

ST10 - The Bauxite Community Development Program: A Blueprint for Community Engagement and Sustainable Mining

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Abstract

The bauxite mining industry in Jamaica has been a significant source of revenue for the country for decades, with large mining companies generating profits from the extraction of aluminium ore. Despite this, some surrounding communities have not benefited enough from these profits, though they experience the environmental and social impacts from mining operations. As a result, the relationship between the communities and the companies was often very acrimonious, a situation that has persisted for decades. To address these issues, the Bauxite Community Development Program (BCDP) was developed to reinvest a portion of the earnings from bauxite mining in Jamaica back into surrounding communities to fund sustainable agricultural projects for rural farmers, infrastructural development, training and capacity building and also to support small businesses. Another very important role of the BCDP was to bridge the divide between residents on one end and the bauxite companies on the other, thereby providing a space for dialogue, mediation and harmony between both. This paper will explain the framework under which the BCDP operates and the mechanisms utilized to bridge the gap between private mining companies and communities. The need for the BCDP is particularly poignant given Jamaica's unique situation where bauxite mining often takes place in very close proximity to residential spaces. In outlining the functioning, management and structure of the BCDP, several projects will be highlighted as successful case studies within the BCDP apparatus. These projects, mostly located in rural spaces, can be used as a blueprint (in part or in whole) for other jurisdictions to adopt, especially in light of the increased focus on sustainable development globally amid increased scrutiny of the mining industry. Overall, the BCDP therefore represents a promising step towards creating a more equitable and sustainable mining industry in Jamaica.

Keywords: Bauxite Community Development Programme (BCDP), Sustainable mining, Agriculture, Community projects.

1. Introduction

The island of Jamaica, in the Caribbean Sea, is a formation primarily composed of limestone, with an approximate size of 10 000 km². With a population of roughly 2.8 million as at 2018, the most recent year for which official data exist, its lifeline is intricately linked to a few industries, including tourism, agriculture and bauxite. Of the total population, almost 700 000 people reside in and around its capital Kingston and by extension St. Andrew. The remaining 2.1 million are scattered throughout the remaining 9 500 km² across 12 parishes [1] outside of Kingston and St. Andrew. The parishes with the highest population are: St. Catherine, Clarendon, Manchester, St. James, St. Elizabeth and St. Ann. Incidentally, these parishes contain almost all of Jamaica's bauxite deposits and five of the six parishes listed above have active mining or other bauxite-related activities. The bauxite mining activities in these parishes are almost exclusively concentrated in areas where the terrain is conducive to intensive mining activities; the rub is that these areas are also the spaces most conducive to settlement and residential uses. Bauxite mining in Jamaica has therefore always competed (for want of a better term) with other critical industries, chief among them being housing and agriculture, as no community can last without the means to

feed itself. The very discovery of the ore itself stemmed from the competition that characterizes its existence.

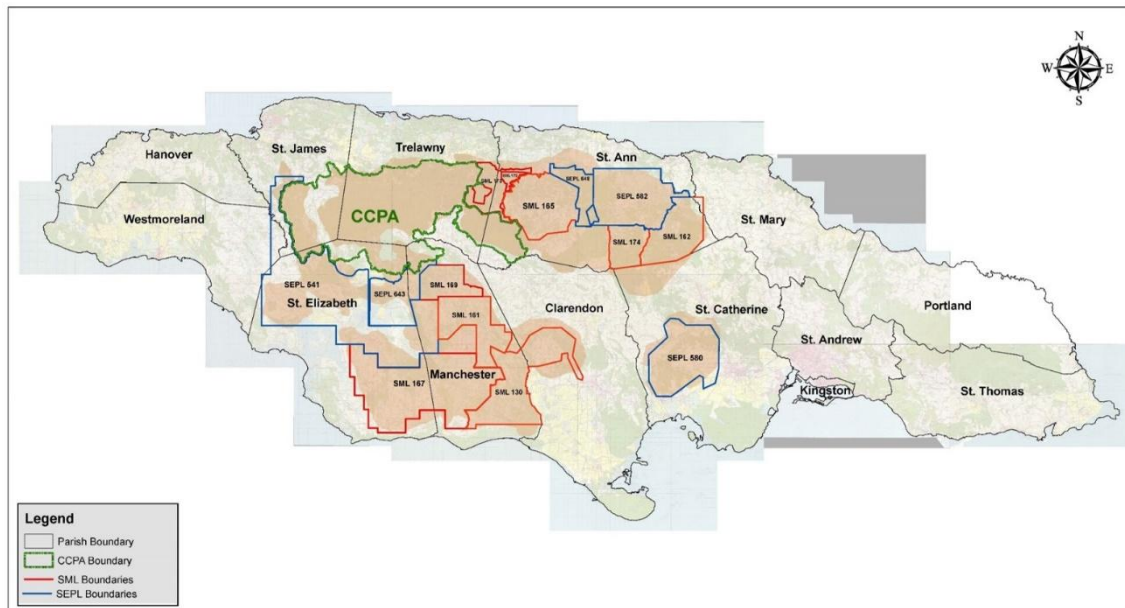


Figure 1. Location of mining activities in Jamaica.

