

# The Extractive Industry in Guyana: a trigger for sustainable development



*December 2014*

# Process Note

In February 2013, a white paper was produced that outlined a synopsis of key issues and recommendations for the mining sector's alignment with the LCDS and its contribution to Total Wealth<sup>1</sup>. This paper was produced in collaboration between Conservation International-Guyana (CI-G), WWF-Guianas, and Projekt Consult GmbH with support from the Federal Republic of Germany. Drawing on the need to foster dialogue around those issues among stakeholders, a July multi-stakeholder forum was organized with support from the Private Sector Commission, WWF-Guianas, and CI-Guyana. To build on the momentum on dialogue, a policy forum was held in September 2014 with regional perspectives on realizing sustainable development in natural-resource based economies, organized by CI-Guyana and the Trent Centre for Biomaterials Research and Trent University. This policy brief continues the process of consensus building by providing evidence-based recommendations that account for the present and anticipated realities in Guyana.

*This policy brief has been produced with the kind assistance of the Kreditanstalt für Wiederaufbau (KfW). The contents can in no way be taken to reflect the views of the KfW. The policy brief has also been supported by Conservation International-Guyana*



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<sup>1</sup>Total Wealth is an indicator developed by the World Bank, and comprises three types of assets: natural, produced and intangible capital (World Bank, 2006). Natural capital refers to the non-renewable and renewable natural resources that are available to a country. Produced capital refers to manufactured assets and machinery such as factories, capital plants, and infrastructure. Intangible capital comprises the resources that people possess inherently--human resources, including intelligence, education, skills, health, and the cohesion that exists in social structures. While the means of valuation of these three capitals may need refinement, the conceptual framework forms a useful basis for this policy brief, as it provides a more holistic measure of an economy beyond the more common measure of GDP.

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# Summary

The extractive sector is more a trigger and less of a driver of economic development. It holds great potential to contribute to the total wealth of the country, while meeting the commitments of national low-carbon, green development. This brief provides a number of proposals based on a series of hypotheses and available data. The brief also identifies the trends, challenges and policy issues, and recommendations that can assist in securing the extractive sector within Guyana's long-term sustainable development. Guyana's extractive sector must define its rightful role in the national and global framework in order to ensure that in trading in finite natural resources, the attendant economic rewards trigger growth in total wealth of the country. With its vast amount of still intact natural capital, and its strategic interest in sustainable development that is based on maintaining nature while growing a climate resilient economy, Guyana can achieve its sustainable development goals through the continued realignment of the various economic sectors with the LCDS.

This policy brief is also intended to expand public awareness and education about the need for sustainable development. In this regard, the brief also seeks to strengthen collaboration with stakeholders across various sectors in Guyana who recognize the need for action to improve the management and use of the country's natural capital and to ensure that the extractive sector results in growth in total wealth of the nation.

Recommendations to realize reduced impacts and costs of the extractive sector, while enhancing investments from the sector to the growth of Total Wealth, and building the capacity of people to participate fully in sustainable development by enabling and safeguarding their own economic sustenance are presented. These include:

1. Utilize technological solutions to maximize recovery and returns
  - a. Mineral mapping and exploration
  - b. Incentivizing efficiencies and appropriate use of technology
  - c. Value added production
2. Utilize financial solutions to enable sustainable transformation to a green extractive sector
  - a. Natural capital accounting
  - b. Sovereign wealth fund
3. Utilize investment strategies that could expand welfare benefits across remote communities
  - a. Public-private partnership
  - b. Corporate social responsibility
  - c. Allocation of responsibility for sustainable development

With attention to the issues outlined here, the extractive industry sector would play an important role in realizing sustainable development in Guyana. All measures considered must safeguard lives and livelihoods of people as a precondition for building their capacity to participate fully in the sustainable development of the sector and the country as a whole. It is therefore essential that policies to protect the extremely vulnerable are implemented along with those outlined here.

