

## **1.0 Overview of IDB Invest Scope of Review**

BSI has an annual crushing capacity of 1.3 million tons of sugarcane, with an average daily milling throughput of 6,800 tons. The mill is in Tower Hill, Orange Walk District, and receives sugarcane from more than 5,000 independent cane suppliers, of which some 1,000 are women. Ninety per cent of farmers are small holders with farm sizes less than 8 ha, of which 35% are less than 2 ha. BSI produces enough sugar to meet the demand of the domestic sugar market, with the balance exported as raw and food-grade sugar products to refineries in the United Kingdom, United States, Canada and CARICOM. Sugar accounts for 60% of Belize's agricultural exports. BSI also owns and operates a 31.5 MW cogeneration energy power plant (Belcogen) which powers the sugar operations and exports to the national public grid, providing 15% of the country needs (70GWh), increasing Belize's energy security. The country is heavily reliant on imported energy.

BSI agricultural operations and sugar milling facilities are certified by SQF Kosher, Fair Trade, and ProTerra. The latter standard covers all the important challenges relating to large-scale production of agricultural commodities along the whole value chain. It is applicable for all agricultural commodities worldwide, providing compliance with environmental and social criteria as well as Health and Safety Regulations. It also covers key components such as protection of high conservation value areas, protection of children, and of the rights of communities, indigenous people, and small holders. The company is currently exploring pursuing Bonsucro certification.

Review of the company consisted of an on-site visit to assess the company's operations and to review information submitted by the company on environmental and social (E&S) management and presentations about the company's actual and planned business activities. In company's direct operations, cane harvest is over 95 percent manual cutting and harvested after burning, with corresponding OHS risks in the workforce associated with manual cutting (for example cuts due to use of machetes, dehydration during field work and potential occurrence of Chronic kidney disease/CKD). SEG staff interviewed key senior managerial staff and operational staff. In addition, SEG met with staff from the Ministry of Agriculture, and members of the farmer supplier's associations.

IDB Invest's DD reviewed environmental and social management plans for the Project, and gaps between these plans and the IDB Invest Sustainability Policy requirements were identified. Where necessary, corrective measures intended to close these gaps within a reasonable timeframe, are summarized in the paragraphs that follow and in the agreed Environmental and Social Action Plan (ESAP) disclosed in this review summary. Through implementation of these management plans and the ESAP, the Project is expected to be designed and operated in accordance with Performance Standards objectives.

## **2.0 Environmental and Social Categorization and Rationale**

This investment is classified as a Category B project in accordance with IDB Invest Policy on Environment and Social (E&S) Sustainability. Key E&S issues and risks associated with the project include: (i) functionality of the company's E&S management and monitoring systems, (ii) management of operational health and safety (OHS) programs; (iii) Prevention of Chronic Kidney Disease (CKD) for field workers; (iv) emission to the air and effluent quality discharged to a surface water body; (v) Stakeholder engagement, management system procedures to ensure traffic safety.

## **3.0 Environmental and Social Context**

The environmental and social DD indicates that the investment will have impacts which must be managed in a manner consistent with the following Performance Standards (PS).

PS1: Assessment and Management of Environmental and Social Risks and Impacts

PS2: Labour and Working Conditions

PS3: Resource Efficiency and Pollution Prevention

PS4: Community Health, Safety and Security

PS8: Cultural Heritage

PS5: Land Acquisition and Involuntary Resettlement and PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources are not applicable, since no land acquisition is involved, and the operations are not near critical habitats. PS 7: Indigenous Peoples is not relevant as there are no IPs in the areas where BSI operations are located and there are no assets or lands negatively impacting indigenous peoples. If any of these PS's become applicable, BSI will promptly inform IDB Invest.