1.1 History of Bauxite Mining in Jamaica

Bauxite in Jamaica has its beginnings in the Parish of St. Ann in a hamlet called Lydford where, in the 1930s, a farmer by the name of Alfred D’Costa was unsuccessfully trying to cultivate a special kind of grass called Wynne [2]. Annoyed at his failure, he asked the Department of Agriculture at the time to test the soil, wondering if there was any connection with the soils’ deep red colour and his futile exercise. Chemist R. F. Innes would take on the task and by 1952, it was concluded that the soil contained bauxite in quantities that made it commercially viable. Over the next 7 decades, the country would invest tremendous resources into the bauxite industry. At a point in the 1950s, the verified global bauxite reserve estimate was close to 1.5 billion tonnes, of which Jamaica commanded a sizeable 20 % [2]. By the 1970s, bauxite had displaced sugar and banana as Jamaica’s highest earner and, in 1972, it contributed to Jamaica’s highest rate of economic growth, at just over 18 % [3].

These elysian times would not last, however, and the cracks began to appear as early as the 1990s as Jamaica’s market share began to suffer from increased competition on the global market. The arrival of countries such as China, Indonesia and Guinea as competitors on the global market would push Jamaica to 7th in terms of total bauxite production [4] with a market share of just under 4 %.

These Elysian times were short lived and cracks began to appear a few decades after as Jamaica’s market share began to suffer from increased competition on the global market particularly from Australia and Brazil. The effects of this was exacerbated by the imposition of the bauxite production levy in 1974 [4]. Though the industry still contributed the lion’s share of Jamaica’s GDP, the slippage on the global landscape was steady and constant. The arrival of countries such as China, Indonesia and Guinea as competitors on the global market would push Jamaica to 7th in terms of total bauxite production [5] with a market share of just under 4%.

1.2 Competition and the Community

The effects of the competition abroad was exacerbated by competition at home. As returns from the industry fell and the industry began to shrink, the number of people employed by bauxite companies also dwindled. By the end of the 1990s, Jamaica's economy, though still being carried by bauxite in many respects, desperately needed diversification, having been badly hit by the global economic crises of the 1980s and late 1990s. Agriculture would once again start to dominate conversations and by 1998 the Bank of Jamaica (BOJ) predicated economic growth of just 3 %, of which 1.5 % would be contributed by the Agricultural sector [6].

With this ever increasing demand, coupled with reduced benefits flowing to the citizens from the bauxite industry, clashes between communities and the bauxite companies soon became the norm as residents clamored to get a greater slice of what seemed an ever-shrinking pie [7]. The society as a whole was no longer willing to accept the negative effects of mining activities with the miniscule benefits now trickling down to them. These conditions were accentuated by the high inflation and interest rate situation that permeated the Jamaican economic landscape in the mid to late 1990s, which drastically eroded standard of living for ordinary Jamaicans. As bauxite companies started to venture closer and closer to communities in order to access more of the critical mineral, it was clear that something had to be done to manage the relationship between the communities on one hand and the private companies on the other, certainly if the industry was to survive.

The image of holes left in the ground by bauxite operations was now a disturbing symbol of a one way relationship with an industry that seemed to always take but never give. At the time, the economic gains from the bauxite industry was still very obvious, but the government had to find a way to bring those gains closer to the people. Additionally, the need arose to provide a space for constructive two-way dialogue between the communities and the companies, lest that dialogue would continue to be had in the streets with placards and blocked roads. It was as a result of these considerations that the government through the Jamaica Bauxite Institute (JBI) created the Bauxite Community Development Programme (BCDP).

2. The Bauxite Community Development Programme

Launched in 1996 on the basis of two cabinet decisions (246/MAM-19/96 and 272/MAM-22/96), the BCDP is administered by the JBI and is responsible, amongst other things, for providing funding and technical support for the development and implementation of sustainable programs in communities impacted by bauxite mining and alumina processing operations. The political directorate (Members of Parliament) were the driving force behind the program's creation. It was created against the backdrop of relatively low levels of infrastructural and social development within the communities where bauxite activities took place. This was in stark contrast to the high revenues realized from the industry over the years, an industry that represents one of the largest capital investments in the country [8]. The BCDP was therefore formed with the mantra "Life After Bauxite", espousing the need for sustainable development beyond the lifecycle of the bauxite industry. Cabinet subsequently gave approval for its creation with an initial funding support of JMD 30M (+/-USD 1M) in 1996, with the main objectives being to:

- Re-invest earnings from the bauxite/alumina industry into communities affected by mining operations through the implementation of projects for sustainable income and employment generation;
- Improve social and physical infrastructure in communities affected by the activities of the bauxite/alumina industry;

- Provide a space for the ventilation and resolution of all community issues connected to bauxite mining and its related activities.

