

GENDER ANALYSIS OF THE PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL FOR BELIZE

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EXECUTIVE SUMMARY

The Caribbean Community Climate Change Centre is proposing an initiative to explore the long-term feasibility of *Arundo donax*, locally known as “wild cane.” *Arundo donax* is a fast-growing grass currently growing in Belize. This pilot project would introduce it as a new energy crop for possible local use and export to Central America and the Caribbean. One of the requirements for Green Climate Fund’s funding consideration is the conduct of a gender analysis. Gender analysis is a systematic, analytical process for assessing and understanding gender differences and the relevance of gender roles and power dynamics in a particular context, based on sex-disaggregated and gender information.¹ These differences include socio-economic participation, needs, opportunities, rights/entitlements and the differential impact that policies, programs and services could have on the lives of women and men.

Desk research, community-level focus group sessions and interviews with representatives of stakeholder government and civil society organizations influenced this study. The focus group sessions were done to ensure that the Caribbean Community Climate Change Center incorporates the local perspectives, views and concerns of men and women in the footprint communities (Yo Creek and San Lazaro Villages) where the proposed plot of land for piloting growth and harvesting of the grass is located. These were held with targeted sectors, namely youth, teachers, women’s groups, community leaders, faith-based leaders, and cane farmers residing in the target communities. The interviews provided national perspectives within the context of policy and programming.

Women’s access to resources and their relegation to household duties presents the prelude of an array of inequities. The participation of women in local governance is negligible and virtually non-existent at the leadership level in these communities. While women are considered essential to the operation of local faith-based institutions, their roles are mainly that of cleaning, fundraising, choir membership and as Sunday School teachers. Consequently, not only household, but also collective community power and decision-making is predominantly male-centric. Notwithstanding, it was reported that women tend to be responsible for household money management and in some instances, management of workers’ payroll. While men are primarily responsible for income-generation in the family, the burden of ensuring that all financial and social family needs are met, is borne by women. This includes managing the income whether meager or otherwise and taking

¹ UNDP: How to Conduct a Gender Analysis

responsibility for house upkeep, care giving for children and the elderly, and payments of all bills. Women are generally viewed as playing a supportive role in the sugar cane farming sector such as food preparation and clothes washing duties for her male partner and his workers. While some women are registered as sugar cane farmers, in most cases, this is superficial and for the benefit of maximizing load quotas.

All things considered, the number of hours that women presently work in fulfilling domestic obligations and unpaid agriculture responsibilities should be taken into consideration when developing interventions and support programs (in consultation with women) and prior to embarking on technical skills training. Critical family responsibilities tend to limit women's ability to actively participate in economic-empowerment and enterprise opportunities in their communities. Therefore, for this pilot project to be gender-responsive and in order for gender to be mainstreamed at all its phases, the realities of women need to be assessed. Planning needs to be intentional with a strategic focus directed at addressing how the needs of women can be fulfilled without exasperating their already heavy burden of care in their households (including care for children and elderly) and communities. The need for overall social inclusivity cannot be forgotten. Inequities extend beyond just women; it also impacts other vulnerable populations such as youth, the elderly, and members of the Lesbian, Gay, Bisexual and Transgender (LGBT) communities. The needs of these sub-populations range from jobs that are discrimination-free and training schedules designed with consideration to time, transportation and care giving barriers.

This gender study also highlights the importance of engaging women, youth and other vulnerable populations in Belize's agricultural sector as it can contribute to positive outcomes in attainment of the Sustainable Development Goals². It found that measures need to be taken to ensure that women and other vulnerable populations are actual direct beneficiaries with improved quality of life as a result of their engagement/involvement in this project. For instance, this may require socio-cultural interventions to build and strengthen the support of men as allies to support women in their roles in the pilot project. However, it should not be assumed that women or other vulnerable groups want to be directly involved in this project. They should be consulted and given the option of deciding whether they want to: supplement their husband's incomes by engaging in this initiative; become a primary cash-income earner if their husbands are unable to secure employment

² In particular SDGs focused on poverty, hunger and gender equality

outside of crop season or in cases of singlehood; or support their husbands by taking on a secondary role in the project.

UN Women advises that “whether or not labour distributions are considered to be fair depends how these fit within all activities and responsibilities for household survival and livelihood growth.”³ Furthermore, research found that often, agriculture “production is sex-sequential, with women and men taking on specific roles at particular points.” The separation of tasks by gender may mean that neither men nor women possess a complete understanding of the whole value chain and of how the roles and responsibilities of different actors intersect and interact at different stages. If not acknowledged, analyzed and worked through, this can reduce the effectiveness of this pilot.”⁴ Consequently, the pilot project should design and implement strategic interventions for the purpose of local level communication and knowledge management. Additionally, it must include a gender sensitive outreach and capacity building plan to ensure that women, youth and other sub-groups are engaged and have equitable access to the resources and opportunities attributed to this pilot project.