## **4.0 Environmental Risks and Impacts and Proposed Mitigation and Compensation Measures**

### **4.1 Assessment and Management of Environmental and Social Risks and Impacts**

BSI's management system includes management plans that establish strategies to minimize E&S risks and impacts. The BSI staff and IDB Invest conducted a joint self and independent assessment of the nine elements of the Corporate Environmental and Social Management System (ESMS) of the company as defined in PS1. The average assessment reveals a medium to high degree of ESMS implementation, yet, requiring an ESMS improvement plan.

**Policy:** BSI policy is in alignment with the 2012 Performance Standards and IDB Invest Sustainability Policy. BSI follows an Ethical Sourcing Policy and a Supplier Code of Conduct. A Code of Ethics and Business Conduct has been made operational that applies to all employees, officers and directors of ASR Group worldwide, as well as contracted personnel, agents and suppliers. The "Code" supplements the Policy indicating the company commitments to external stakeholders.

**Management Programmes:** The company has a range of standard operating procedures and relies on certifications (Proterra, Fairtrade) to manage environmental and social risks in the supply chain. EHS is mainstreamed throughout the operations at BSI.

**Identification of Risks and Impacts:** The company has responsibility at a corporate level to adapt programmes that will make operations environmentally friendly (reduce water usage, reduce generation of waste, improve green energy generation, etc.). The company will update its corporate risk management process to: (a) develop risk assessment procedures to consider the gender composite of its workforce; b) update its risk assessment for identifying communities that may potentially be affected by transport of sugar cane lorries and, c) incorporate a risk evaluation procedure to measure risks of use of government force.

**Organization Capacity and Competency:** BSI has a good environmental and social department furnished with qualified staff. The staff includes an EHS regional Manager, EHS Coordinator, EHS Coordinator assistant, EHS Supervisor and a Communications & Government Affairs Officer.

Globally, ASR has a Corporate Director of Health and Safety, Environmental Compliance, Sustainability, Security and a Vice President of Social Corporate Responsibility and a Senior Director of Environmental, Health and Safety, and Security. In addition, has appointed a Cane Farmer Relations Manager that oversees company relations with farmer associations and the

suppliers of BSI.

**Emergency Preparedness and Response:** Includes injury at work, sickness, natural disaster and fire. The company will update its corporate emergency preparedness and response management system procedures to engage farmer organizations and its communities in emergency planning; and will implement a procedure for regular review of the training programmes to staff on Emergency Preparedness and Response.

**Stakeholder Engagement:** To further prevent negative impacts to communities, the company will enhance its existing website to keep external parties informed and include the name of the contact person at BSI for accessing the external grievance mechanism.

**Monitoring and Review:** Weekly audits take place to monitor EHS compliance, an Action Plan is put in place in the event of a non-conformance. The company has a sustainability platform; this database is fed by different departments to determine the sustainability status of the operations. A sustainability report is prepared and shared to use as a guide in selecting a program that would help in making operations more sustainable.

## **4.2 Labour and Working Conditions and Management of Worker Relationship**

BSI has adopted a Human Resources (HR) Policy that has several management procedures available for administrative and human resources affairs that ensure full respect of Belize's regulatory labour requirements. The HR policy covers terms of employment, such as wages and benefits, hours of work, overtime compensation, maternity, vacation, non-discrimination, sexual/moral harassment, hiring period, compensation, promotions, salary increases, and termination of contract procedures. The policy is effectively communicated to all employees during recruitment. Workers are associated in the Belize Worker's Union and the most recent collective agreement was reached July 2018 till year 2022. BSI currently has 657 direct employees. Women represent four percent of the direct workforce. Around 260 workers in the mill and power plant are contracted labour (7 are women). Four cane cutting contractors employ approximately 120 Cutters as temporary labour. Annual inspection on labor, occupational health and safety matters is done by the Belize Labor Department.

**Child labour:** The company has a policy statement against the use of both child labour and forced labour at its operations, contractors and its sugar cane suppliers. In 2018, ASR signed a Memorandum of Understanding for joint collaboration with Fairtrade International and the Coordinadora Latinamericana y del Caribe de Pequeños Productores de Comercio Justo (CLAC) to address vulnerabilities of children, youth and adults in labor situations and enable increased protection in the sugar cane industry. Follow up of sustainability at sugar cane suppliers is done through FairTrade certification of produce.