The funding for the program would thereafter be sustained by a bauxite production levy collected from the bauxite companies and allocated to the program via the Capital Development Fund (CDF). The BCDP is currently in its seventh (VII) phase which was launched officially in September, 2020 with funding support of JMD 300M which was ±USD 2M This increase in funding is symbolic of the positive work the program has been doing in achieving its objectives.

Each phase of the BCDP lasts approximately 3-4 years or until the funds allocated have been depleted, at which time a new submission is made to Cabinet to begin another phase. The funding for the BCDP is allocated from the Capital Development Fund (CDF) to which all bauxite levy payments are made. As of March 2023, the BCDP has invested close to JMD 700 in projects across the parishes of Manchester, St. Ann, St. Catherine, St. Elizabeth and Clarendon, and has done valuable work in repairing the relationship between bauxite companies and the communities in which they operate.

This paper will outline the structure and operations of the BCDP, using relevant case studies to highlight both its effectiveness as well as areas that need improvement particularly as the face of the industry in Jamaica changes.

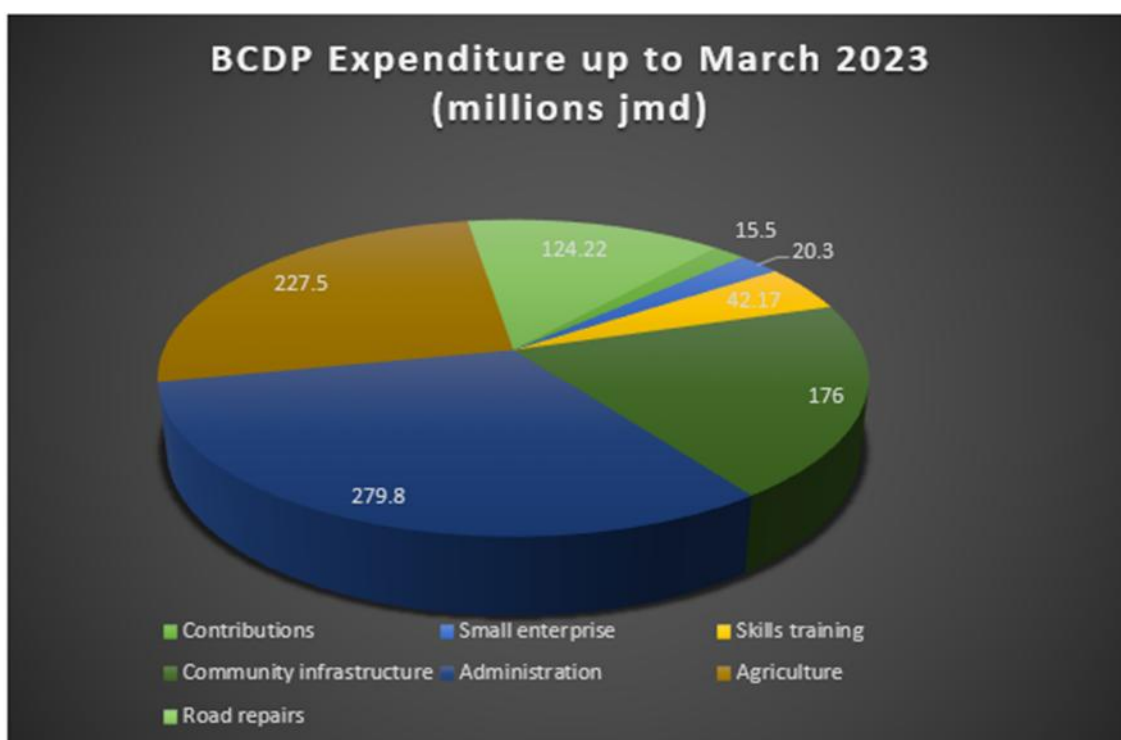


Figure 2. Bauxite Community Development Programme (BCDP) expenditure by category 1996-2023.

2.1 BCDP Structure

The BCDP is administered by, but operationally separate from the Jamaica Bauxite Institute. The program therefore has its own staff, dedicated solely to the execution of the program with only one member being on the formal establishment of the JBI: the Project Manager. The staff are hired and paid from the BCDP account, which is separate from that of the JBI. This arrangement, lends itself to greater efficiency in the delivery and monitoring of projects as well as in the

interactions with community representatives as will be outlined later in this paper. The organizational structure of the BCDP is shown below:



Figure 3. BCDP structure and process flow.

2.1.1 Advisory Committee

As can be seen in the figure above, the ultimate decision-making body of the BCDP is the Advisory Committee. As an arm of the JBI board, it is made up primarily of members of the Board of Directors at the JBI. The Advisory Board hears and approves all project spending in accordance with the policy directives of the Board of Directors, guided by the recommendations of the BCDP team. The council agrees on the budget to be spent for the year and generally ensures that spending is done in areas of maximum impact. Another important role of the Council is to ratify the focus areas for each phase of the BCDP. The current phase of the program (Phase VII) focuses on Education, Health and Economic Empowerment. These areas were selected with consideration for the needs created by the recent Covid-19 pandemic and the debilitating impact it had in these sectors, particularly in the rural areas where bauxite mining activities take place.