## ***Enhancing total wealth growth, triggered by Guyana's extractive sector***

The extractive sector's contribution to total wealth growth can be increased by reducing the impacts and other costs of the sector and increasing investments from the sector to the growth of wealth. This can be accomplished through use of technological and financial solutions. More efficient technologies can reduce impact and other costs, and maximize recovery and returns; and financial solutions can incentivize the use of these technologies and realize growth in total wealth. Given the diverse issues that impact total wealth and the nature and extent of the extractive sector, stakeholders representing the range of economic sectors need to be engaged. Stakeholders must recognize and understand their responsibility to ensure sustainable development.

## ***Mineral Mapping and Exploration***

Geological mapping should be actively promoted and fully utilized to reduce unsystematic mining. This will enable better returns on investment, and reduce trade-off costs associated with ecosystem loss for low mineral returns. Allocation of concessions, especially to smaller operators, should prioritize areas of known reserves - highest first, and avoid allocation of areas with unproven or minimal reserves. As far as possible, geological information collected by exploration actions should be available for the public good with fair and equitable access for all interested in its use.

## ***Incentivizing Efficiencies and Appropriate Use of Technologies***

Incentives should be offered for the achievement of ambitious sector benchmarks which should be set above current industry standard for parameters such as recovery and processing rate, fuel consumption, and ecosystem impact. New and appropriate technologies, for achieving these benchmarks, including mercury-free gold extraction technology, use of clean burning fuel, climate resilient technology, should also be promoted and incentivized. Particular efforts should be focused on the bauxite industry to ensure continued emphasis on improving recovery rates, reducing environmental and human health impacts, and use of cleaner-burning fuels that have lower impacts on clean air and climate.

In cases where energy costs matter, the pursuit of hydropower and other renewable technologies should be emphasized. These alternative choices should always be examined using capital budgeting techniques as they require long gestation periods and involve investments of large amounts of cash. They also bring opportunities to cooperate with the international community through foreign investment which in turn has opportunities for transfer of new skills and technologies.

## ***Value added production***

Within the total wealth framework, conversion of natural capital stock to value-added capital must be encouraged. As with the application of technology, value-adding should be promoted and incentivized. Some extractives are easier to convert into other products through locally available capacity, infrastructure and economies of scale. As an example, as much as 54% of global gold production is converted into jewelry, while in Guyana the value of gold exports to gold jewelry export was US\$440M compared to US\$3.9M respectively; Guyana's timber could produce a range of valuable high-end wooden products such as furniture for interior and exterior use and decorative moulding for use in housing construction.

Companies that fail to meet commitments to value-adding should be penalized, with the ultimate step being revocation of permits.

## ***Natural capital accounting***

The major implications of the LCDS for the extractive sector lie in the interrelationship between extraction and depletion and loss of natural capital. The economic and environmental costs and benefits of extracting forests, depleting minerals and destroying ecosystems must be realistically valued to determine the total wealth flows of the country. Commodity prices and the rate of extraction of the resources will dictate changes in the value of total wealth. This holistic valuation can be realized through natural capital accounting.

By combining traditional economic activity with those provided by ecosystems, total wealth better measures growth than traditional methods such as Gross Domestic Product (GDP). Focus on natural capital accounting better captures total wealth. Measures of GDP do not adequately account for impact on sustainable development; hence, globally there is a move away from exclusive reliance on GDP towards the concept of valuing total.

Global initiatives such as the United Nations promoted System of Environmental and Economic Accounts (SEEA) for natural capital accounting and the World Bank's global partnership on Wealth Accounting and Valuation of Ecosystem Services (WAVES) should be explored to help achieve a system for natural capital accounting in Guyana. The SEEA provides countries with a way to begin the process of compiling natural assets, physical flows and monetary accounts and to assign values to environmental factors. WAVES is a program to implement green accounting that integrates the value of natural capital into more conventional development planning analysis. WAVES can enable more evidence-based, informed decision making - targeting Ministries of Finance and Planning and Central Banks - to support sustainable development and genuine green growth trajectories.

Efforts should also be made to adopt tax laws that better favor ecosystems in development plans.

