unlikely other than by existing investor
Improvements to overall value chain performance	2	Some value addition may be possible
Greater inclusiveness leading to improved farmer incomes	1	Plantation crop that does not involve small farmers
Average for Criterion 3:	1.66	

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## 2. BANANAS (continued)

Criteria and evaluation factors	<b>Score</b> (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	4	Infrastructure already in existence
Does Suriname have the people, skills, and supporting services to compete in this subsector?	3	Suriname's supply of key skills and supporting services appears adequate on basis of existing operations although many plantation workers are from outside the country
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	4	Existing land resources suitable for banana production
Average for Criterion 4:	3.66	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?		
(5 = low risk; 1 = high risk)		
Are there market risks?	3	Full impact of EU banana tariff reductions on non-ACP producers is uncertain
Are there risks from climate change?	3	In long term climate change could increase areas suitable for banana production, increasing competition. Some increase in diseases is possible.
Are there phytosanitary and other safety and quality risks?	2	Existing production suffering from "Moko" disease. High incidence of other diseases in commercial banana production
Are there political and other risks, such as related to land availability	4	None foreseen
What are the risks that barriers to growth in this subsector will be difficult to remove?	4	Start-up costs nonexistent as banana plantations already established
Average for Criterion 5:	3.20	
<b>Total score:</b>	<b>13.20</b>	
<b>Average score for all five criteria:</b>	<b>2.60</b>	

### 3. BEEF

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	3	Some possibility for exports to the CARICOM area but may encounter NTBs and limited protection against extra-CARICOM imports.
Direct and indirect jobs	2	Requires limited agricultural labor
Higher value jobs	2	Only a few management jobs may be generated
Average for Criterion 1:	2.33	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	3	Domestic market appears largely satisfied. Recent declines in SRD may make beef more competitive against other protein sources that require imported feed
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	2	External investor interest unknown. Little apparent domestic interest in expanding production
Does Suriname offer a conducive business environment for this activity?	2	Main constraint appears to be (1) possible lack of suitability of cattle breed farmed in Suriname for other markets; (2) present lack of animal health systems and laboratory facilities
Average for Criterion 2:	2.33	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	3	The existing beef sector is not very dynamic, relying on cattle grazing on largely unimproved pasture and very limited use of feed
Improvements to overall value chain performance	4	A large commercial investor with access to export markets could have significant impact on value chain performance
Greater inclusiveness leading to improved farmer incomes	3	This would require a willingness of small, part-time farmers to pursue more commercial practices and carry out steps necessary to achieve certification
Average for Criterion 3:	3.33	

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**3. BEEF** (continued)

Criteria and evaluation factors	<b>Score</b> (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	4	Additional slaughterhouse capacity would be needed but this should not present problems
Does Suriname have the people, skills, and supporting services to compete in this subsector?	3	Knowledge of beef sector is fairly limited
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	3	Land and climate seem to be very suitable. However, for a large-scale operation to achieve greater efficiency and minimize use of land, supplementary feed should be used and pasture improvement is necessary.
Average for Criterion 4:	3.33	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?	<b>Score</b> (5 = low risk; 1= high risk)	
Are there market risks?	3	Potential market would be limited to the Caribbean. NTBs and competition from USA imports present potential risks
Are there risks from climate change?	3	Limited research into impact of climate change on cattle. On other hand, the impact of cattle on climate change is well-known although any new investment in Suriname would have only a minor impact on world totals
Are there phytosanitary and other safety and quality risks?	2	Health risks are not addressed by government services. There is no health monitoring system and few veterinarians.
Are there political and other risks, such as related to land availability	4	None foreseen
What are the risks that barriers to growth in this subsector will be difficult to remove?	2	Slow pace of improving laboratory and other health and safety facilities suggests potential difficulties could be encountered.
Average for Criterion 5:	2.80	
<b>Total score:</b>	<b>14.12</b>	
<b>Average score for all five criteria:</b>	<b>2.82</b>	

#### 4. CASSAVA

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	2	There is some indication of demand for cassava flour in Barbados and growing global demand for gluten free products that Suriname could meet through exports. Suriname has a government-funded factory for cassava flour production that could help meet this demand. These market demands have not been confirmed and actual generation of exports to improve balance of trade may be limited.
Direct and indirect jobs	3	Heavy mechanization of factory likely to reduce job opportunities
Higher value jobs	2	No new high value jobs beyond those already employed unless gluten-free products are developed
Average for Criterion 1:	2.33	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	3	There is some growing demand for gluten-free products and other cassava products.
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	3	No evidence of national investors. International investors may be interested in potential source of supply from a country with an abundance of land
Does Suriname offer a conducive business environment for this activity?	3	Over 500 farmers have been trained in requirements of the factory. Production is spread over the country to avoid disease problems. However, farmers may have become disenchanted following recent failures to buy from them. The company is a Limited Liability company owned 100% by the government and clarification of government's approach to selling such companies needs to be obtained.
Average for Criterion 2:	3.00	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	3	The company appears to have demonstrated the ability to obtain supply from a large number of farmers
Improvements to overall value chain performance	4	Linkages with farmers involving provision of technical assistance, harvesting scheduling and, eventually, provision of planting material to provide consistent raw material could bring about significant value chain improvements.
Greater inclusiveness leading to improved farmer incomes	4	Number of farmers trained and certified as approved suppliers indicative of good inclusion as long as company can meet purchase commitments
Average for Criterion 3:	3.66	
<b>4. Underlying assets for competitiveness in the subsector</b>		

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**4. CASSAVA** (continued)

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	3	Existing factory provides necessary infrastructure but additional investment likely to be required. Wide dispersion of farmers may cause some logistics and cost problems
Does Suriname have the people, skills, and supporting services to compete in this subsector?	3	Food technology skills are relatively lacking in Suriname and these are likely to be required for product development
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	4	Yields in Year One were very high. Subject to use of nitrogen-fixing rotation crops, for which the factory should identify markets, yields should be maintained
Average for Criterion 4:	3.33	
<b>5. Private investment risks</b>	<b>Score</b> <b>(5 = low risk; 1 = high risk)</b>	
Are there significant risks that an investor would face in Suriname for this subsector?		
Are there market risks?	3	Market for gluten-free products at a price at which Suriname could compete does not yet appear to have been assessed. Sales in Barbados of flour may be subject to some risks
Are there risks from climate change?	3	No significant risks foreseen in short term but rising sea levels could present long-term problems
Are there phytosanitary and other safety and quality risks?	3	Does not appear to have been a factor to date. However, limited government capacity to support exporters in the area of food safety is a concern. Supply sourced from a large number of farmers minimizes disease risks
Are there political and other risks, such as related to land availability	2	Supply sourced from a large number of farmers minimizes land risks. However, existing planting practices impose a heavy workload and the viability of mechanization of planting yet to be assessed. The factory's production line is presently not functioning which means it is unable to purchase from farmers (June 2016) potentially jeopardizing the relationship. The company also seems to experience cash-flow problems and be still dependent on government funding. The political willingness to sell the factory is a risk for potential investors
What are the risks that barriers to growth in this subsector will be difficult to remove?	3	Despite positive achievements there do appear to be a number of uncertainties at present. It should be possible to address these with external investment.
Average for Criterion 5:	2.8	
<b>Total score:</b>	<b>15.13</b>	
<b>Average score for all five criteria:</b>	<b>3.03</b>	

## 5. CEREALS/ANIMAL FEED

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	3	The local production of cereals for animal feed ingredients could replace an estimated 25,000 tons of feed imports at present feed usage rates. In addition, there is a general appreciation that use of animal feed needs to be increased in the country, which could provide additional domestic markets. Further impact on the balance of trade may be limited.
Direct and indirect jobs	3	Farming jobs would be generated although the number would be limited as the operations would be heavily mechanized.
Higher value jobs	3	A few farm-management positions would be generated
Average for Criterion 1:	3.00	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	2	The decline in the value of the Surinamese currency has significantly increased the cost of imported feed and made domestic production of raw materials more viable. At the same time, the import quantity is relatively stable and demand growth beyond the initial import substitution may be limited.
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	3	Existing Surinamese firms have made investments and express interest in further investment, such as a national poultry company that has obtained 400ha of land for maize, feed rice, and soybean production to support an integrated poultry and feed chain. A Brazilian investor has examined production on 6,000ha. Other companies are considering smaller-scale production.
Does Suriname offer a conducive business environment for this activity?	4	The feed sector is entirely private sector. However, expansion of the industry into raw material production may be constrained by regulatory and other problems, although suitable land has been identified
Average for Criterion 2:	3.00	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	3	Raw materials produced in the country for the animal feed sector have until recently been limited to small quantities of rice and bran and very small quantities of fish meal. However, one feed company has recently entirely replaced maize in its formulations with rice. If this is copied by others local production of major feed ingredients could then be limited to soya and production of corn would not be needed.