2.1.2 Project Manager

The Project Manager is responsible for overseeing the day-to-day operations of the BCDP. The Manager drafts the yearly budget and ensures that the policy directives of the Advisory Council are carried out in the most efficient manner. It is through the Project manager that projects and recommendations are generally carried to the Advisory Council. Once projects are approved, the Manager is responsible for coordinating the monitoring of these projects to ensure that the value for money (VFM) imperative is realized.

2.1.3 Project Coordinator

The Project Coordinator's role is to organize all activities on the ground. This includes organizing interactions with Community Councils, on-the-ground project monitoring, as well as the active engagement of potential partners towards project funding and execution. The Project Coordinator reports directly to the Project manager but also has reporting responsibilities to the Advisory Board.

2.1.4 Research and Development Specialist

The role of the R&D Specialist is to conduct all necessary research to guide project implementation. This is particularly important for projects that are agricultural in nature, as due diligence must be taken to ensure the viability of certain crops on bauxitic soil. The work of the R&D specialist is also very critical for the development of the agricultural sector nationally, as it generally involves studies into areas where there is a dearth of information and knowledge. An example of this can be found in the role the BCDP played in the research on the viability of growing high-quality Castor beans on bauxitic soil.

2.1.5 Project Officers

The Project Officers conduct all ground activities associated with the execution of the BCDP. They interact with the communities by attending regularly scheduled meetings, respond and report on points of disagreement between industry stakeholders; monitor and report on the execution of projects and recommend potential projects based on community need assessments.

2.1.6 Plant Nursery

As a part of the BCDP’s focus on agriculture, funds from the program were used to establish a Plant Nursery/Greenhouse at the Jamaica Bauxite Institute (JBI) in 2001. The Plant Nursery provides farmers with affordable seedlings to ensure agricultural sustainability. The Nursery is manned by 3 Nursery Assistants, each fully trained in sustainable greenhouse agriculture. The Nursery also operates as a commercial entity, thereby creating an additional source of revenue for the BCDP account. The Plant Nursery is a crucial part of the JBI’s contribution towards sustainability in our agricultural sector. Over the last 7 years, the JBI has grown to become one of the largest public facilitators of greenhouse technology in the region through the Rural Economic Development Initiative (REDI) which is supported by the World Bank. These greenhouses are supported by the Plant Nursery through the provision of training as well as high quality seedlings at below market price to small farmers in and around bauxite areas.

2.1.7 Support Staff

The program is also supported by an Administrative personnel who records and documents all activities of the BCDP, including the operations of the Plant Nursery.

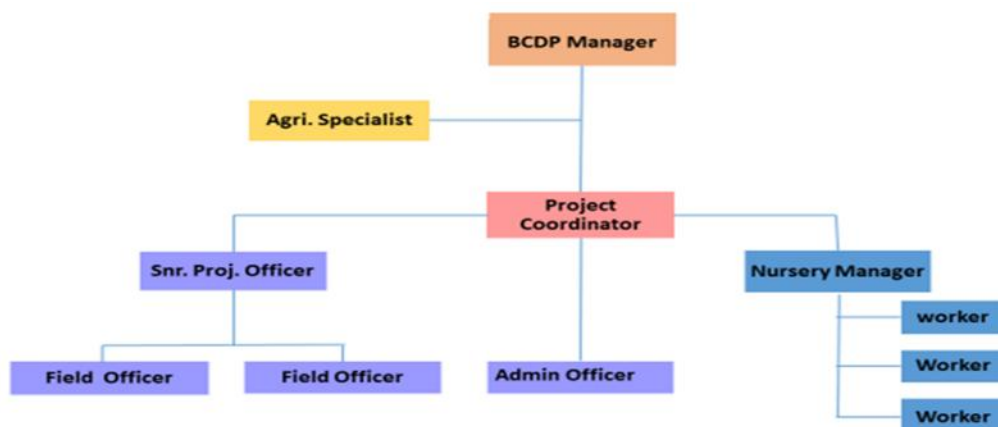


Figure 4. BCDP Organizational Chart.

Case Study: Greenhouse/Water Harvesting Project

The Problem

There are several characteristics of bauxitic soils that make farming on bauxitic soil particularly difficult. For starters, the water retention capacity of bauxitic soil is not usually enough to sustain extensive agriculture. Additionally, bauxite in Jamaica is usually found at high elevation with deep water tables. This makes it extremely difficult to access underground water for farming or other uses. The meteorological realities also pose serious challenges to farmers as these areas often suffer from very volumes of rainfall. Land availability and access for farming is also very limited as often times farmers clash with bauxite companies for access and use of these lands. In order to solve this problem, the JBI/BCDP in collaboration with the Bauxite Companies and Jamaica Social Investment Fund (JSIF) devised the Rural Economic Development Program Greenhouse/Water Harvesting project in 2014.