## ***Sovereign wealth fund***

Creation of a sovereign wealth fund (SWF) to serve as a repository of a fixed portion of revenue from the extractive sector should be considered. Currently, several funds exist under various entities with limited coordination; most are also not invested in to achieve good interest rates. These funds should be consolidated into a SWF to ensure appropriate annual allocations that meet adequate safeguards and systems to ensure proper deployment to build total wealth.

SWFs protect against market instability and serve future generations. They are state-owned assets typically created to manage surplus funds that cannot be spent immediately. These funds reduce the risk of "Dutch Disease" that lead to uncompetitive exchange rates and distortions in resource allocations, potential for unsystematic spending and mismanagement of windfall revenues. Used as stabilization funds, they shield public money from economic shocks. Funds can also be strategically deployed consistently over time to build total wealth, especially the human capital development of the country.

## ***Allocation of responsibility for ensuring sustainable development***

The decision about resource allocation involves revenue allocations between the private and public sector. In this regard, the first consideration is whether the private sector or the public sector should be given the greater responsibility for ensuring sustainable development. For the gold industry that is not covered by any separate mineral agreement, an average of 40% of revenues accrues to the miner. Hence, the miners ought to contribute to sustainable development.

Miners' impact on total wealth would depend greatly on the amount of resources invested in wages, retirement plans, National Insurance Scheme and other benefits to workers, and how profits are used to meet community needs and additional private non-mining investment.

### ***Corporate social responsibility***

Two factors are relevant when considering the social responsibility of Guyana's extractive sector. One is tasking local operators to increase their social responsibility to the communities where they invest and work; and the other is assessing the merit of the self-regulation of extractive industries with respect to sustainable development.

### ***Public-private partnership***

The use of the public-private partnership model can help meet the economic, social and security needs of communities outlined in the sections above when it results in increases in tangible and intangible capital.

# Background Information

## I. Introduction

The extractive sector has a key role to play in advancing Guyana's economy along a sustainable and responsible path and in the country's efforts to contribute meaningfully in global efforts to combat climate change. The sector comprises the mineral commodities of gold, bauxite, diamond, and mineral materials of quarry stone, sand, loam and laterite. Other extractive materials are non-mineral commodities such as timber and non-timber forest products. Current exploration for oil and gas, and manganese could expand the portfolio of natural capital in the future as can other resources yet to be discovered. Gold accounts for about 75% of the value of the output of the mining sector. Bauxite contributes about 19% while diamonds account for an estimated 2% (GGMC, Mineral Report, 2010). Therefore, gold extraction remains a national priority with the greatest risk for adversely affecting the 'total wealth' (World Bank, 2006) of Guyana, which is key to the overall sustainable development agenda of the country.

The total wealth framework reveals that mining itself is only a generator of "wealth" if it extends beyond revenue generation and toward investment of those revenues into priority 'capitals' upon which the sector draws down; these are natural capital, produced capital, and intangible capital. The aforementioned commodities of the extractive sector and their ecosystems make up the natural capital of Guyana and along with produced capital (for example, roads, bridges, boats, machines, equipment, and buildings) and intangible capital (human intelligence, education, skills, health and social cohesion) constitute the total wealth of Guyana. Gold extraction has resulted in high rates of deforestation, the emergence of high levels of CO2 emissions and severe threats to human life. Moreover, like logging, authorities hold the view that large amounts of extracted gold are not declared. As a consequence of the large impact of gold extraction on the economy and the environment, the development of this brief will be based mainly on the activities of that commodity. For those commodities already under extraction, collectively, their removal has a series of common negative impacts on the total wealth of the country. These effects are primarily:

1. The destruction of the forest and its ecosystem;
2. The depletion of the mineral assets;
3. The disfigurement of the environment;
4. Increased vulnerability of human resources, including inability of, and distraction from, expanding knowledge; and
5. An additional concern is the likely mismanagement of financial flows from the depleting resources through public expenditure.