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## 5. CEREALS/ANIMAL FEED (continued)

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
Improvements to overall value chain performance	4	Potential to address constraints faced by feed companies as a result of supply delays for imported products, which have a knock-on effect for the poultry and livestock sectors
Greater inclusiveness leading to improved farmer incomes	2	Negligible unless production was on a contract farming basis, but this may limit economies of scale from mechanization
Average for Criterion 3:	3.00	
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	4	Initial pilot operation seems to have been developed with few infrastructural constraints
Does Suriname have the people, skills, and supporting services to compete in this subsector?	3	Research agencies in the country have studied feed production but lack of local knowledge of producing some of the crops involved could present difficulties.
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	3	The suitability of the coastal areas of Suriname for soybean production still requires to be verified. Some people question suitability of environment for maize suggesting need for trials before heavy investments are made
Average for Criterion 4:	3.33	
<b>5. Private investment risks</b>	<b>Score</b> <b>(5 = low risk; 1 = high risk)</b>	
Are there significant risks that an investor would face in Suriname for this subsector?		
Are there market risks?	3	Significant increases in the prices of exported minerals and exploitation of new minerals could lead to a recovery in the Surinamese currency, making imported feed ingredients more attractive again
Are there risks from climate change?	3	Minimal experience in such an agro-environmental zone with the crops involved makes this difficult to assess but climate change impact likely
Are there phytosanitary and other safety and quality risks?	3	None foreseen. However, both soybean and maize are subject to a wide range of diseases
Are there political and other risks, such as related to land availability	4	Proposed new investments do not appear to be encountering land difficulties
What are the risks that barriers to growth in this subsector will be difficult to remove?	3	The initial investor is confident that additional land would be available. Expansion of an existing venture likely to encounter less barriers than starting a new one
Average for Criterion 5:	3.20	
<b>Total score:</b>	<b>15.53</b>	
<b>Average score for all five criteria:</b>	<b>3.11</b>	

## 6. COCOA

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	4	Could result in significant exports with a positive impact on the balance of trade
Direct and indirect jobs	3	Cocoa production is fairly labor intensive at around one person year per three hectares
Higher value jobs	2	Opportunities for higher-value jobs seem limited
Average for Criterion 1:	3.0	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	5	There is considerable concern in the world cocoa sector about where future supply will come from and all indications are that prices will continue to rise
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	3	A company is presently in negotiation with the government regarding investment in a cocoa plantation, although its expertise in cocoa is unclear. World cocoa traders are willing to sign offtake agreements with Surinamese suppliers but may be reluctant to develop plantations themselves.
Does Suriname offer a conducive business environment for this activity?	3	Former SOE land has been earmarked for possible cocoa development. Investments may be constrained by delays in finalizing arrangements
Average for Criterion 2:	3.67	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	5	Existing production is on a very small scale and is of "Fine Flavor" cocoa which can find a niche market but cannot be used for large-scale development
Improvements to overall value chain performance	2	This would be a new development
Greater inclusiveness leading to improved farmer incomes	3	Incorporation of a contract farming element, as proposed at present, would promote inclusiveness. The uncertainty is whether the existing land holders would be able to provide the amount of labor required for successful cultivation
Average for Criterion 3:	3.33	
<b>4. Underlying assets for competitiveness in the subsector</b>		

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## 6. COCOA (continued)

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	4	Plantation and contract farming development would not appear to require significant infrastructural development. The infrastructure required would depend on the location of the land allocated for the cultivation
Does Suriname have the people, skills, and supporting services to compete in this subsector?	1	The work would be relatively unskilled. However, the availability of an adequate workforce for plantation-type work is open to doubt, and the vast majority of global production is done by smallholder outgrowers, which are not currently producing significant amounts of cocoa in Suriname at the moment.
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	3	Environment would appear very suitable for cocoa production, but existing production structures are not in line with global norms.
Average for Criterion 4:	2.67	
<b>5. Private investment risks</b>	<b>Score (5 = low risk; 1 = high risk)</b>	
Are there significant risks that an investor would face in Suriname for this subsector?		
Are there market risks?	4	World demand for cocoa and declining production suggests risks are minimal
Are there risks from climate change?	1	The negative impact of climate change on cocoa has already been reported in West Africa and Indonesia. Shade trees can reduce the drought risk but add to production costs. Excessive rainfall can lead to flooding, particularly given the poor quality of land drainage in Suriname. Plantation cultivation maximizes risks from excessive rainfall, which can be localized
Are there phytosanitary and other safety and quality risks?	2	Cocoa plant diseases have been reported on previous plantation ventures, although these used a different variety from that likely to be used. Plantation cultivation maximizes the risk of disease.
Are there political and other risks, such as related to land availability	2	Risks include lack of political approval of a privatization of SOE farm(s), despite the fact that this is stated government policy and the fact that ownership of some SOE land remains disputed
What are the risks that barriers to growth in this subsector will be difficult to remove?	1	A combination of uncertainty about land availability, labor availability and government policy suggests that addressing all barriers to growth may prove difficult. In addition, significant time would be required to develop significant outgrower production.
Average for Criterion 5:	2.00	
<b>Total score:</b>	<b>14.67</b>	
<b>Average score for all five criteria:</b>	<b>2.93</b>	

## 7. COCONUT

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	3	Recent replantings of palms have reportedly doubled the area under coconut, thus providing potential raw materials. However, existing plantings still remain very limited and do not appear to be sufficient to have a significant impact on the balance of trade
Direct and indirect jobs	2	Coconut harvesting is fairly labor intensive, although efforts have been made to develop harvesting equipment for dwarf varieties. Splitting of the nuts and, for oil production, processing of the meat is also labor intensive. Given high labor costs and shortage of farm workers plantation development of coconuts seems unlikely
Higher value jobs	3	Opportunities for higher-value jobs may be available in food technology sector
Average for Criterion 1:	2.66	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	4	There has recently been significant world market growth in coconut products such as virgin coconut oil and coconut water. Offsetting this for Suriname is that these products are attracting considerable interest from many coconut-producing countries, including some in the Caribbean.
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	3	There are presently two small investors in virgin coconut oil and no known investors in coconut water. Most investments worldwide in such products have been based on exploitation or pre-existing stands of palms and viability of greenfield site development is unclear
Does Suriname offer a conducive business environment for this activity?	4	No significant constraints envisaged.
Average for Criterion 2:	3.66	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	3	New investment in coconut water most likely to be done by existing fruit processors.
Improvements to overall value chain performance	3	Coconut water would be a new development. Investment in coconut oil could help to improve chain opportunities, give existing limited market outlets.
Greater inclusiveness leading to improved farmer incomes	3	Most farmers have some palms on their land but sale of coconuts from these would usually have an insignificant impact on family income
Average for Criterion 3:	3.00	

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## 7. COCONUT (continued)

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	3	Infrastructure for smallholder development appears adequate
Does Suriname have the people, skills, and supporting services to compete in this subsector?	2	The work would be relatively unskilled. However, the availability of an adequate workforce for plantation-type work is open to considerable doubt
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	4	Environment would appear very suitable for coconut production
Average for Criterion 4:	3.00	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?	Score (5 = low risk; 1 = high risk)	
Are there market risks?	3	Considerable worldwide investment in coconut products at present including in countries with lower production costs and greater labor availability than Suriname
Are there risks from climate change?	3	In neighboring Guyana climate change is given as a reason for higher yields. Offsetting that, there is reportedly a higher incidence of pests
Are there phytosanitary and other safety and quality risks?	3	Diseases including lethal yellowing diseases and "hartrot" can easily be brought into the country and import of fresh coconuts is prohibited.
Are there political and other risks, such as related to land availability	3	Limited risks envisaged
What are the risks that barriers to growth in this subsector will be difficult to remove?	2	Main risk seems to relate to the high labor input required
Average for Criterion 5:	2.80	
<b>Total score:</b>	<b>15.12</b>	
<b>Average score for all five criteria:</b>	<b>3.02</b>	

## 8. DAIRY

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	3	Investment, combined with the higher costs of powdered milk as a result of devaluation could lead to a significant reduction in powdered milk imports, although the world glut of powdered milk would remain a concern
Direct and indirect jobs	3	Increased employment in milk processing offset by fewer jobs in the powdered milk reconstitution sector but additional employment on dairy farms is possible
Higher value jobs	2	No significant impact likely
Average for Criterion 1:	2.66	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	3	Demand for fresh milk can be expected to rise if quality problems can be addressed
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	3	International dairy companies, including from the Netherlands (FrieslandCampina), are interested in expanding their activities. However, much of this interest may be related to developing markets for surplus milk powder
Does Suriname offer a conducive business environment for this activity?	2	Investment would almost certainly require taking over the operations of the existing SOE, which may present legal and bureaucratic difficulties. Difficulties may also be associated with implementing a price rise that would be required to support commercial operations
Average for Criterion 2:	2.66	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	4	The existing SOE lacks funds for necessary investment
Improvements to overall value chain performance	3	The investment would need to be accompanied by considerable technical support to upgrade dairy production on the farm, but could have significant impact. An external investor could also bring additional expertise in dairy product production and marketing and may be better equipped to develop CARICOM markets
Greater inclusiveness leading to improved farmer incomes	3	Increased demand for fresh milk would benefit approximately 600 farmers but they would have to adopt more efficient farming practices.
Average for Criterion 3:	3.33	

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**8. DAIRY** (continued)