BACKGROUND

The Caribbean Community Climate Change Centre (5Cs) coordinates the Caribbean region’s response to climate change and is the key source of information on climate change issues and on the region’s response to managing and adapting to climate change⁵. A few years ago, the Government of Belize requested that 5Cs undertake an effort to research, analyze and determine a suitable and sustainable way forward to expand the utilization of biomass to meet some of its energy needs with the aim of adapting to climate impacts as well as to reduce the country’s carbon footprint. An Environment and Risk Management Plan (ERMP) was developed for the *Biomass Pilot* designed by 5Cs as one of several key activities proposed for World Bank support as a part of the Energy Resilience for Climate Adaptation Project. That ERMP would be one of the instruments to be incorporated as something to build on while the Environmental and Social Impact Assessment (ESIA) financed by the GCF was being conducted. It was felt that the ESAI would be much broader in scope than the ERMP. The development of the ERMP was informed by a public

³ Expert Group Meeting-Enabling rural women’s economic empowerment: institutions, opportunities and participation. UN Women 2011 (p.5)

⁴ Gender Analysis Report- Proposed Loan Socialist Republic of Viet Nam: Low Carbon Agricultural Support Project (p.8)

⁵ <http://www.caribbeanclimate.bz/about-us/>

consultation meeting: *“Piloting the Cultivation of Wild cane (Arundo donax) in Belize”* held on February 25, 2016 in San Lazaro Village. The purpose of this meeting was to present the project concept and steps to be taken to mitigate risks to the national stakeholders, including residents of the area in the vicinity of the Project Site, in order to obtain feedback, and incorporate any recommended actions in the ERMP. Of the 21 participants, 10 were residents (mainly cane farmers) of San Lazaro. The remainder were staff of 5 Cs, land use management consultants, and representatives from ASR/Belize Sugar Industry and associated government ministries.

Subsequently, feedback was received from World Bank (Energy Resilience for Climate Adaptation Project) indicating that it was unable to finance the *Arundo donax* component of ERCAP due to a “reputational risk”. Subsequently, the 5Cs submitted a Project Preparation Funding Application to Green Climate Fund. This application was approved by GCF, and a request for first disbursement was submitted. Thereafter, funding was released to implement preliminary phases of the project which included the Feasibility Study and the Funding Proposal preparation. The 5Cs is now in the process of developing a funding proposal for submission to the GCF seeking financing for investment in a bio-mass renewable energy project. The process of proposal submission and consideration of this project by the GCF requires inter alia the conduct of a Gender Study and the development of a Gender Action Plan. The conduct of this precursor study and accompanying action plan is necessary to ascertain the viability of the undertaking (at a commercial scale), on the basis of which a full-scale funding proposal will be developed and submitted to the GCF for consideration.

PURPOSE OF GENDER ANALYSIS

Gender analysis is a systematic, analytical process for assessing and understanding gender differences, and the relevance of gender roles and power dynamics in a particular context, based on sex-disaggregated and gender information.⁶ These differences include their socio-economic participation, needs, opportunities, rights/entitlements and the differential impact that policies, programs and services could have on the lives of women and men. Furthermore, gender analysis examines the relationships between females and males and their access to and control of resources and the constraints they face relative

⁶ UNDP: How to Conduct a Gender Analysis

to each other.⁷ The conduct of a gender analysis aims to address gender inequalities and inequities by ensuring that the voices of women are reverberated throughout a project thereby ensuring that their needs are identified and intentionally and effectively addressed. Furthermore, this study presents findings and recommendations in respect to pertinent gender considerations that must be factored into the development of the investment proposal. The results of the analysis have been used to develop a Gender Action plan, which includes outputs, activities, targets, timeline and costs, to address the key recommendations identified.

LIMITATIONS

Gender analysis should be undertaken at various stages of a project including during the planning phase. Failure to include gender in project design may limit the project's ability to adequately address gender inequities⁸. Considering and incorporating gender relations at the onset of a project allows for effective project design and implementation that identifies the different priorities, needs, capacities and vulnerabilities of women, men and other groups thereby reducing the risk of having to develop interventions based on incorrect assumptions and stereotypes.⁹ Notwithstanding, projects that manage to incorporate gender relations after project design but before completion of implementation, have an opportunity to integrate women's voices, improve their status and address gender-biased socio-cultural norms and practices related to sustainable livelihoods. The requirement of GEF for a gender analysis to be incorporated into the funding proposal provides an opportunity to incorporate and integrate gender considerations to address and support the focus of the proposed pilot project in terms of implementation at the community level.