These five likely consequences of the extractive industry put the future sustainable development of Guyana via the low carbon development strategy at stake. As the sector depletes natural capital, the country's finite resources cannot be relied on to sustain development without end. Moreover, unlike a private business where depleting physical capital assets could be replaced to keep the business as a going concern, non-renewable resources are lost forever. The role of natural capital therefore should be regarded as a trigger of other activities in various sectors with the potential and ability to sustain the development of the country. The LCDS provides a basis for identifying and developing those priority activities and sectors which could perform a sustainable role.

## Purpose of the Policy Brief and the Approach to its Preparation

This policy brief aims to present an analysis of key issues in the extractive sector and to articulate a series of recommendations to policymakers on how to ensure that the management of the sector triggers growth of total wealth in Guyana. The joint evaluation of the five consequences mentioned above affords an opportunity to find evidence-based and rational solutions to sustainability and serves as a basis for providing policy guidance for aligning the extractive sector with the sustainable development of Guyana.

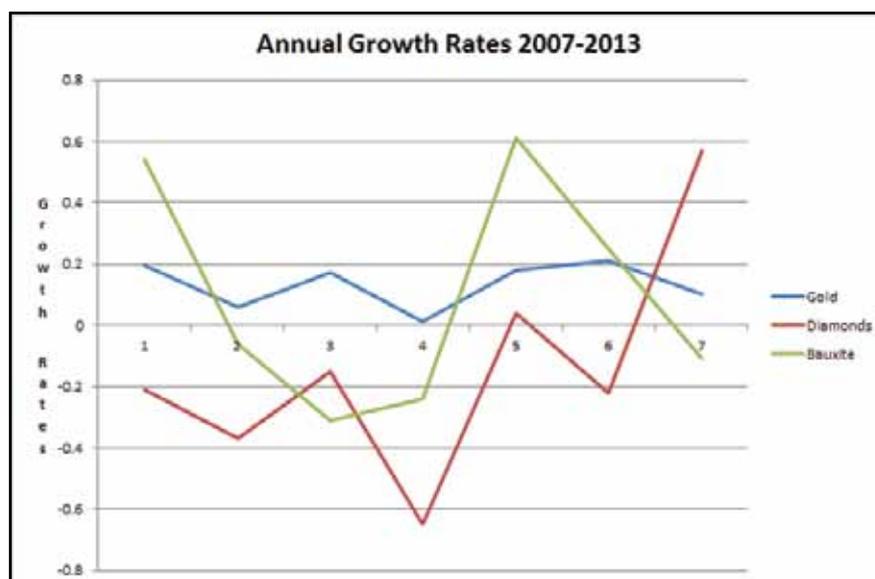
The paper was prepared using a combination of desk reviews, data analysis and Stakeholder consultations.

## II. State of the Extractive Sector

According to the National Land Use Plan, the main economic minerals extracted from the environment of Guyana are gold, diamonds and bauxite (2013). Guyana is divided into six mining districts, namely Berbice, Potaro, Mazaruni, Cuyuni, Northwest District and Rupununi. The Guyana Gold and Diamond Miners Association (GGDMA) has proposed committing itself to mining no more than a certain percentage of the total land mass of Guyana which they believe would not impede the sustainable development agenda. The mineral with the greatest impact on the environment and the economy is gold. From 1993 to 2005, the majority of gold was extracted by Omai Gold Mine in Region 7 but since 2006, production of gold and diamonds is dominated by small- and medium-scale miners. The expansion in extraction was driven by the sustained boom in the price of gold (National Land Use Plan, 2013) though continued to come from less than 2% of the land mass. The mix of extracting entities in the gold industry will change the face of the industry when Guyana Goldfields commences extraction in mid-2015, and Troy Resources, ETK Sandsprings and possibly Reunion Gold, who are not far behind, come on stream. However, the presence of these foreign companies is not expected to have any additional impact on deforestation.

Figure 1 shows the growth rates of the three commodities of bauxite, diamonds and gold for the past seven years. The rate of gold extraction slowed but was never negative over the period of review. Extraction of the other two commodities slumped significantly with diamond output plunging over 60% in 2010.