The Solution

The project rehabilitates mined-out pits and transforms them into catchment reservoirs with capacities of up to 2.5-3 million gallons of water. This is enough to carry a full cycle of crops.

To solve the issues with land accessibility, greenhouses are used, which occupy less space than outdoor farming, but give greater yield. There are 20 greenhouses on each site forming a cluster. The size of each greenhouse is 3000 square feet and a single farmer, who signs an agreement that outlines their responsibilities to their greenhouses as well as to the cluster. A Cluster Management Committee manages each cluster, by way of a signed agreement.

The greenhouses are guttered and piped. Run-off water from the roofs also runs into the reservoirs. Using solar energy, the water is pumped from the reservoir into holding tanks at higher elevations than the greenhouses where it is then gravity-fed to the greenhouses for irrigation purposes. Most of the mined-out areas were devoid of electricity and if there was electricity, its cost would have been exorbitantly high for the farmers. Solar energy not only provides a renewable source of energy but also one that does not eat away at the farmer's earnings.

In order for the communities to benefit from government funding, the community councils are listed as the true beneficiaries (as they are registered as benevolent societies) and it is through the council that the cluster management committee is formed and monitored. Currently, there are 8 clusters constructed at a cost of over USD 2M and plans are in place to construct 15 more clusters over the next two years.

Responsibilities were shared among several government agencies as follows:

JBI/BCDP was to provide the lining of the reservoir, the irrigation system to the storage, and the first set of plants for production. The bauxite companies were to prepare the site and water holding reservoir by reshaping the mined-out pits and reclaiming the lands in a manner suitable for its end use. Rural Agricultural Development Authority (RADA) was to deliver greenhouse training on various modules surrounding greenhouse and water management. Social Development Commission (SDC) was to assist with the group dynamics, while the farmers and councils provide sweat equity via labour and management of the houses.

The Operation

The JBI and JSIF work with the Councils and their clusters to monitor the greenhouses and ensure that all parties are sticking to the terms of their signed agreements. Terms outlined in the

agreement include a provision that the farmers are to sell the products as a unit. That is, though the cluster is made up of 20 individual farmers, the cluster operates as a single commercial entity and all farmers sell their produce through the cluster as opposed to independently. This improves marketability and allows the farmers to access larger markets thereby benefiting from the principles of collective marketing. Once the goods are sold, each farmer gets remunerated based on the value of goods that he/she added to the total output.

After the produce is sold, each farmer receives 70% of the total revenue while 30% is kept by the cluster and used to purchase inputs for the next farming cycle. This sum is also used to effect any repairs needed to the greenhouses. This 30% is therefore a sustainability fee as it ensures that the clusters are properly maintained. The clusters are supported by the bauxite companies and the Government through the Jamaica Bauxite Institute, together they form the ultimate overseeing body for the clusters.

In order to engender greater interest in agriculture, particularly sustainable agriculture, the clusters also serve as centres of instruction for students. Students in and around the area use the sites as education tools for learning purposes. This is a critical component of the programme as the aim is to attract more youth into the sector by demonstrating a more attractive agricultural product, supported by technology and renewable resources.

Phase 2 and Lessons Learned

The JBI/BCDP team assisted the JSIF with the development of Phase 2 of the project which was subsequently approved by the World Bank. A total of 17 additional water harvesting projects were submitted of which 15 were approved. The next phase of the project will not only expand its reach but also address some of the oversights from Phase 1. These include:

- a) Site selection process that is sensitive to meteorological factors (such as wind that may damage the houses) susceptibility to praedial larceny and closeness to markets
- b) Selection of the right type of beneficiaries through an intense interview, training and selection process, which will enhance the cohesion of the beneficiaries and increase productivity;
- c) Improvements in productivity monitoring of the clusters.

On his recent visit to Jamaica, Ajay Banga, President of the World Bank, praised the initiative for its approach to resolving what has been a very critical issue and doing so in a way that demonstrates that mining and agriculture can coexist [9]. Even more so, the initiative demonstrates that 'sustainable mining' is possible. Through the partnership with the government, the bauxite companies and the community, farmers in bauxite areas are benefitting in ways that never imagined before. It must also be noted that the programme does well on the inclusivity index with approximately 60% of its farmers and participants being youth and women.

3. BCDP Operationalization

The Programme has two facilities, a community project component where support is given directly towards community developmental projects and a Member of Parliament (MP) facility. Under the latter, each MP is allocated either JMD 4M or JMD 2M depending on their proximity to active bauxite operations. For those constituencies in which activity mining operations are carried out, the Member of Parliament receives JMD 4M at the beginning of every phase of the BCDP. These include spaces where there are active mining and refinery operations. If a Member of Parliament does not utilize his allocation in one phase, it is rolled over into the subsequent phase. This arrangement is of particular importance as the value of the allocation is not often enough to tackle critical issues within the constituencies, as such, MPs usually allow for rollover to use the increased allocation in order to handle higher value projects. Appreciating that the

allocation has grown insufficient, there have been calls from the MPs for it to be increased as the current value of the allocation was set 17 years ago.