With the exclusion of youth participants in the focus groups, the vast majority of respondents were married. It was expressed that this is a cultural expectation realized as near to the attainment of adulthood as possible. Consequently, this report makes reference to "husbands" and "wives" but it is not to be assumed that the gender considerations and recommendations cannot be applied to single women and men.

Gender analysis generally involves a blend of field-based observations, qualitative data collection founded on community participation (such as focus group discussions); and desk

⁷ Gender Equality, UN Coherence & You—Glossary: Definitions A-Z

⁸ http://pdf.usaid.gov/pdf_docs/Pnadj420.pdf

⁹ <http://www.fao.org/investment-learning-platform/themes-and-tasks/gender-analysis/en/#c276099>

review of primary and secondary data. This gender analysis is limited by: (i) available age and sex-disaggregated data (quantitative) at the national and community levels; and (ii) age and sex-disaggregated data about the energy and agriculture sector, in particular as it pertains to cane farming which is the main industry and source of income in the footprint area.

Use of the best practice participatory approach to gender analysis is aligned with the tenet of social inclusion which aims at ensuring that all segments of society enjoy equal rights and benefits in all spheres of society without discrimination based on sex or other factors.¹⁰ This analysis is limited to focus group sessions conducted in the footprint area, being San Lazaro and Yo Creek Villages, the communities in closest proximity to the identified plot of land for pilot harvesting. Some statistical data was secured from the Statistical Institute of Belize (SIB) based on data collected using various tools (e.g. national census and surveys). However, this analysis was still limited by the amount and nature of available secondary data¹¹ from SIB (as the country's official data source) based on the specificity of data that is not sex-disaggregated.

METHODOLOGY

The following is a list of the relevant documents and literature reviewed to provide information on project background, objectives and the contextual setting:

- Environment and Risk Management Plan for Piloting the Cultivation of *Arundo donax* in Northern Belize (2016)
- Project preparation funding application for *Arundo donax* Renewable Bio-Mass Fuel for Belize- Feasibility Study and Funding Proposal Preparation (submitted by 5Cs)
- Caribbean Community Climate Change Center Project Proposal for the Production of *Arundo donax* as a Renewable Biomass Fuel for Belize (submitted by 5Cs and Ministry of Energy, Public Service, Science & Technology and Public Utilities, 2017)
- Belize's National Gender Policy (Revised, 2013)
- National Food and Agriculture Policy (2002-2020)
- National Energy Policy (2011)
- Belize Sugar Cane Industry Act (2003)

¹⁰ Gender Equality and Social Inclusion Toolbox.

http://www.aepc.gov.np/docs/resource/resqfm/20140602014209_Final%20design%20Toolbox-GESI.pdf

¹¹ <http://www.businessdictionary.com/definition/primary-data.html>

Secondary data is published data and the data collected in the past or by other parties.

- Research on Child Labor and Youth Wellbeing in Sugar Cane Producing Communities in Belize (2018)

The analysis exercise was guided by UNDP's "How to conduct a gender analysis" tool and followed the GCF Gender Analysis/Assessment Template. A sustainable livelihood approach¹² was used as the conceptual framework, to ensure that the dynamics of social diversity and gender were explored in the context of sustainable development. Additionally, USAID's best practices¹³ for incorporating gender relations into similarly-focused projects, was also used to support the gender analysis exercise.

A Gender Analysis Framework (GAF) was used to provide structure in organizing the information about gender roles and relations. This allowed for the visualization and understanding of gender differences and consequent differential impact across socio-economic spheres. The analysis answered the following questions: (i) What is the context?; (ii) Who does what?; (iii) Who has what?; (iv) Who decides?; and (v) Who benefits?

The responses to the above are presented under the four domains of the GAF:

1. Access to and Control over Assets and Resources;
2. Gender Division of Labor, including Beliefs and Perceptions;
3. Participation and Gender-based livelihoods patterns; and
4. Power and Decision-Making

These created the axis for the intersecting elements of the matrix used to condense the information and study the gender relationships. Subsequently, it was assessed whether the existing information was adequate for the project context to understand how the proposed Arundo donax project objectives may be affected by gender difference and inequalities in the following areas¹⁴:

- Differences in women and men's access to assets and resources.
- Differences and inequities in women and men's participation in the energy and agriculture sectors and care-taking responsibilities in the household and community.
- Differences and inequalities in leadership roles and decision-making in the community.