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	4	Improving quality of milk requires improved collection facilities in the producing areas. These represent a relatively small investment
Does Suriname have the people, skills, and supporting services to compete in this subsector?	4	The sector already exists and the skills and services are largely available
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	3	Land is not a constraint. While tropical climates are not ideal for dairy production it has been shown to be viable with appropriate management
Average for Criterion 4:	3.66	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?		
Are there market risks?	2	Under CARICOM rules, the lack of powdered milk production in the region means that it can be imported at low duty from elsewhere. Investments will depend on developing high-quality products to compete with powder
Are there risks from climate change?	3	Temperature increases may cause additional heat stress in dairy cattle. Longer and more intense dry spells could affect pasture growth
Are there phytosanitary and other safety and quality risks?	3	These may be encountered if the investment aimed for export sales. New investments would have to address quality problems with existing supplies
Are there political and other risks, such as related to land availability	3	Land risks are relatively small as most production is by small farmers. Political delays in approving the investment could offset potential viability
What are the risks that barriers to growth in this subsector will be difficult to remove?	3	The major risk relates to political approval of a privatization of an SOE, despite the fact that this is stated government policy.
Average for Criterion 5:	2.8	
<b>Total score for all five criteria</b>	<b>15.13</b>	
<b>Average score for all five criteria:</b>	<b>3.03</b>	

## 9. FISH AND SHRIMP

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	3	Very little scope to increase trade. Some opportunity to increase value addition. This can be done by existing companies but some may seek external investment
Direct and indirect jobs	2	Large number of existing companies. New investment constrained by lack of fishing licenses thus job creation unlikely except through value adding activities
Higher value jobs	1	Very limited. Large number of existing companies suggests possible consolidation and reduction in high-value jobs
Average for Criterion 1:	2.00	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	4	Increased prices on world markets likely to continue as a result of catch limitations
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	3	External investors may be interested in taking over existing operations to provide integrated vessel-to-consumer operations
Does Suriname offer a conducive business environment for this activity?	4	Sector appears well regulated in order to comply with international market regulations
Average for Criterion 2:	3.66	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	3	Some limited scope for value addition
Improvements to overall value chain performance	3	Could provide new technological skills for value addition purposes
Greater inclusiveness leading to improved fisher incomes	1	Number of vessels is declining
Average for Criterion 3:	2.33	

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## 9. FISH AND SHRIMP (continued)

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	3	Existing fishing port infrastructure requiring some upgrading, for which resources appear limited
Does Suriname have the people, skills, and supporting services to compete in this subsector?	2	Sector already a major employer and most skills appear to be available
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	2	Large EEZ and some tuna also brought in from outside the EEZ. However, fish stocks likely to be declining and limitations placed on fish and shrimp licenses
Average for Criterion 4:	2.33	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?	<b>Score (5 = low risk; 1 = high risk)</b>	
Are there market risks?	4	None foreseen. Strong demand for products in increasing short supply
Are there risks from climate change?	3	Changes in sea temperature and other factors can reduce fish and shrimp availability and lead to tuna migration
Are there phytosanitary and other safety and quality risks?	4	Good monitoring system for MSC and factory health standards reduces risk
Are there political and other risks, such as related to land availability	2	No significant political risks envisaged. Major risk is the possibility that catches could be further limited due to overfishing of existing resources
What are the risks that barriers to growth in this subsector will be difficult to remove?	3	Considerable attention will need to be paid to controlling fishing licenses and other approvals so that overfishing does not take place
Average for Criterion 5:	3.2	
<b>Total score:</b>	<b>13.53</b>	
<b>Average score for all five criteria:</b>	<b>2.71</b>	

## 10. FRUITS

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	4	Taking advantage of the land available in Suriname there seems considerable potential for export revenue-generating investments.
Direct and indirect jobs	3	Investments in fruit tree planting would only be viable under mechanization, limiting the number of jobs created
Higher value jobs	3	Management jobs would be fairly limited
Average for Criterion 1:	3.33	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	4	Existing investors are confident of market potential in Europe and the Caribbean for fresh fruit, particularly citrus, while there seems scope for passion fruit, acai and other crops for domestic processing and for export
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	4	One large-scale investment is in process and there are two or three smaller investments planned
Does Suriname offer a conducive business environment for this activity?	4	Land does not appear a constraint to existing investors. One SOE has been doing some planting but on a small scale and is unlikely to compete with private sector investments
Average for Criterion 2:	4.00	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	4	Probable need to juice part of the fruit produced could provide incentive for new investments by existing processors
Improvements to overall value chain performance	3	Investments should address existing lack of cold chain and other essential export infrastructure
Greater inclusiveness leading to improved farmer incomes	3	Unlikely to be too inclusive as most but not all new investments being done on fairly sizeable scale without including small farmers. Attempts by agro-processors to involve small farmers have encountered difficulties, particularly given their inability to meet certification requirements
Average for Criterion 3:	3.33	

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**10. FRUITS (continued)**

Criteria and evaluation factors	<b>Score</b> (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	4	Fruit exports likely to be by sea freight, which does not present significant problems
Does Suriname have the people, skills, and supporting services to compete in this subsector?	2	Lack of laboratory infrastructure is a major constraint to exporters
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	4	Land and climate seem very suitable as long as soil types match requirements of the fruits grown
Average for Criterion 4:	3.33	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?		
Are there market risks?	3	Main competitor is likely to be Brazil. Competition provided will depend to a great extent on respective exchange rates
Are there risks from climate change?	3	No significant risk identified but climate change likely to lead to increase in pests and diseases
Are there phytosanitary and other safety and quality risks?	3	Strict standards in export markets require rigorous standards to be applied by producers
Are there political and other risks, such as related to land availability	3	Existing investors appear to have adequate land available. Poor availability of planting material locally necessitates purchase from Brazil
What are the risks that barriers to growth in this subsector will be difficult to remove?	3	Main constraint is lack of local planting material but this can be addressed by imports in most cases.
Average for Criterion 5:	3.00	
<b>Total score:</b>	<b>17.00</b>	
<b>Average score for all five criteria:</b>	<b>3.40</b>	

## 11. OIL PALM

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	4	Large-scale palm oil developments could have a major impact on the country's balance of trade
Direct and indirect jobs	3	Land preparation, planting, maintenance and factory operations would require significant employment as mechanization of harvesting has proven difficult to develop. At least one investor has indicated the wish to import labor which is not easily available in Suriname.
Higher value jobs	3	Opportunities for well-paying jobs in management of production and processing activities would be considerable unless investors wish to bring in expatriate management
Average for Criterion 1:	3.33	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	3	After a four-year fall, world market prices have recently started to climb again. However, they are still approximately one half of peak levels in 2010.
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	4	Interest has been attracted from Chinese, Indian and Malaysian investors but final agreement with the government does not appear to have been reached
Does Suriname offer a conducive business environment for this activity?	3	Delays in reaching agreement on the terms of an investment can seriously jeopardize its viability
Average for Criterion 2:	3.33	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	4	An investment could provide significant added value
Improvements to overall value chain performance	3	Previous oil palm production has ceased and plantations do not appear to be suitable for rehabilitation.
Greater inclusiveness leading to improved farmer incomes	2	This would depend on whether a sole plantation model was followed or whether a nucleus estate contract farming model was used. Existing proposals appear to be for plantations only
Average for Criterion 3:	3.00	

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## 11. OIL PALM (continued)

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	3	Some proposed areas would require considerable road construction to be viable
Does Suriname have the people, skills, and supporting services to compete in this subsector?	3	The availability of adequate labor and of suitable skills may present problems for the large investments required for viable operations and labor may have to be imported.
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	3	Land and climate appear to be suitable. However, land proposed by government would involve large areas of natural forest being cleared, which is likely to encounter heavy opposition both in Suriname and overseas and would mean that the oil could not be certified as Certified Sustainable Palm Oil.
Average for Criterion 4:	3.00	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?	<b>Score (5 = low risk; 1 = high risk)</b>	
Are there market risks?	3	There is strong demand for palm oil. The main market risk relates to reaction to clearance of "primary forests or areas which contain significant concentrations of biodiversity (e.g. endangered species) or fragile ecosystems, or areas which are fundamental to meeting basic or traditional cultural needs of local communities." <sup>1</sup>
Are there risks from climate change?	3	Excessive rainfall reduces road quality, inhibits harvest activity, and leads to flooding. It can also change the behavior of insect pollinators and increase the likelihood of pests. However, adaptation strategies are under development.
Are there phytosanitary and other safety and quality risks?	4	None foreseen
Are there political and other risks, such as related to land availability	2	There has been significant opposition from local communities to previous mining and other ventures. This has been exacerbated by the fact that past promises of compensation to those communities have often not been met.
What are the risks that barriers to growth in this subsector will be difficult to remove?	2	Slow procedures to reach agreement on investment, combined with likely opposition from existing land users, could result in significant delays.
Average for Criterion 5:	2.80	
<b>Total score:</b>	<b>15.46</b>	
<b>Average score for all five criteria:</b>	<b>3.09</b>	

## 12. PORK

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	3	Additional investment could lead to exports to Caribbean either as frozen meat or processed products. Domestic demand now largely met
Direct and indirect jobs	3	Pig production is not labor intensive and relatively few additional jobs likely to be generated
Higher value jobs	3	Relatively limited opportunities for higher value jobs
Average for Criterion 1:	3.00	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	3	Prices are increasing due to decline in value of currency. However, offsetting this, demand is declining due to loss of purchasing power
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	3	Existing investors appear adequate to meet domestic demand but may be insufficient to expand production to supply CARICOM. Market leader is training other farmers to become GlobalGAP certified with the intention to supply CARICOM markets
Does Suriname offer a conducive business environment for this activity?	3	Main constraint is cost of finance. Land is not a major constraint as pig rearing takes up relatively small areas.
Average for Criterion 2:	3.00	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	3	Only limited added value likely given recent new investments by pig farms and processors
Improvements to overall value chain performance	3	Value chain developments already include strong pig rearing and processing linkages and additional investment may have limited impact
Greater inclusiveness leading to improved farmer incomes	2	Commercial pig rearing not suitable for small-scale farmers
Average for Criterion 3:	2.66	