**Chronic Kidney Disease (CKD):** Health research identifies CKD as a Mesoamerican nephropathy present in Southern Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama. The CDC Global Health Report section on Belize regards Chronic Kidney Disease as one of the 10 causes of death in the country. In Belize, the report indicates that the incidence of CKD appears as being higher in the sugarcane growing regions where BSI is located. The disease is found in a wide range of sectors (mining, ports, construction, agriculture), as well as in adults and children. CKD is most prevalent amongst those working outdoors doing strenuous manual labor. Typically affected individuals are unaware of preventive health measures to stop disease progression, such as good hydration when working exposed to heat. CKD incidence is likely to increase with climate change and raising of temperatures. There are no government-enforced pre-employment health examinations, and CKD has not been assessed at BSI workers, nor at suppliers. While BSI is not aware of any cases of CKD in its own operations, but in line with the previously

mentioned, BSI will develop and implement an Integrated Programme for Prevention of Chronic Kidney Disease (CKD), to be included in its ESMS, for sugarcane cutters and field workers. The main element of the CKD Programme will be daily hydration of each field worker, coupled with other elements. The task shall include development of training materials to raise prevention awareness during induction and field operations. The implementation will firstly take place at BSI for cane cutters and all employees under its control. Through a phase approach BSI will pass on the CKD prevention programme elements to farmer organization' governance, sharing training materials, procedures, etc., that will help farmer organizations communicate internally the prevention programme to its constituencies for further implementation. Procedures shall indicate that awareness training will be increased by farmer organizations governance if some of their members are delaying implementation of the CKD Programme. The requirements of the CKD Programme will be disseminated for implementation to all contractors managing cutters and field workers.

Occupational Health and Safety (OHS): The company follows the hierarchy of control against hazards. Firstly, through elimination or isolation, substitution, engineering control, administrative controls and PPE. Before a job starts, a risk assessment is done along with the supervisor, employees and EHS. This assessment is key to identify all possible hazards. The existing and the additional control measures are identified to reduce the possibility of injury. The due diligence review of IDB Invest found that the OHS management at BSI has room for improvement, as workers in the expansion of the mill were not following safety procedures. The company will conduct an OHS risk assessment in the mill and provide a corrective action plan of the risks identified in the order of priority. The company will submit a final report to IDB Invest and include a certification from BSI OHS task manager that all observed deficiencies have been corrected.

Life Fire and Safety (L&FS): The security department conducts annual drills in the month of September and works along with the EHS department to complete and update the roster of personnel, the assembly point and evacuation routes. The drills are recorded, and any gaps found are addressed.

Training: Each year, BSI has a monthly scheduled training programme for employees and suppliers to ensure skills needed for their work responsibilities, which includes EHS issues and protection of workers involved in hazardous work environments, build in-house capacity for crop management, agrochemical use, use of Personal Protective Equipment, recording emissions, waste separation to all employees, chemical handling and proper storage, among others. The company established a cane relations program in 2014 that manages training by needs and production improvement projects. BSI has mainstreamed EHS matters through the publication of a full Best Cane Farming Practices manual and seeking funding for the Sugar Industry Research and Development Institute (SIRDI) to conduct Farmer Field Schools. Further training is done on recording emissions to member directly responsible of inputting data, waste separation to all employees, chemical handling and proper storage.