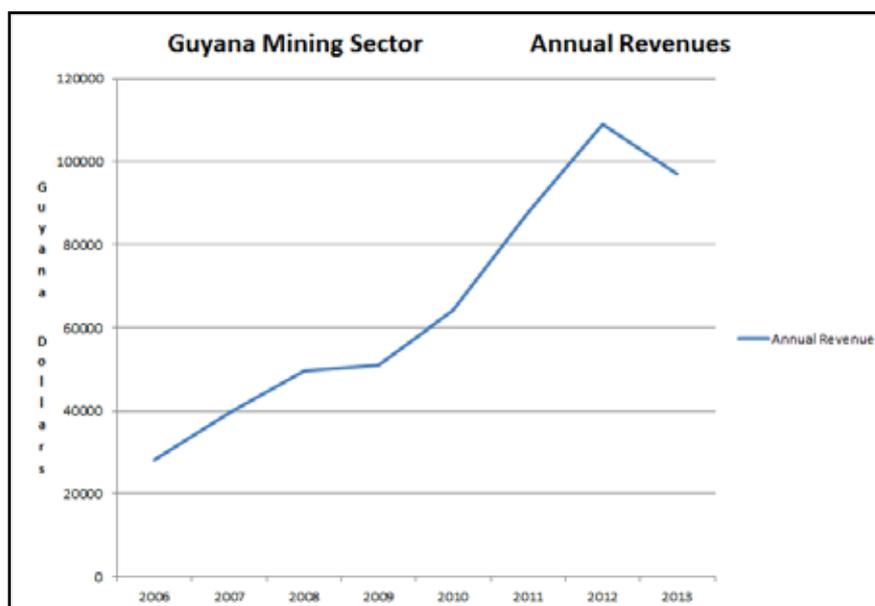
Figure 1



## Background Information

Figure 2 shows the steep rise in revenues enjoyed by the industry since 2006. Revenues peaked in 2012 and declined in 2013 as a consequence of falling prices. The relevance of the extractive sector to a sustainable expansion of the economy will depend on the price of gold.

Figure 2



### III. Key Issues

#### Employment and Wages

The extractive industry paid an estimated G\$12 billion in wages in 2012. This means that 20% of the revenues generated by the industry in 2010 went to pay wages. Many have been lured by the attractive salaries and investment returns in the gold industry. The Guyana Geology and Mines Commission (GGMC) reported that the gold industry officially had 9,800 workers and the mining sector as a whole had 11,189 employees in 2010. The gold industry's share of employment represented 91% of the total direct employees in the mining sector. The March 2013 Update of the LCDS reported direct employment in the sector in 2012 to be 16,500. One industry representative estimates that there are 60,000 persons directly employed by the industry with an additional 40,000 being indirectly supported by gold and diamond mining operations. While the high employee numbers suggest a pull effect on labour, it does not support the notion of a competitive income, particularly from gold and diamond mining. At an employee count of 60,000, the average monthly wage is G\$16,000 while at an employee strength of 11,189, it is G\$88,000. Unless there is a hidden or intangible benefit, focus should remain on the officially reported employment numbers.

With so many persons living and working in the interior and then travelling in and out of those areas, there is the risk that a large cohort of persons could be exposed to infection and diseases. Trafficking in humans has been linked to the mining communities in Guyana and to prostitution within the mining industry as well (US Report on Human Trafficking in Guyana, 2014). The vulnerability of workers in the mining industry increases with high risk sexual activities and the unavailability of robust medical and security services in many locations. There are no statistics on the education level of workers in the gold industry, but the majority are thought to be highly unskilled.

## **Mineral Extraction and Low Carbon Development Strategy**

The Low Carbon Development Strategy (LCDS) is a national policy that speaks to the vision of sustainable development for Guyana. It describes how the country will grow along 'a green', low carbon, sustainable path while maintaining the forests. The LCDS has three main components; low deforestation, low carbon and climate change resilience (LCDS Update, 2013). Its main objective is economic transformation which will be fuelled by a new revenue stream obtained from the climate service provided through sustainable management of its forests.