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**12. PORK (continued)**

Criteria and evaluation factors	<b>Score (1 = poor; 5 = excellent)</b>	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	4	Infrastructure appears adequate
Does Suriname have the people, skills, and supporting services to compete in this subsector?	3	Existing knowledge appears adequate. Market leader has been organizing training courses for other farmers
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	4	Experience suggests that no significant problems are being experienced with pig rearing in Suriname.
Average for Criterion 4:	3.66	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?		
Are there market risks?	3	For the domestic market the main risk is declining purchasing power. Exports to the Caribbean may encounter NTBs
Are there risks from climate change?	4	No major risks foreseen
Are there phytosanitary and other safety and quality risks?	3	Export of processed products to the Caribbean would mean that all suppliers of pork would require certification
Are there political and other risks, such as related to land availability	3	Likely need for laboratory facilities to carry out tests to satisfy export requirements.
What are the risks that barriers to growth in this subsector will be difficult to remove?	2	Government support facilities have been slow to develop have been slow to develop
Average for Criterion 5:	3.00	
<b>Total score:</b>	<b>15.32</b>	
<b>Average score for all five criteria:</b>	<b>3.06</b>	

### 13. POULTRY

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	3	Existing production has struggled to compete with cheaper imports. While the decline in the SRD may make imports less competitive, both the type of product imported and the high import-cost of domestic production suggest limited opportunity for balance of trade improvements in the short term. Export possibilities to the CARICOM have potential if NTBs can be addressed
Direct and indirect jobs	2	Relatively limited opportunities for further employment
Higher value jobs	2	Relatively limited opportunities for additional well-paying jobs
Average for Criterion 1:	2.33	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	3	Prices presently rising but this is having a counterbalancing negative impact on demand
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	2	A relatively new investor in duck production suggests that there is potential interest. However, there is overcapacity for poultry production
Does Suriname offer a conducive business environment for this activity?	3	A well-established industry unlikely to face start-up problems. Major constraints include lack of government support to address NTBs in neighboring countries; high cost of imported feed; and perceived lack of protection against low-cost imports
Average for Criterion 2:	2.66	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	3	Until recently little attention paid to adding value other than through a fast food chain using local chicken. Recent processing developments to use chicken for catering and consumer packs may limit scope for additional value addition
Improvements to overall value chain performance	3	Support for export development from government has been largely lacking. Domestic value chain seems fairly efficient
Greater inclusiveness leading to improved farmer incomes	2	Market split between small-scale (local sales) and large-scale (commercial sales). New investments likely to involve existing larger producers and thus impact on inclusiveness unlikely
Average for Criterion 3:	2.66	

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**13. POULTRY (continued)**

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	3	One leading chicken company has faced major problems in resolving road access problems
Does Suriname have the people, skills, and supporting services to compete in this subsector?	4	Sizeable domestic poultry sector with adequate skills
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	4	Natural endowments appear to have been adequate for poultry production
Average for Criterion 4:	3.66	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?		
Are there market risks?	2	High level of cheap cuts imported presents constant market risk for domestic industry and demand for these could increase as purchasing power of wages declines. Inability to access CARICOM has presented almost unsurmountable risk for duck producer
Are there risks from climate change?	3	None apparent
Are there phytosanitary and other safety and quality risks?	3	The outbreak of poultry diseases around the world suggests the high potential risk, which would be exacerbated by Suriname's poor animal health facilities
Are there political and other risks, such as related to land availability	4	None foreseen
What are the risks that barriers to growth in this subsector will be difficult to remove?	3	Increased duties on cheap poultry meat imports requested by the poultry industry are unlikely given the implications for consumers
Average for Criterion 5:	3.00	
<b>Total score:</b>	<b>14.31</b>	
<b>Average score for all five criteria:</b>	<b>2.86</b>	

## 14. RICE

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	4	There is a significant CARICOM rice import bill that Suriname is currently supplying and could increase its share. However, Suriname is a high-cost rice producer and opportunities to develop exports further would seem relatively limited.
Direct and indirect jobs	1	The sector is not a high employer as most production is heavily mechanized including through the use of seeding and crop-spraying planes
Higher value jobs	2	Any expansion would be likely to occur via existing mills and offer little opportunity for additional high-paying jobs
Average for Criterion 1:	2.33	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	3	World demand for rice is increasing outside the major producing and consuming countries but prices have recently been low. Suriname cannot compete with major Asian producers, with the possible exception of the CARICOM market where there is room to increase supply share (but encountering strong competition from Guyana).
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	3	Existing producers and millers express interest in investments to increase production and improve quality, but no investment plans have been initiated.
Does Suriname offer a conducive business environment for this activity?	3	The business environment is adequate although mills are seeking additional cuts in duty on imported equipment and farm inputs. Rice production constrained by poor varieties and irrigation and drainage problems.
Average for Criterion 2:	3.00	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	1	There are 24 rice mills already in operation
Improvements to overall value chain performance	2	There is potential to address weaknesses but should be done by government in collaboration with the existing rice sector. External investment unlikely to help although planned technical assistance could be valuable
Greater inclusiveness leading to improved farmer incomes	2	Most rice farms are large scale. Rice is not seen as a crop suitable for further development by small-scale farmers as they cannot compete with industrial production of larger farms
Average for Criterion 3:	1.66	

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**14. RICE (continued)**

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for competitiveness in the subsector</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	3	Infrastructure well developed with the exception of irrigation and drainage, where management is poor and costs high
Does Suriname have the people, skills, and supporting services to compete in this subsector?	4	Skills available appear to be adequate
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	4	Natural endowments seem very suitable for rice production
Average for Criterion 4:	3.67	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?		
Are there market risks?	3	Ability to compete with Asian producers very limited. Devaluation unlikely to have a major impact as there is heavy import component to production costs.
Are there risks from climate change?	3	An increase in pests and diseases has already been noted.
Are there phytosanitary and other safety and quality risks?	3	SPS has not been a problem for exports to date. However, the practice of crop spraying by plane has potential health risks for humans and can result in contamination of other crops, although the rice area is largely a monoculture
Are there political and other risks, such as related to land availability	4	The land has been used for rice for many years without appreciable land disputes. No other significant political risks foreseen
What are the risks that barriers to growth in this subsector will be difficult to remove?	3	Market and climate change risks will be difficult to address. Access to quality/improved seeds requires legislative changes.
Average for Criterion 5:	3.20	
<b>Total score:</b>	<b>13.87</b>	
<b>Average score for all five criteria:</b>	<b>2.77</b>	

## 15. VEGETABLES

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>1. Direct impact on jobs and exports</b>		
Will introduction or growth of the subsector have significant impact on:		
The balance of trade	4	Exports of selected vegetables to both Europe and the Caribbean could be increased significantly with improved production techniques and if logistic and trade barrier difficulties could be resolved
Direct and indirect jobs	3	Introduction of improved techniques would necessitate more commercial farming with employment opportunities
Higher value jobs	3	Relatively limited opportunities for well-paying jobs
Average for Criterion 1:	3.33	
<b>2. Investment and market opportunities</b>		
Are demand and prices growing in the subsector?	4	Demand for some tropical vegetables that Suriname could produce (e.g. okra) appears to be growing in Europe and markets for a range of vegetables have been identified in the Caribbean
Are there qualified investors interested in investing in this subsector, particularly in Suriname?	4	Existing investors keen to increase production and sales; growing global horticultural investment; but there is limited domestic technology for year-round production.
Does Suriname offer a conducive business environment for this activity?	2	Sector suffers a number of constraints that are not presently being addressed by government, including airport logistics, laboratory facilities and resolution of trade issues
Average for Criterion 2:	3.33	
<b>3. Indirect impact on inclusiveness or spillovers</b>		
Will new investment in the subsector lead to:		
Added value not already provided by existing farmers or investors	4	Scope for increased production and sales seems considerable. Existing investors may not be completely able to achieve this without new entrants and without widespread use of GlobalGAP certification to open markets beyond the diaspora
Improvements to overall value chain performance	4	Many value chain weaknesses required greater government support; new entrants could bring improved production approaches
Greater inclusiveness leading to improved farmer incomes	3	Small and medium-scale farmers face difficulties in complying with existing requirements of exporters. Industry export expansion requires all farmers to meet certification standards
Average for Criterion 3:	3.66	