Supply Chain: BSI follows the ASR's Ethical Sourcing Policy (ESP) and supply chain guidelines described in the Supply Chain Services Policies and Procedures. Additionally, BSI ensures that Contractors, through a vendor forms, adhere to strict EHS policies and procedures. BSI operations are 90% dependent on out grower sugar cane supply. The company has annual Pro Terra audits and has recently become certified against Pro Terra Standards. BSI and its cane supply are Fairtrade Certified and currently exploring the option of Bonsucro Certification. To benefit from Fairtrade premiums on sales of their sugar on Fairtrade terms, the Small Producer Organizations (SPOs) and their members must comply with the Fairtrade Standard, which ensures that they run their SPOs and their farms sustainably, ethically, transparently and democratically. Fairtrade certified organizations are audited every year to verify compliance. Fairtrade certified producer groups in Belize used Fairtrade Premium Funds to improve awareness of health and safety in the cane field

and at home. They arranged free healthcare, including dentistry and audiology to more than 4,000 children and adults in the local community. And, run first-aid training and distributed first-aid kits to be taken out to the cane fields during the harvest, so that if someone is injured cutting cane, they can be treated quickly. Training was also given to farmer group leaders on the proper storage and handling of pesticides, best practice field management and pest control.

### **4.3 Resource Efficiency and Pollution Prevention**

The production system is rain fed monoculture with use of mineral fertilizers and the deployment of manual and chemical weed control practices. The dominant sugarcane variety grown in northern Belize is the Barbados - B79474 variety. Planting is carried out in June-July and the crop is harvested 11 months later. Under the current practice yields are low with this variety and farmers are experimenting with new varieties, changes in planting season and extended harvesting dates to improve yields. Best practice for high yields requires about 16% or 10,000 acres of cane to be replanted annually, however only 3,000 acres are replanted annually, resulting in over-aged ratoon yielding less sugar content. In addition to low productivity the industry is constrained by inadequate road network in the "Sugar Belt" which increases transportation costs for delivery to the factory, plus no access for deep sea vessels in the proximity of the factory. Sugar and molasses must be transported from the factory by barges 122 miles to a deep-water anchorage offshore from the port of Belize City, resulting in unduly high handling and freight costs. Inadequate drainage infrastructure was evident after an extended rainy season in 2013 and subsequent flooding in the sugar region delayed the start-up of the harvesting season. A project being undertaken by the Caribbean Development Bank (CDB) and the Food and Agriculture Organization (FAO) is developing an investment plan for irrigation and drainage and aims to establish a strategic pilot drainage project in sugarcane.

**Resource Efficiency:** BSI pays attention to resource efficiency through continuous improvement of their processes and selection of equipment and energy source. The Company cogenerates energy which meets BSI needs for 10 months of the year. This occurs during the milling season and goes on some months after. Only for 2 months, the company purchases energy from the grid. This is done to perform routine maintenance on the boilers and turbines. BSI makes efficient use of bagasse as feedstock in two boilers (3.20 tons of bagasse per MWh) to generate steam and electric power for the mill. Bagasse availability is not an issue for BSI given the absence of a market for any bagasse surplus.

**Stack Emissions:** The two boilers installed at Belcogen are a maximum of 90 mt per hour (tph) at 642421.21 kg/m<sup>2</sup> (6.3 MPa gauge pressure). The boilers at BELCOGEN fall below 200MW of power. Recent third-party Stack Emission Testing shows non-compliance with national limits for particulate matter (445.7 mg/m<sup>3</sup> above national limit of 350 mg/m<sup>3</sup>). This stack gas concentration of particulate matter also exceeds the WBG guideline limit of 50mg/Nm<sup>3</sup>. In order for IDB Invest to evaluate BSI emissions and impacts and to establish an acceptable stack emissions level, ambient air particulate levels, and ensure that these are adequately protective of public health, during the forthcoming sugarcane harvest season, BSI will conduct particulate stack emissions measurements, will compare to WBG General EHS Guidelines for stack emissions concentrations (particulate matter limit (PM<sub>10</sub>) of 50 mg/Nm<sup>3</sup>; NO<sub>x</sub> of 460 mg/Nm<sup>3</sup>; SO<sub>x</sub> of 2000 mg/Nm<sup>3</sup>), and will submit a report to IDB Invest. If measurements exceed guideline limits, BSI will conduct dispersion modeling scenarios of stack emissions of particulate (PM<sub>10</sub>) considering varying stack emissions scenarios of 50, 100, 150, 200, 250 and 350 mg/Nm<sup>3</sup>. Reports and associated results to be presented to IDB Invest shall illustrate in tables and drawings the concentration of PM<sub>10</sub>, in ambient air in µg/m<sup>3</sup> at sensitive receptors downwind of the boiler stack (provide the Wind Rose showing the predominant direction of the wind throughout the year). The resulting isopleths must illustrate the on-the-ground concentrations in µg/m<sup>3</sup> of PM<sub>10</sub>, in ambient air throughout the year at these receptors. Sensitive receptors shall