3.1 Role of the Political Representatives (Members of Parliament)

The MPs submit proposals and make representation on behalf of their constituents for use of the BCDP funds. Projects are submitted and approved based on a list of set criteria, which includes the proximity to bauxite mining and processing activities and the needs identified in the community needs assessment. In order to maintain synergy within the program, MPs are required to attend the monthly meetings of the Bauxite Community Councils where they would seek consensus from the community leaders or, at the very least, notify the Community Councils of the projects being submitted for funding through the program. Unfortunately, in many instances this relationship has broken down and MPs do not attend these meetings as often as they should and in some cases, they do not attend any at all. This represents a weakness in the program that must be addressed and can also serve as an important lesson if the program is to be replicated in other jurisdictions.

3.2 Role of the Bauxite Community Councils

The formation of the joint Bauxite Community Councils was proposed by the JBI at the beginning of the program to function as the nucleus of the program's operations. They provide a forum for the amicable resolution of issues in the bauxite/alumina operating areas and also play a major role in the development of projects for BCDP funding. In order to ensure the councils longevity, all councils have a constitution and hold annual general meetings (AGMs) where their executive bodies, headed by a Chairperson, are elected and ratified.

The councils also maintain a very close working relationship with the bauxite companies and a representative from the company often chairs the meetings or attends the meetings on a monthly basis. Other government agencies that play critical roles in the areas of agricultural and social development as well as funding and community support, also attend the councils meetings as it provides a forum for the communication of all government initiatives and programs taking place within these communities.

As with the MPs, the councils are empowered to draft and submit projects that will have a positive impact on the well-being and future sustainability of the communities they represent. It is important to note, that each council must be registered with the government as a benevolent society before it can benefit from BCDP support. This is a critical requirement as it subjects the council to frequent government audit and oversight given that it receives public funds. Additionally, the BCDP can only disburse funds to bodies so categorized or bodies that are legally registered as 'foundations'. Another important role of the community councils is the dissemination of information to the communities they represent. This role is crucial in order to ensure that the council remains in contact with the communities it represents and is thus able to distribute the benefits it receives beyond the confines of its regular membership.

3.3 Community Project Component

The community project component represents the larger of the two facilities by way of investment. In this facility, projects are devised in two ways;

- by submission through community councils
- based on the needs assessment of the BCDP project team.

Projects devised through the latter, are often of higher value and include other government partners. This is so as these projects are often aimed at resolving an issue in a sustainable way, utilizing all stakeholders for lasting impact. These projects are also often sensitive to the Government’s National Development Plan. It must be noted that projects submitted through the community councils are not at all restricted from rising to this threshold. However, the needs that motivate community council submissions are usually transient in nature as they seek to address a need that exists within a specific context of time. These projects by their very nature, must come from the community councils, who are in touch with and experience the population’s struggles in real time. This conforms with the best practices of consensus building which is needed in order for community initiatives to succeed.

“Although successful neighbourhood transformation always involves partnerships with external resource holders, the genesis of the solution happens at the neighbourhood level. Residents of disenfranchised neighbourhoods often have programs and initiatives “planned” for their communities...Unless residents have real roles in determining their fate, these initiatives often fail”[10]

This focus ensures that the program addresses communities’ issues in a way that does not sacrifice short-term needs to focus on long term goals. This creates ‘win-win projects’[10] as both long term projectizing and short term planning and organizing must interact with and advise each other if true sustainability is to be achieved.