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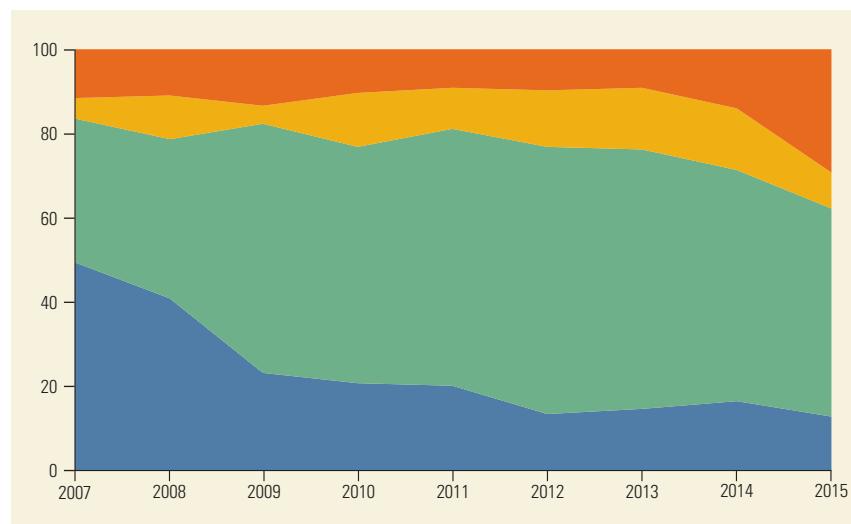
## 15. VEGETABLES (continued)

Criteria and evaluation factors	Score (1 = poor; 5 = excellent)	Evidence
<b>4. Underlying assets for subsector competitiveness</b>		
Does Suriname have or can it easily develop the infrastructure to compete in the subsector?	3	Suriname has regular air flights to Amsterdam to access European markets. Main constraints relate to (1) improving airport infrastructure, (2) increasing export volumes to justify expanded air cargo to Europe, and (3) lack of direct flights to Caribbean countries, or small capacity of existing planes.
Does Suriname have the people, skills, and supporting services to compete in this subsector?	3	Adequate farming skills exist but appropriate upgrading training is required
Does Suriname have competitive natural endowments (land, climate, location, etc.)?	4	Natural endowments have been shown to be adequate
Average for Criterion 4:	3.33	
<b>5. Private investment risks</b>		
Are there significant risks that an investor would face in Suriname for this subsector?	Score (5 = low risk; 1 = high risk)	
Are there market risks?	3	Past rejections of consignments have occurred in target markets for a variety of reasons. GlobalGAP will be necessary for all farmers as increased exports will require selling through supermarkets
Are there risks from climate change?	3	Investment in greenhouse, plastic tunnel, mulching and drip irrigation should address any problems
Are there SPS and other safety and quality risks?	3	Impact of "moko" disease on bananas indicative of the type of problems that can occur
Are there political and other risks, such as related to land availability	4	Few foreseen
What are the risks that barriers to growth in this subsector will be difficult to remove?	3	Urgent action relating to provision of laboratory facilities is required.
Average for Criterion 5:	3.20	
<b>Total score:</b>	<b>16.87</b>	
<b>Average score for all five criteria:</b>	<b>3.37</b>	



## Appendix E

### Extractives Sector supplementary Data



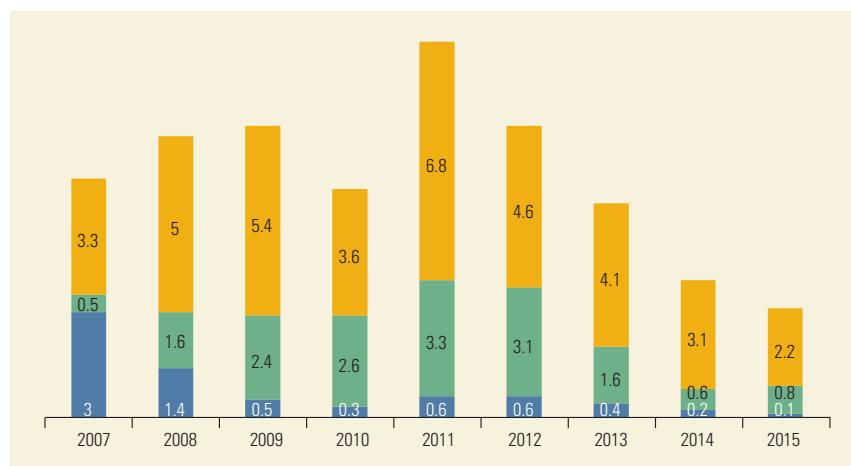
**FIGURE E.1**  
Export Trends across  
Products (as Percent of Total  
Exports)

Source: Source: Central Bank of Suriname, IMF, World Economic Outlook, 2016.  
Note: 2015 data are estimates.

**FIGURE E.2**

**Decreasing Contribution of Commodity Sector to Government Revenues  
(as Percent of GDP)**

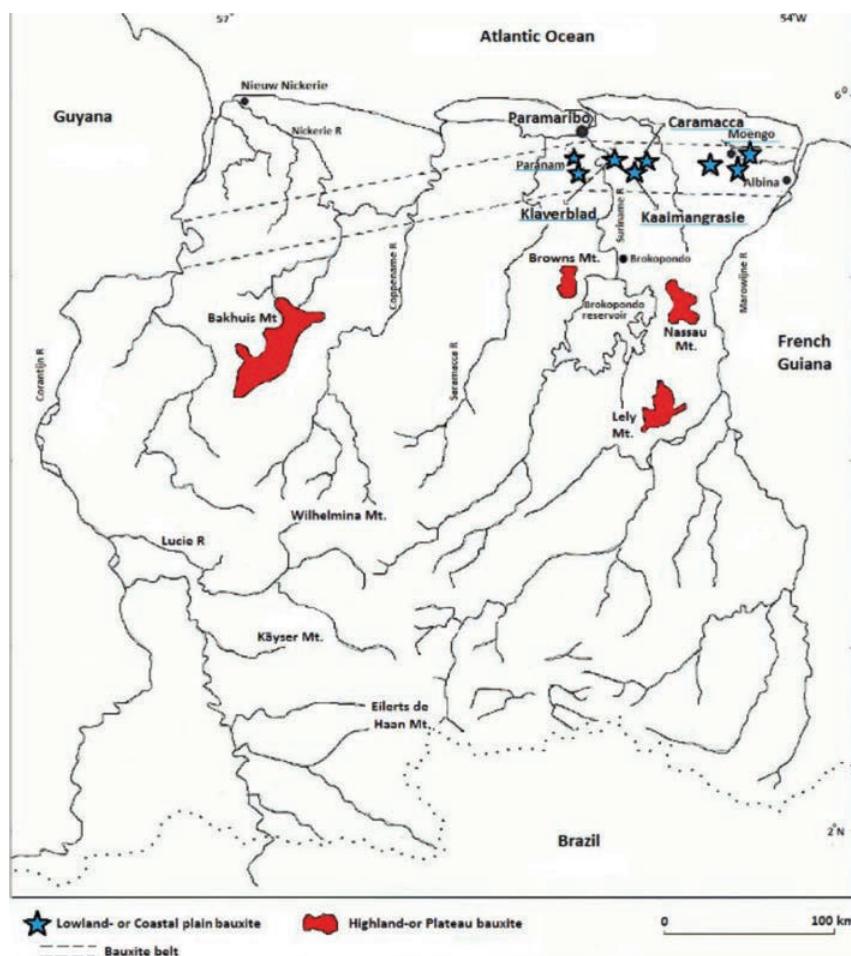
- Alumina
- Gold
- Oil



Source: Central Bank of Suriname, IMF, World Economic Outlook, 2016.

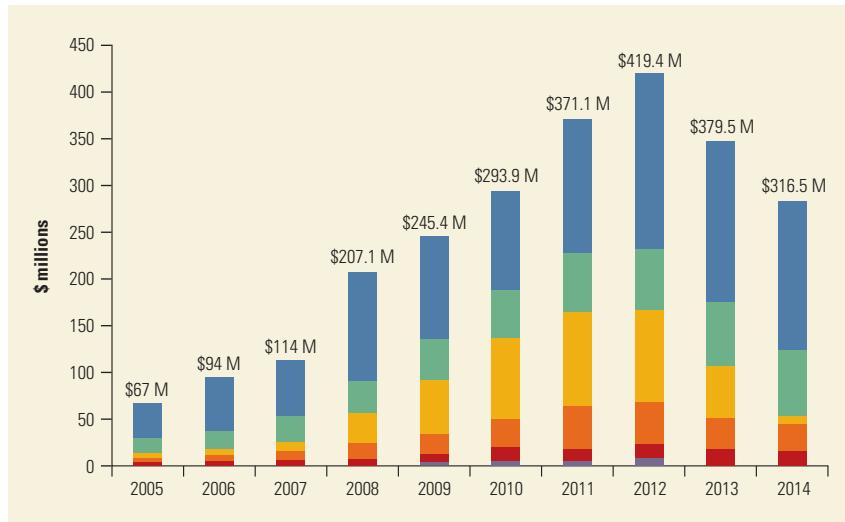
**FIGURE E.3**

**Bauxite Deposits in Suriname**

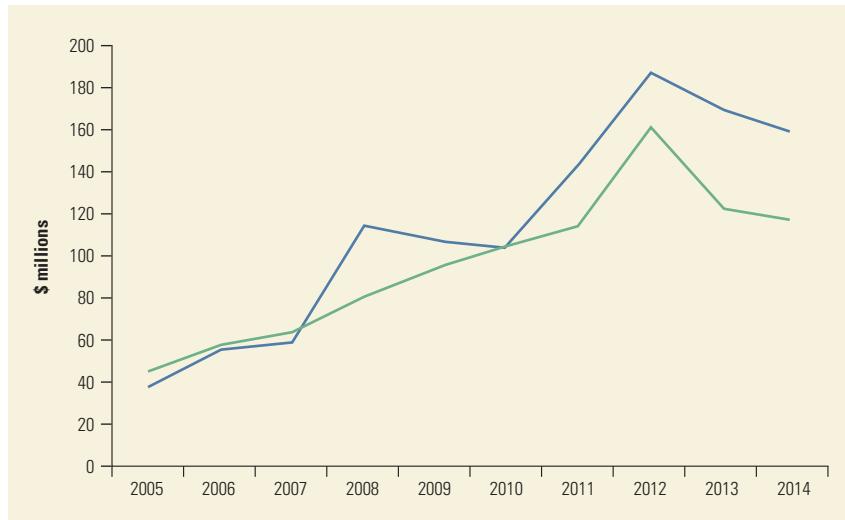


Source: "Exploring and Developing New Mines" presentation by Dennis J. LaPoint at the SURIMEP Conference 2014.