## **Mining Activities and Total Wealth**

The extraction of natural capital increases total wealth when its contribution causes comparable or greater growth in other types of assets, such as human and produced capital. The contribution of mining activities to growth in total wealth and the establishment of a healthy and sustainable economy are therefore dependent on:

1. The value-added effects of the lost natural resources and ecosystem services that occur during extraction, processing, transportation and distribution of the depleted resources; and
2. How the proceeds of these activities are invested to grow the produced and human capital stocks.

The first issue addresses long-term efficiency considerations in the extraction process. It also confronts capital budgeting considerations that emphasize that the choice among alternative uses of the natural resources and ecosystem services must be made. Capital investment therefore emphasizes the long-term situation of both produced and human capital. Since the government owns the mineral rights and the private investors lease those rights, the second issue is directed at resource allocation between the government and the private sector. The government obtains royalties and taxes from the sale of the natural capital, which should be accounted for through the budgeting process. Consequently, the social (infrastructure) and welfare (pensioners, disabled etc.) effects of resource distribution become important.

## **Inadequacy of GDP as a measure of Total Wealth**

Like every other country, Guyana measures economic progress using GDP. However, GDP does not enable one to see the impact on sustainable development. The world has begun to move away from reliance on GDP alone and towards the concept of valuing total wealth in recognition of the inability of GDP to fully capture the conditions and requirements for sustainable development. By using a system of accounting that measures the value of traditional economic activity (such as agriculture) and the value of natural capital accounting, the measures of total wealth captures more than what GDP alone as a value-added measure captures. The first step is to focus on adding natural capital accounting to the national system of accounting.

## **Mix of Natural Resources and Ecosystem Services**

The concern about efficiency depends on how well the value chain of economic and ecosystem activities can minimize environmental destruction and degradation while maximizing revenues. The greatest risk could be found in the first three parts of the value chain where, extraction and processing lead to the total write-off of minerals and ecosystem services and transportation, through emissions, could adversely affect climate change. However, the distribution function occurs offshore since the bulk of the resources are exported.

# Background Information

## Value-Added Output

“Natural resources are real assets. They have an intrinsic value and provide utility by use in industrial manufacturing” (Fabozzi et al, 2008). Timber, gold, sand, stone and loam are the natural resources which could be extracted easily by Guyanese and foreign businesses. Bauxite and manganese are more difficult and complex operations for Guyanese to undertake without incurring substantial costs. Extracting gold from rock formations also requires technology which might be easier acquired by foreign companies. Nevertheless, timber and gold lend themselves to conversion into other products more easily through local operations than bauxite or manganese. As much as 54% of the world production of gold is converted into jewelry. Timber could be made into paper, furniture and decorative moulding for use in housing construction. Furniture and decorative moulding are easier to achieve. As such, total wealth must also consider the conversion of mineral stock into value-added capital from the mix of natural resources and ecosystem services.

## Capital Budgeting

Capital budgeting reminds one that natural capital could have alternative uses. These alternative choices enable policymakers to examine the impact of economic activity on the environment and make informed choices of which course of action to take. This is done using ‘net present value’ accounting to measure the investment-the total value of the mineral resources at the time of initial work and the loss of ecosystem services-against the likely future stream of income from the operations. The outcome would have to be an expansion in produced and intangible capital for the choice to make sense.

## Resource Allocation

The decision about resource allocation involves revenue allocations between the private and public sector. The first consideration is whether the private sector or the public sector should be given the greater responsibility for ensuring sustainable development. While the Mining Act gives property rights for minerals to government, that right is usually leased to private operators to prospect for minerals for a fee. Current royalty fees are 5% on the gross value of gold declared by small- and medium-scale miners. Local miners also pay taxes of 2% of the value of the mineral. They also pay a tributor’s tax of 10% on the total wages of their employees. For medium-scale operators, additional deductions for land rental have to be taken into account. For large operators, fuel surcharge and taxes on net profits are additional considerations. This means that an average of 40% of the revenues from gold go to the miners. Under these allocation conditions, the miners ought to have some contribution to sustainable development.