include residential housing, schools, health care facilities and the like. All these must be illustrated on dispersion maps.

If dispersion analysis shows impacts to sensitive receptors, BSI will agree with IDB Invest a plan and schedule to apply corrective measures and ensure that these emissions meet national regulations and WBG EHS guideline limits. For each guideline limit, the company will use the most stringent. Plan for compliance not to exceed 48 months.

**Greenhouse Gases (GHG):** Cogeneration and energy efficiencies reduce the GHG emissions during operations. Belcogen has an Electrostatic Precipitation System. The Monitoring of point source air emissions are reviewed by Government environmental supervisory authorities each semester. The company has implemented a Management Systems procedure for Emissions Inventory of Greenhouse Gases and will report annually to IDB INVEST. The GHG emissions baseline will be year 2012.

**Water:** The Belize agriculture department has taken key steps in decreasing the amount of water abstracted from underground aquifers. At BSI, rainwater is channeled through drainage system allowing the water to settle along the cane fields keeping the ground moist. The Company is active in water conservation, water is recycled during the sugar milling and processing contributing to an efficient “zero balance” of resource use. The Tower Hill mill has water cooling facilities including a cooling tower, overhead cooling tank and the remaining water is returned to the river. Water use by BSI does not affect use of the resource by communities. Mean rainfall is circa 1400mm p.a. ensuring sustainable groundwater replenishment. There are three licenses for groundwater and eight licenses for surface water pending to be granted by the GOBelize. Currently the company has three wells, not used continuously throughout the year. Flow meters were installed in the wells and a log is kept and updated monthly. The abstraction license for this year has not yet been issued to the company yet is in the final stage of approval. BSI submits monthly reports of water volume usage to Hydrology Unit to the Ministry of Natural Resources.

**Effluent Treatment:** Effluent from bagasse and filter press mud goes through the plant waste water treatment system. Wastewater from the sugar mill operation is first treated using four settlement ponds and one buffer pond. Effluent is periodically discharged into the main drain mixing with warm water used for the vacuum system on the evaporators. The treated water then passes through a cooling pond and into the New River. BSI will conduct a full assessment of effluent quality at the point of discharge of the ponds and compare against regulatory standards for Belize and applicable WBG EHS guideline limits (BOD 50mg/l; COD 250 mg/l; pH 6-9; Total nitrogen 10 mg/l; Total Phosphorus 2 mg/l; Oil and grease 10 mg/l; Total suspended solids 50 mg/l; Temperature increase <3C; Total coliform bacteria MPN/100ml, 400). If the wastewater assessment indicates no compliance, BSI will implement a Clean Production Audit with emphasis in water recycling, reduction of BOD, and improving effluent quality at point of discharge into the river. The Clean Production Audit will help BSI develop and implement a plan and schedule to present to IDB Invest. The plan shall ensure that the effluent quality meets national regulations and WBG EHS guideline limits. For each guideline limit, the company will use the most stringent. Plan timeline for compliance not to exceed 48 months.

**Waste Management:** BSI manages solid waste in line with best practices (reuse, recycling, treatment, disposal, and monitoring) to reduce environmental impact. Workers handling waste are trained on proper waste handling, including avoiding waste burning. Mill mud (solid organic waste) is applied to the fields as organic fertilizer. As per national requirements, BSI has a landfill and uses a government authorized waste management contractor. Suppliers of pesticide materials also manage disposal of empty pesticide containers.