Note: As of 2014, non-commercial deposits are: Coermotibo (18 tons) [bauxite characteristics] & Lely (15 tons) [distance]; Environmental/Social Opposition: Brownberg (9 tons) & Bakhus (325 tons); Commercial: Para North & KKN (15 tons) & Nassau (30 tons).



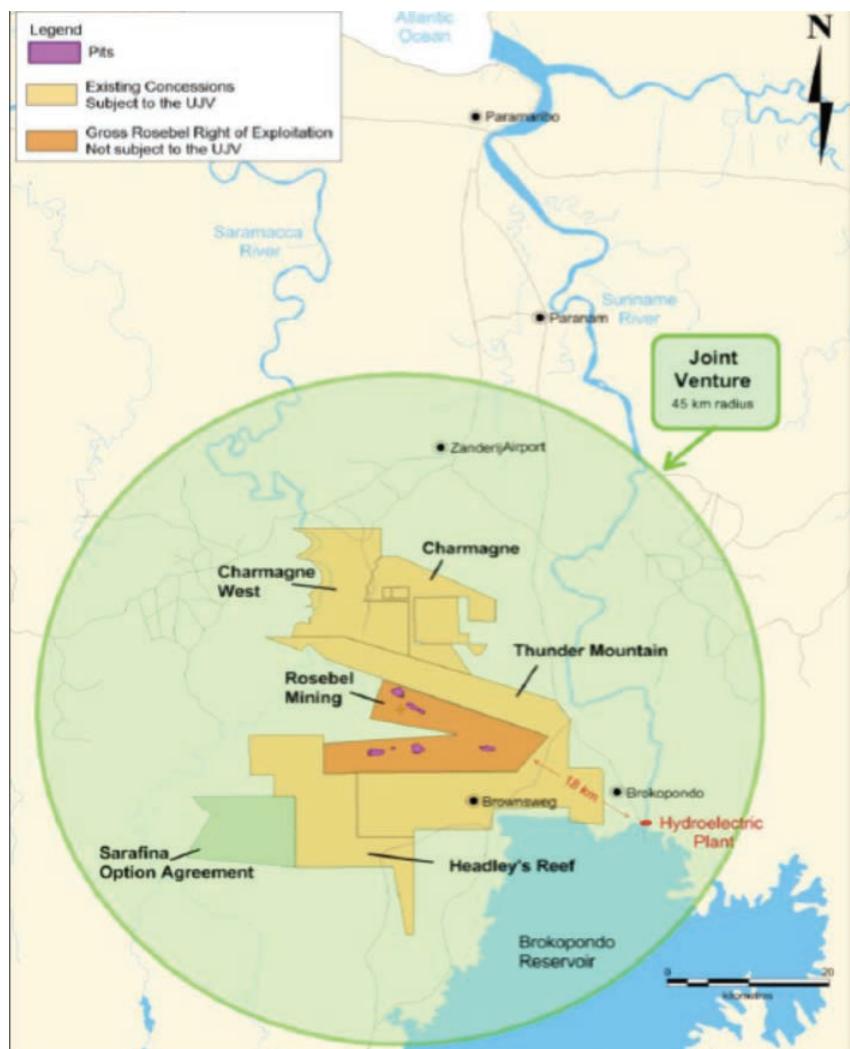
**FIGURE E.4**  
**Rosebel Total Contribution,**  
**2005–2014**



**FIGURE E.5**  
**Local Content in the Rosebel**  
**Mine—Suriname vs.**  
**Non-Suriname Suppliers,**  
**2005–2014**

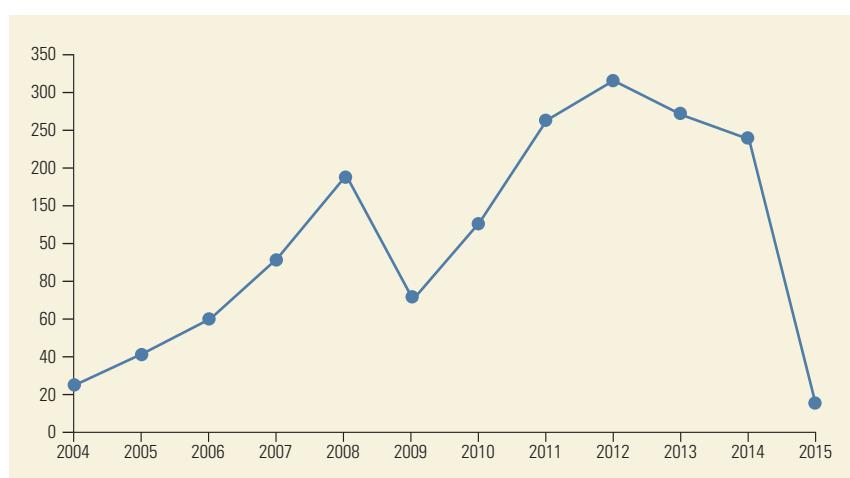
Source: IAMGOLD, March 2016.

**FIGURE E.6**  
Rosebel Concessions

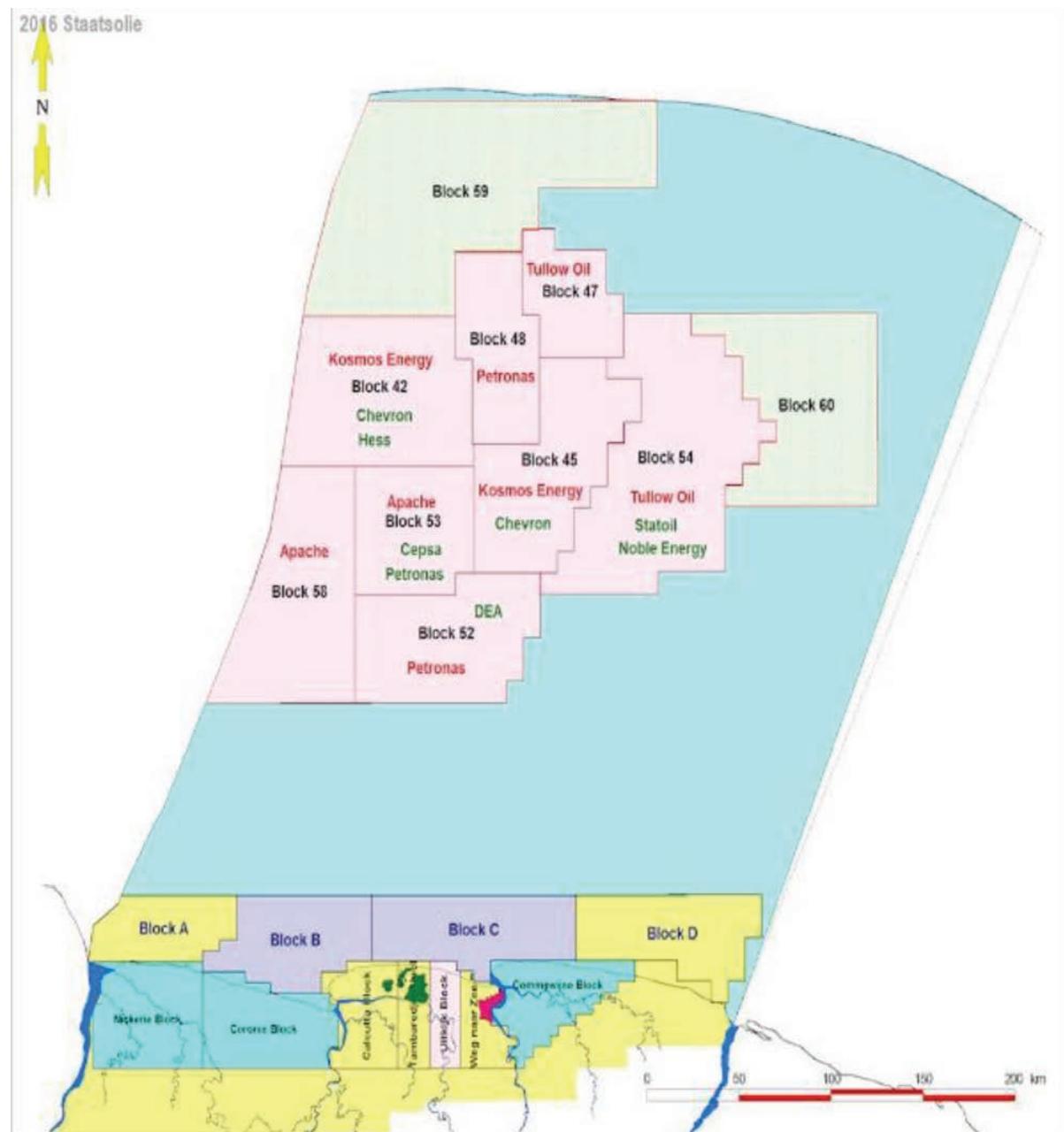


Source: IAMGOLD, March 2016.