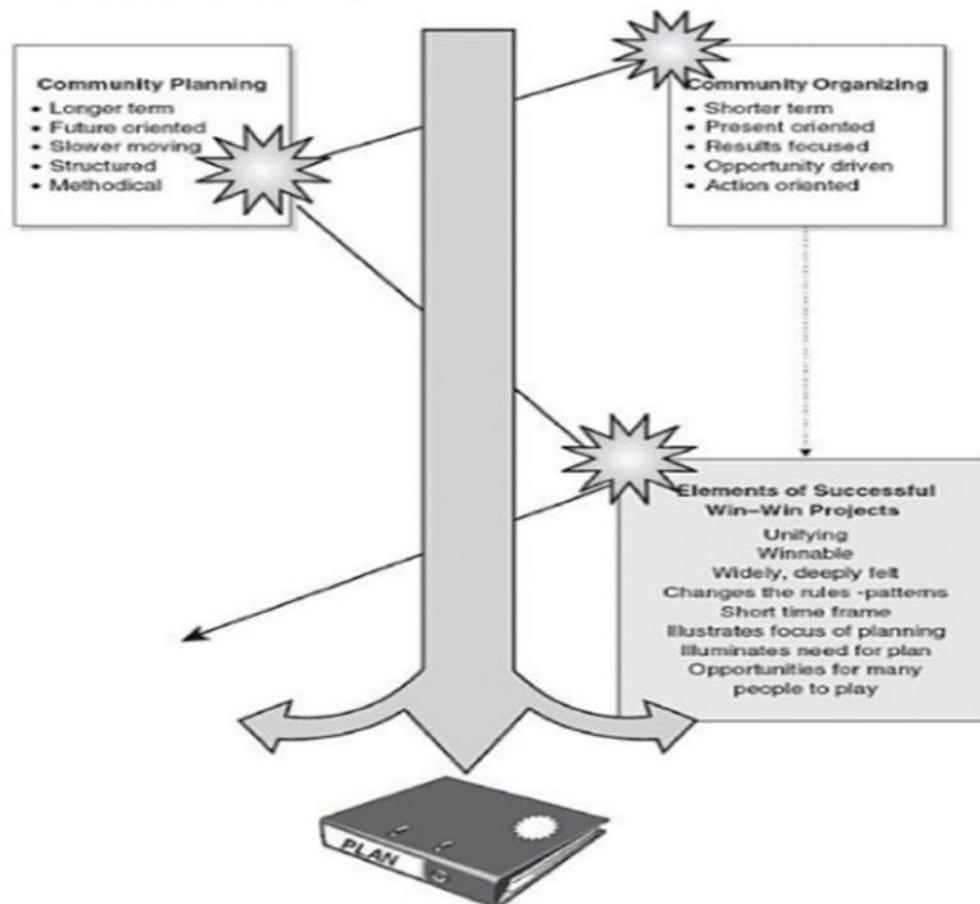


Figure 5. Integrating long term planning with short term implementation [10].

The community councils submit project proposals to the BCDP Team in prewritten project proposal templates which require information on the cost, the target demographic or population,

the expected impact, the number of people to benefit, the location of project and other information regarding project implementation. Special consideration is given to projects that incorporate renewable resources and techniques. These proposals are sent to the BCDP team to review and assistance is provided to the council in project drafting as is needed. Once the project is assessed and passed by the BCDP team, it is submitted to the BCDP Advisory Committee for approval. If approval is granted, the monitoring and disbursement processes are triggered.

3.4 Project Implementation, Monitoring and Evaluation

The process from here is identical for both the MP and the community project facility. Once approval is received, an implementing agency is identified; this entity must be a government agency in order to protect against various risks. An implementation schedule is requested once the agency verifies its ability to undertake implementation. Funds are disbursed in two tranches of 50 %, first at the start of the project and the second at the project’s mid-point. This is done in order to ensure that projects are implemented as approved and within budget. The implementing agency will submit two reports throughout the project lifecycle, one at the mid-point in order to receive the second 50 % and the other at the project’s end. The BCDP project officers will conduct field visits to ensure that what is being reported is what is being done as well as to obtain feedback from the community regarding the project’s implementation. This will form a part of the evaluation process.

The evaluation process begins as soon as project implementation is completed. It requires constant dialogue and feedback from the community and implementing partners. Depending on the nature of the project, monitoring and evaluation may last up to 5-6 years or longer. An example of a project with a protracted monitoring phase is introduced in the Case Study below. The evaluation process will examine if the project brought the benefit expected, to the right demographic group and in the right way. Evaluation reports are submitted monthly or as requested by the Advisory Committee.

Case Study: Apiary Project
<p>Bee-keeping has grown in popularity in Jamaica as the government continues its push to diversify the Agricultural sector. Not only is it a profitable endeavor, it is also an environmentally positive way to create revenue as bees are valuable to the overall ecosystem. In support of the government’s initiative, the BCDP in partnership with other government agencies, started its Apiary Project in 2018 at a total cost of JMD 3M. The BCDP’s Apiary project represents one of several projects that have a protracted monitoring and evaluation phase. The project provides farmers with all the input needed to start a bee farm including hives, hive tools, smoker, feeder, protective clothing and suitable water source. The farmers are provided with the necessary training through the Ministry of Agriculture and other Government agencies. The structure of the project requires that each farmer earns enough to purchase their own tools and would eventually hand over the original tools provided by the BCDP, to a farmer in waiting. This ensures that the project is expands in a sustainable way, thereby providing economic empowerment to more farmers. The nature of this arrangement therefore requires ongoing monitoring to ensure proper management and maintenance of the original tools. Additionally, because of the nature of the activity, it is also very susceptible to praedial larceny. As such, frequent check-ins are done to ensure that the farmers are doing enough to protect the investment thereby preserving the benefits for the next in line. This project has allowed farmers to benefit from the tremendous demand for organically produced honey as Jamaica is the main producer of honey in the English-speaking Caribbean [11]. The demand is still unmet and discussions are being had to further expand the project.</p>

4. BCDP: Lessons learned

As the world moves into an age where economic considerations must now (equally) contend with environmental and social ramifications, the need for balance is greater than it has ever been. The BCDP provides an example of an effective model; a tool that can be reimagined, remodeled and replicated as is needed. The model is adaptable, in that it's not solely relevant to the bauxite mining industry, but can be applied to other sensitive extractive/processing industries whose success relies heavily on community support and where sustainable development is a requirement for operation. As effective as it is however, there are considerations that must form a part of any attempt to replicate the model.