Their impact on total wealth would depend on the amount of resources invested back into wages and retirement plans of workers, and how profits are used to meet community needs and additional private investment. Employees in the industry should be encouraged to contribute to the National Insurance Scheme where that does not occur. The risk profile of the miners would have to be taken into account in arriving at the amount of responsibility that should be given to them. In this regard, two factors emerge. One is asking local operators to increase their social responsibility to the communities where they invest and work. The other is deciding if the self-regulation of the mining industry with respect to sustainable development is a good idea.

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<sup>2</sup>Non-equity impact refers to the legitimate use of management contracts, payment of fees for the use of trademarks and patents, and payments of interest on international loans which are permitted under the investment Act of Guyana. All of these payments are treated as expenses which reduce the taxable profits of the foreign investor.

The Guyana Gold and Diamond Miners Association is calling for reduced duty on selected items imported for use in their businesses. It is not clear how much extracted natural resources go undeclared, but if the opportunity cost of the duty free concessions are lower than the marginal revenue from the additional gold declared, then granting timebound and clearly justifiable concessions could lead to higher impact on human and built capital from additionally declared gold. Where foreign investment is involved, the value of total wealth could be affected by non-equity impact on declared profits.

## **Private and Public Goods**

It should be kept in mind that some goods and services needed in the mining districts are private while others are considered public goods. In the case of public goods, some responsibility for providing the goods and services should be given to the community.

## **Public-Private Partnership**

The deferral of the production of goods and services to the government does not necessarily lead to efficiency. The unique conditions under which mineral extraction takes place make investing in public goods and services in the mining areas irrational even for the government.<sup>3</sup> In that and similar instances, the use of the public-private partnership model could be considered in meeting the economic, social and security needs of the community if increases in tangible and intangible capital are to occur.

## **Distribution of Resources**

The distribution of the resources depends on the priorities of the government, such as health, human services and education. It should be kept in mind that the royalties collected by the government do not go into the Consolidated Fund. Use of the Consolidated Fund ensures that revenues received for the public are available for their benefit. This objective is achieved through the budgetary process which is subject to parliamentary oversight.

However, the royalties are placed in a special account which is administered by the Guyana Forestry Commission in the case of forest resources and by GGMC in the case of minerals. This arrangement does not allow for full participation by the people of Guyana in decisions about the use of economic rents gained from the national patrimony. This course of action weakens national support for sustainable development under the low carbon development strategy.

## **Sovereign Wealth Funds**

One possible use of the money from royalties is for the creation of a sovereign wealth fund (SWF). Sovereign wealth funds are state-owned investments into financial assets. They are typically created to manage surplus funds that cannot be spent immediately. They have also developed as a result of the risks of “Dutch Disease” that lead to uncompetitive exchange rates and distortions in resource allocations. Windfall revenues could be misused and mismanaged, something that is associated with the resource curse. They are stabilization funds which are used to shield public money from economic shocks. Commodity prices tend to fluctuate and a fund which could convert nonrenewable resources into wealth that can be passed down through the generations is a practical response to the resource curse. In addition, allocations from the mining sector should also address the human capital development of the country and the needs of those who do not live in the forest.

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<sup>3</sup>For instance, forested areas in which mining takes place often do not permit road access and/or lack navigable rivers, such that forests cut during mining activity have no economic value as they cannot economically reach markets. Delivery of goods and services are also uneconomical under these conditions, yet the populations require these and other investments.

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This policy brief has been the result of much feedback from a wide range of stakeholders who have an interest or stake in the extractive industry in Guyana. We thank the Guyana Gold and Diamond Miners Association for its advice and support in its preparation.

A number of solutions are proposed. They include those for which there has been great agreement, or where there is sufficiently strong evidence to support them. Consensus leads to sustainable change. We therefore hope that this document will engender consensus and shape responsive public policy through informing evidence-based discussion especially within civil society.