**FIGURE E.7**  
Staatsolie's Contribution to  
Government Budget,  
US\$ millions

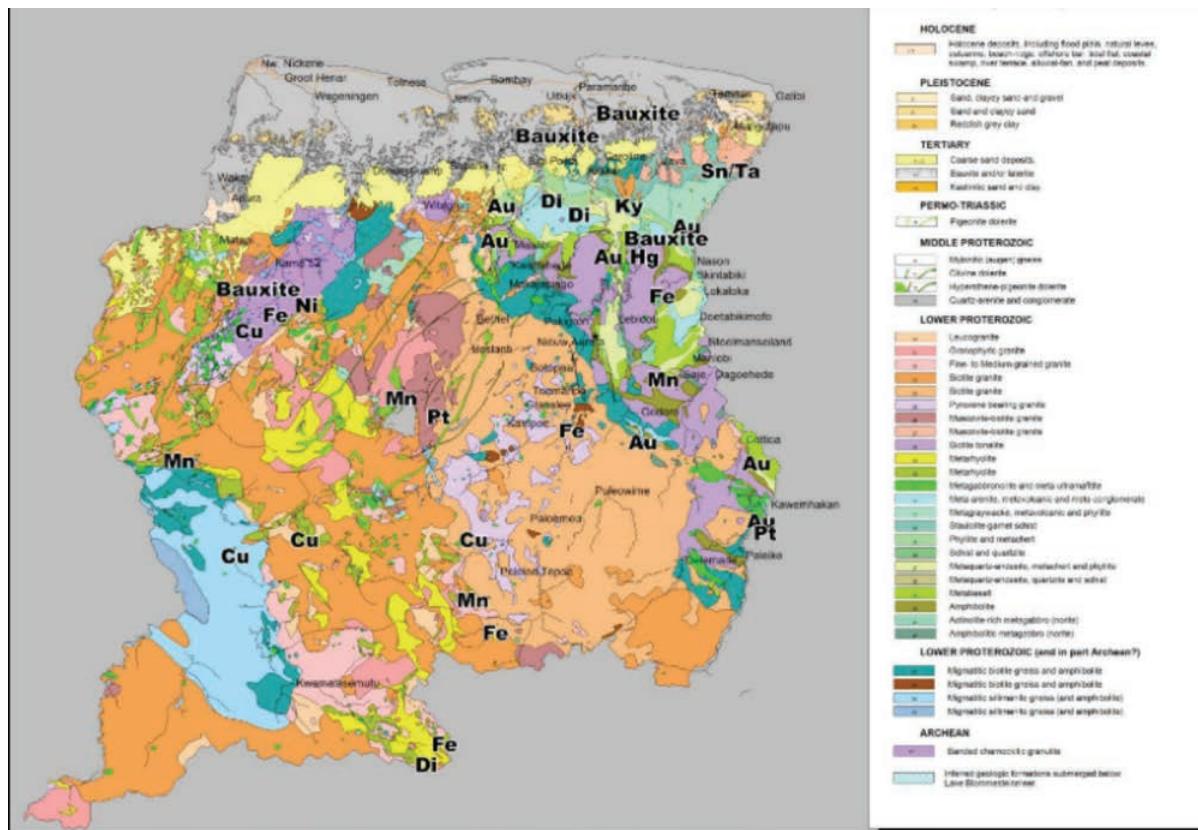


Source: Staatsolie, 2015 and 2016.

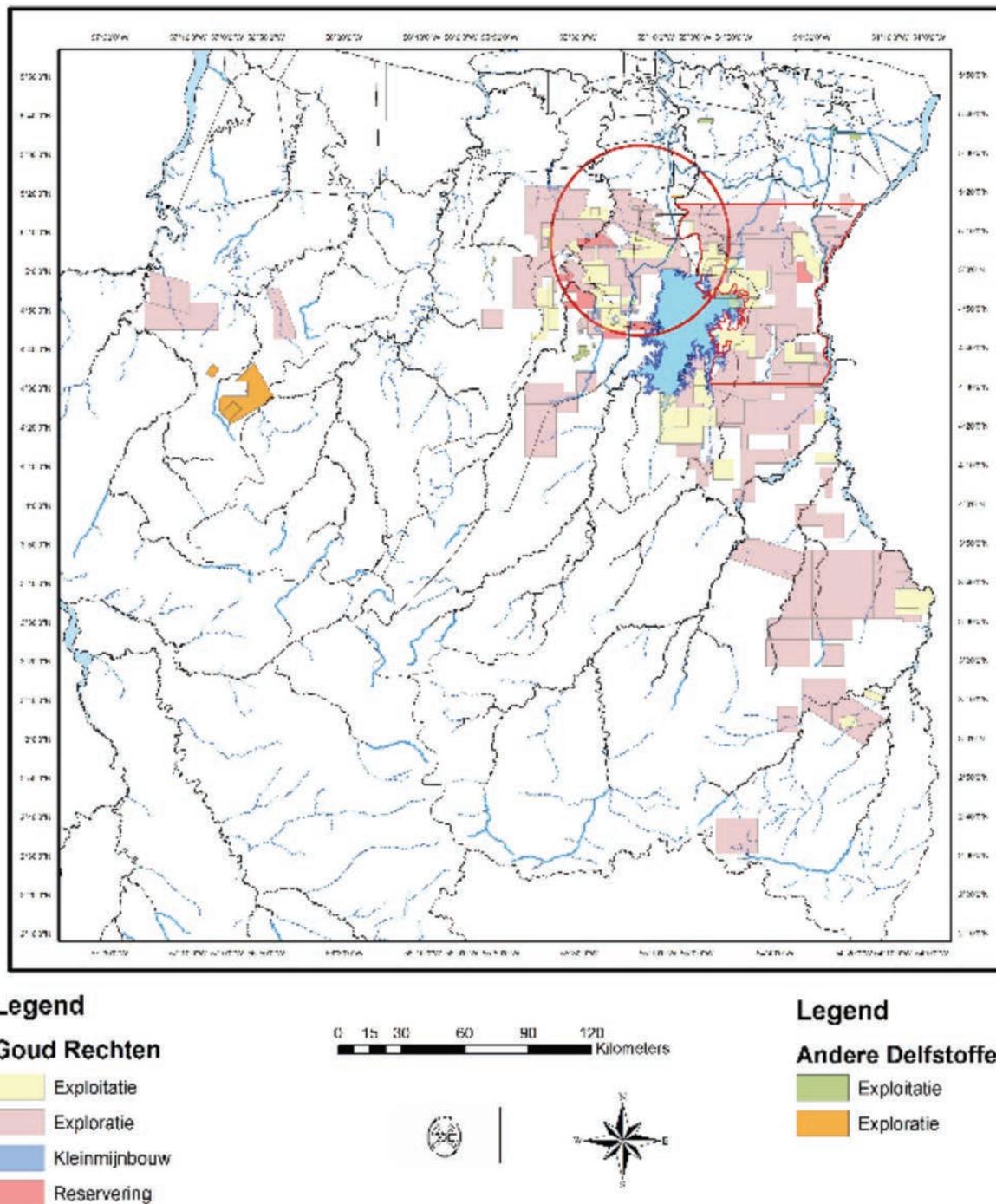
**FIGURE E.8** Suriname's On- and Offshore Exploration and Production Blocks

Source: Staatsolie, 2016.