Firstly, the nature of most political landscapes has certain realities that must be taken into account. One of the most glaring of those realities is that the desire for re-election among political representatives will usually be found at the top of their hierarchy of goals. This creates a delicate situation when interfacing with the political representatives on the one hand and their constituents on the other. Therefore, if political representatives are to be positioned at the nucleus of the model, there must be mechanisms created to keep them accountable to the ideals of the model. Structures must be put in place to ensure that representatives dialogue with their constituents in a way that fosters collaboration and mutual understanding. Though agreement is not always essential, meaningful dialogue is, and where a representative fails to effectively carry out the latter, it may unravel the entire model. Where the community information and communication systems break down it can pose a serious challenge to consensus building. It also negatively affects the credibility of the data or needs assessment being used to develop solutions.

It is also important to ensure that the process to request, approve and implement projects is not overly complex. The beneficiaries of the program must be able to understand the processes fully and get any support needed relatively quickly. The BCDP operates in this way as it guarantees quick redress of acute community needs which builds trust and credibility between the community and the industry. Notwithstanding the need to guarantee transparency, accountability and the integrity of the program, the ability to address certain issues with agility may also assist in quickly relieving built up pressure in the community-industry interaction. There are enough checks and balances within the BCDP operations to increase probity while allowing for speedy process flow from problem to solution. The checks needed are embedded in the reporting responsibilities, a layered approval process as well as frequent monitoring and auditing. An example of the positive effects of the programs agility is explained in the case study below.

Case Study: Support for poultry farmers

The Russian-Ukrainian conflict saw prices for several items needed by the poultry industry skyrocketing over a relatively short period of time. Agricultural raw materials such as corn, soya beans etc, that were needed by chicken farmers were all increasing at an astronomical rate. This had series of negative effects on the local food market in Jamaica: firstly, many small chicken farmers ran into serious financial challenges, some going out of business. Secondly, the demand for chicken meat on the market outpaced supply, sending chicken prices through the roof. The effects were amplified in poor rural communities where chicken meat is one of the primary sources of protein. Additionally, the micro-economy of these communities had still not fully rebounded from the Covid-19 pandemic, which was just beginning to loosen its grip on the population. As these communities began to find it more and more difficult to feed themselves, there was an atmosphere of unease between them and the bauxite companies who they saw as a constant benefactor, a role made more poignant given the circumstances. In one particular community where the bauxite company was mostly inactive having shut down its operations, tempers were particularly heated. Community members began agitating concerns about dust being

blown from the now dry red mud/residue ponds into their homes. Though checks on the degree of the dust incident revealed it to be less than significant, on the ground assessments of the situation revealed that the agitation was largely fueled by the desire for monetary compensation as many families were beginning to feel the pinch from the rising food prices. In one particular community, an assessment revealed that there was a large number of chicken farmers who were negatively affected by the rising prices. As community members started to demand attention and many threatening protest the BCDP, understanding the force behind the agitation, utilized standing partnerships with other government stakeholders to quickly mobilize support for the poultry farmers in the area. Close to 100 poultry farmers were provided with chickens, chicken feed, training and other inputs through the BCDP. This largely satiated tempers and assisted in the resetting of normal relations between the community and the industry. To date, over half of the poultry farmers supported are still in business, using the revenue obtained from their original stock to replenish their operations, thereby reestablishing sustainable micro-agricultural enterprises within these communities.

Finally, impact requires focus. This is particularly true when distributing finite resources. The BCDP experience revealed that there is greater impact to be had by identifying limited areas of focus that represent the most intense pressure points within communities. This approach also lends itself to more effective strategic planning. Emerging from the Covid-19 pandemic, the BCDP adjusted focus to three sectors most impacted by the pandemic: community health, small business support and education. Though the program would have provided support in these areas in one way or another in the past, a larger percentage of the budget was set aside to address projects that fell within one of these three pressure points. As a result, over the last three (3) years the BCDP projects ranged from the renovation and reopening of community clinics to the provision of tablets and laptops to assist with distance/hybrid learning. This has resulted in a greater level of impact being felt by residents in bauxite communities.

5. Conclusion

The Brundtland Commission of 1987 described sustainability as the ability to

“meet the needs of the present without compromising the ability of future generations to meet their own needs.”[12]

By reinvesting the earnings from the industry into the communities that support it, the BCDP has created a cycle of development that ensures the communities feel the benefits of the industry on the ground. The utilization of mined-out bauxite pits as water catchment ponds to support small farmers represents a best practice in sustainable mining. In Jamaica, the activities of the BCDP is also supported by government legislation. Since 2001 for example, the law requires that bauxite companies restore mined-out lands within 3 years after mining or face a fine. This helps to preserve the space needed for the BCDP to operate in collaboration with bauxite companies as lands are often reclaimed with the end use (agricultural, construction etc) having been agreed upon by all necessary stakeholders. In keeping with the Brundtland Commission's definition of sustainability, sustainable mining is indeed very achievable, the blueprint of which can be found in the operation and vision of the Bauxite Community Development Program.

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