**Hazardous materials:** The hazardous materials present at BSI consist of relatively small volume of cleaners, oil, light tubes, and packing materials. All these are handled separately and labeled in accordance with acceptable practices.

**Integrated Pest Management:** BSI has implemented integrated pest management (IPM) for the control of the frog hopper (*Aeneolomia* spp.) which can account for 30% reduction in yield. Several control components are combined in the IPM. These include nymph and adult population monitoring, cultural practices, mechanical control, biological control through application of *Metarhizium anisopliae* to maintain nymph and adult population below thresholds, and chemical control only as last resource. The company does not use active chemical ingredients listed under Class Ia (Extremely Hazardous) and Ib (Highly Hazardous), based on the World Health Organization (WHO) Classification of Pesticides by Hazards. Some WHO Class II pesticides are included in the IPM system and in weed control, and adequate PPE based upon MSDS is provided to employees. Documentary evidence is available of the training of employees handling pesticides specifically in the use of adequate personal protection which is fully integrated into the EHS manual procedures. Annual medical checkups are conducted to employees handling pesticides.

#### **4.4 Community Health, Safety and Security**

Communities are not immediate neighbors and located some 2 km away from the limits of Company field and processing operations. Company production operations do not have significant adverse impacts on communities in its direct area of influence. Nevertheless, there is several existing household's operations in rural areas. An impact may include traffic of heavy vehicles transporting sugar cane in nearby routes. To minimize transport health and safety risks to local communities, BSI will develop and implement ESMS procedures and training through awareness in all means possible to ensure transport minimizes community health and safety risks, including accident prevention measures, such as appropriate speed limits and safe driving practices, and provision of this procedure in transport contractual arrangements. BSI will demonstrate full implementation of the procedure and update in the BSI Website.

**Community Grievance Mechanism:** Any concerns from the communities are being addressed formally on per case basis. The company has implemented a community hotline, Facebook page and website. BSI will further expand the Community Grievance Mechanism procedure to communicate in the BSI Website how individuals may register grievances publicly or anonymously with BSI. The company will categorize grievance events and will report to IDB Invest in the Annual Report.

**Security Personnel:** The security personnel at BSI are not armed. In addition to current procedure, all security personnel must have a background check on file that shows no record of human rights abuse. BSI will provide to IDB Invest documentary certification from the company legal department regarding the event in 2009 involving the farmer community and government security forces (which took place prior to ASR involvement in Belize). Such certification to include that there remains no contested or uncontested settlement of claims pending.

#### **4.5 Cultural Heritage**

The soils around Orange Walk and Corozal are some of the most fertile in Belize and therefore attracted ancient settlements who built Mayan structures. The archaeological sites in Northern Belize offer some important discoveries of archaeological Maya heritage (Lamani, Santa Rita, Nohmul, others). There is a chance that cultural heritage could be found in the project area. In addition to complying with applicable national law on the protection of natural heritage, the company will develop an ESMS Chance Find Procedure as described in PS8, which will be applied if cultural heritage is discovered.

## 5.0 Local Access of Project Documentation

For inquiries, including environmental and social issues related to this investment, please contact the client:

-Mrs. Olivia Avilez, Cane Farmer Relations Manager. Belize Sugar Industries Limited. Phone: +501 322-2150. Email: [Olivia.Avilez@asr-group.com](mailto:Olivia.Avilez@asr-group.com)

-Mr. William Neal, Government Affairs and Communications Officer. Belize Sugar Industries Limited. Phone: +501 322-2150. Email: [William.Neal@asr-group.com](mailto:William.Neal@asr-group.com)

-For inquiries and comments to IDB Invest related to this investment,

Contact: IDB Invest Communications Group. Email: [requestinformation@idbinvest.org](mailto:requestinformation@idbinvest.org)

-As a last resort, project affected communities have access to the IDB Invest Independent Consultation and Investigation Mechanism.

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