## **FIGURE E.9 Geology and Historical Exploration, Suriname**

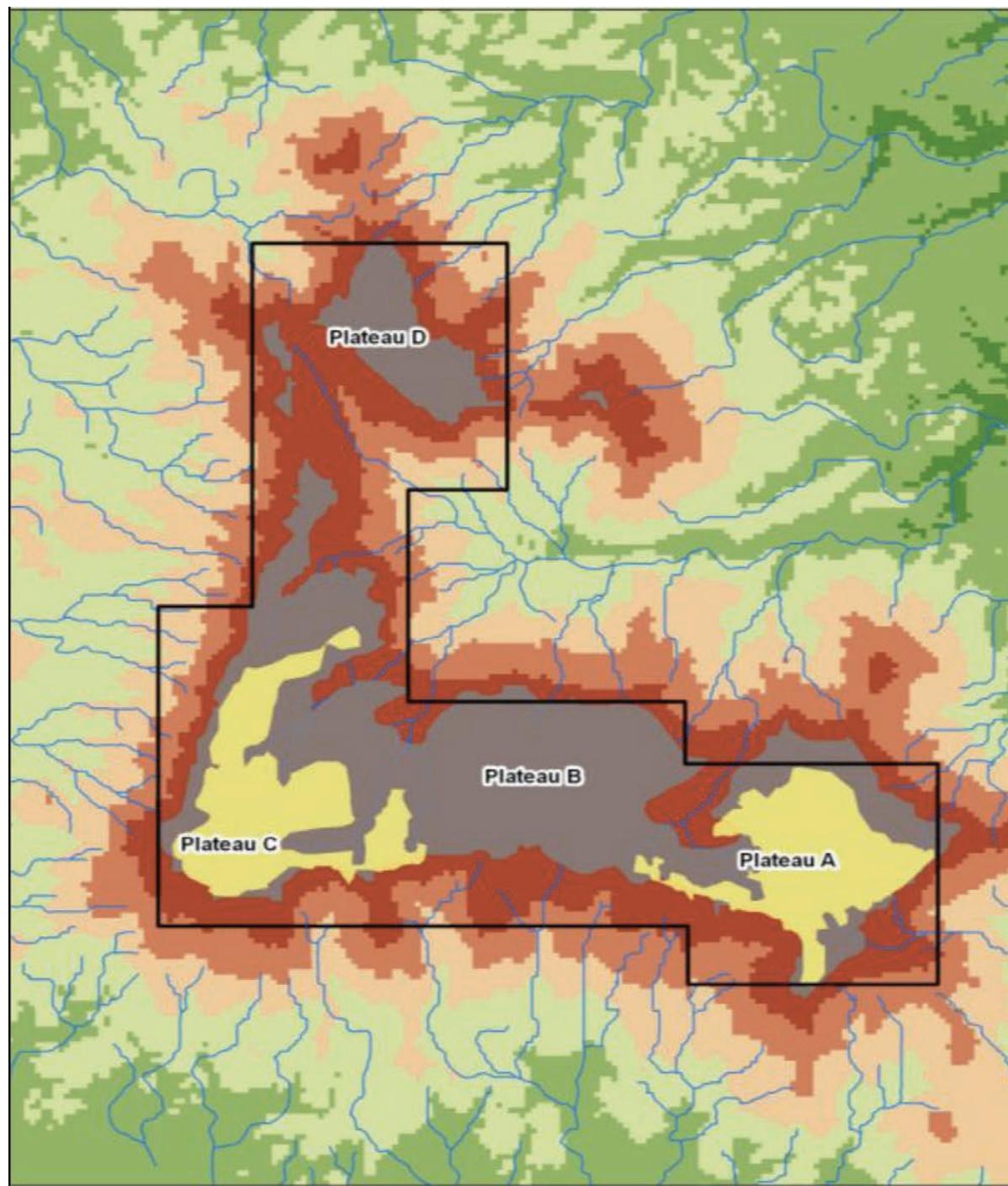


Source: Exploring and Developing New Mines Dr. Dennis J. LaPoint SURIMEP Conference 2014.

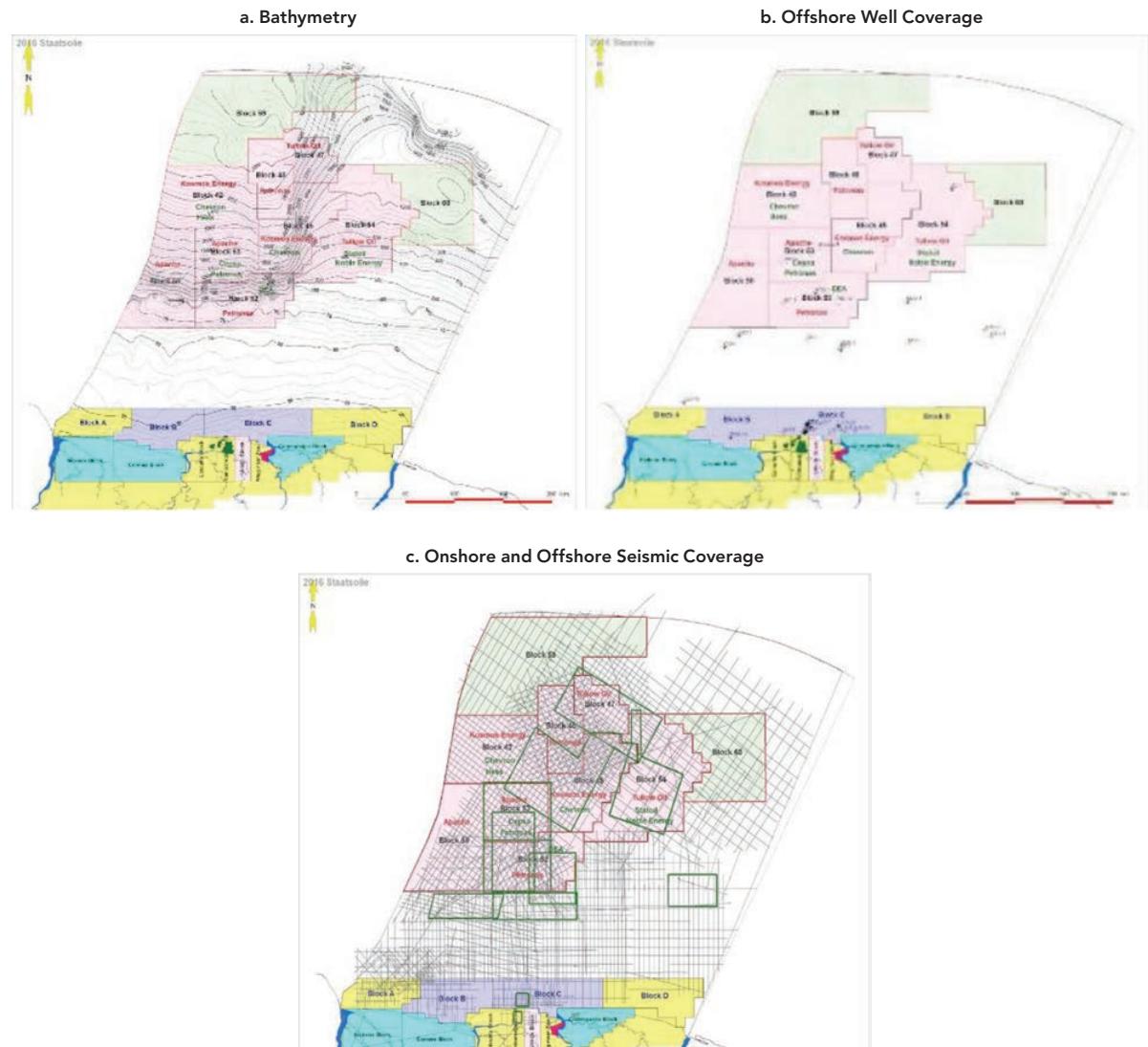
**FIGURE E.10** Map of existing Mining Concessions, Suriname

Source: Geological Mining Service, April 2015.

**FIGURE E.11** Nassau Plateau Showing Bauxite Mine Areas

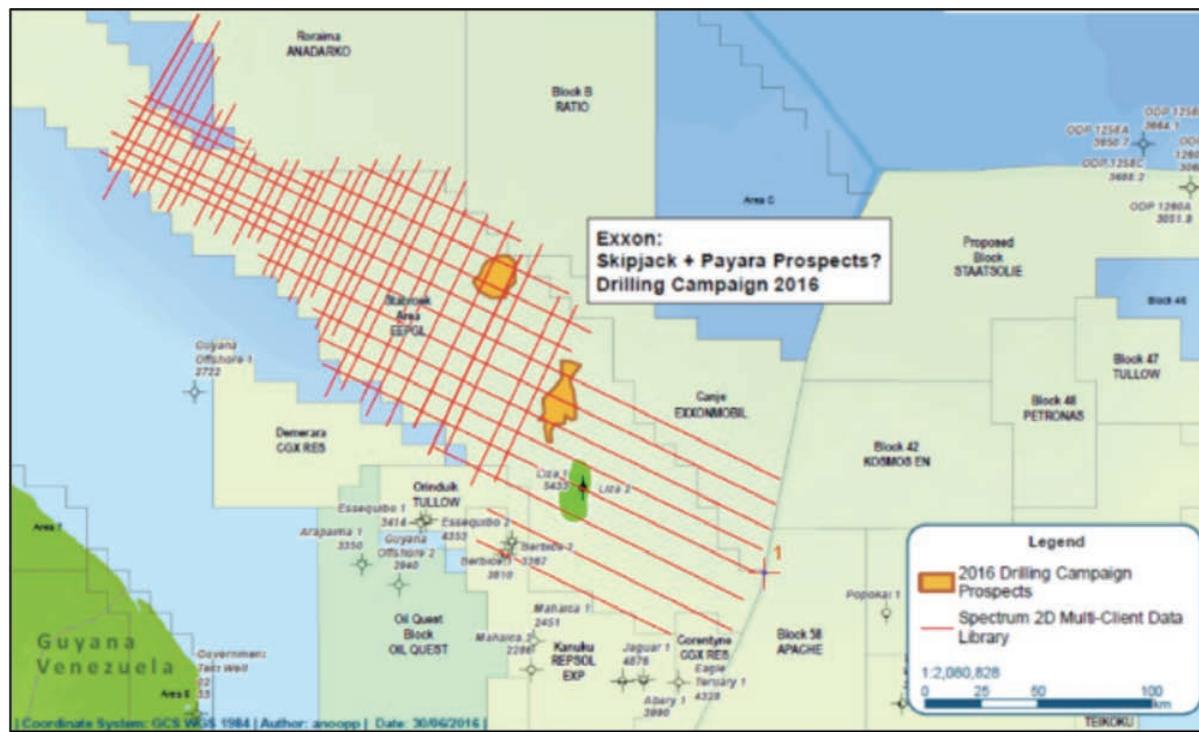


Source: Alcoa, 2014.

**FIGURE E.12** Suriname's Hydrocarbon Potential—Available Data

Source: Staatsolie, 2016.

**FIGURE E.13 Guyana's Discovery: Liza Finds**



Source: Spectrum, 2016.