¹² ibid

¹³ http://pdf.usaid.gov/pdf_docs/Pnadj420.pdf

¹⁴ Jhpiego- Gender Analysis Toolkit. <https://gender.jhpiego.org/analysisistoolkit/seven-steps-to-a-gender-analysis/>

Additionally, it assesses how potential differential effects of agriculture and energy policies and programs on women and men, including those that are unintended, may negatively or positively impact women and men's opportunities, socioeconomic status, and wellbeing.¹⁵

The proposed *Arundo donax* initiative is at the piloting stage so consideration of its potential to rejuvenate or even salvage the agriculture industry in Orange Walk would be premature. Some farmers may believe that the weed they tend to uproot in their cane fields is *Arundo donax*, a rhizomatous plant belonging to the sigmoidal group. However, while similar in appearance, the weed referenced is more likely *Gynerium sagittatum*,¹⁶ which is also rhizomatous, but instead, belongs to the monopodial group. Consequently, in the absence of any solid research data and experience planting or harvesting this crop locally, this gender analysis relied on the comparative nature of both crops¹⁷. Among other things, this is attributed to the fact that a significant proportion of focus group participants aligned this crop with that of sugar cane and as such, analyzed its potential impacts and gender considerations from that standpoint.

GENDER AND SOCIAL INCLUSION: THE LINK

The Terms of Reference for this consultancy did not stipulate the need for specific focus on social inclusion, which is often the requirement for similar projects linked to sustainable development. Nonetheless, the consultant opted to include social inclusion in this analysis as it is unconceivable to conduct a comprehensive gender assessment without the consideration of social inclusion to which there is an intrinsic link.

Gender equality and social inclusion are founded on the principles of human rights. In order to achieve sustainable development, gender equality and social inclusion must be integrated into development as cross cutting issues. In order to appreciate social inclusion, it is important to understand the dynamics of exclusion. Social Exclusion is the process through which individuals or groups are wholly or partially excluded from full participation in the society in which they live resulting in these individuals and groups being prevented

¹⁵ Ibid.

¹⁶ Aragon-Garita, A. et al. (2016.) Production and quality analysis of pellets manufactured from five potential energy crops in the Northern Region of Costa Rica, page 86. <https://www.sciencedirect.com/science/article/pii/S0961953416300277>

¹⁷ *Arundo donax* and sugar cane

from accessing resources, participating in society and asserting their rights.¹⁸ Women are often the main excluded group in social development, renewable energy, land management and livelihood development projects. The government has institutionalized mechanisms to support women as a socially-excluded group, primarily through the establishment of the National Women's Commission and the Department of Women and Family Services and via the endorsement of the Belize National Gender Policy. Notwithstanding, if women and other traditionally excluded groups (including youth, elderly and LGBT communities) do not have access to adequate resources they will continue to be hindered from realizing their full potential.

The Terms of Reference of this consultancy are consistent with the Government of Belize's objective of gender inclusion in activities related to the utilization of biomass to meet some of the country's energy needs and achieve the dual aim of reducing the country's carbon footprint and adapting to climate change impacts. This section includes local and international frameworks which introduce the human rights and sustainable development denominators that underpin gender and social inclusion.

INTERNATIONAL LANDSCAPE

Belize is a signatory to a range of binding international agreements and has endorsed numerous regional and international frameworks as heightened in the table below.

INTERNATIONAL AND REGIONAL FRAMEWORKS	
Treaties	
Convention on the Elimination of all forms of Discrimination against Women (CEDAW)	Human Rights framework focusing on defining discrimination against women. It encourages states to adopt national agendas to rectify inequalities between men and women.
Convention on the Rights of the Child	Human Rights framework acknowledging a set of child-specific needs necessary for the proper development of children.
International Covenant on Civil and Political Rights	Has a specific article on the gender equality applications of the agreement.
Inter-American Convention on the Prevention, Punishment and Eradication of Violence against Women (Convention of Belem do Para)	Specifically addresses the issue of VAW. It recognizes the connection between VAW and discrimination: "GBV is a materialization of the traditionally unequal power dynamic between men and women"
Convention on Biological Diversity (and Cartagena Protocol on Biosafety)	Multilateral treaty with the objective to develop national strategies for the conservation and sustainable use of biological diversity.

¹⁸ DFID Gender Equality and Social Inclusion Policy Document

Stockholm Convention on Persistent Organic Pollutants ¹⁹	Aims at protecting human health and the environment through regulation of the production, use and distribution of chemicals that remain intact in the environment for long periods,
Declarations, Plans, and Programmes of Action	
Petro Caribe Agreement	Agreement signed between Venezuela and Caribbean countries (as of 2005) for the sale of petroleum products to these countries from Venezuela's Petroles de Venezuela under favorable financing terms.
Universal Declaration of Human Rights (Vienna Declaration)	Adopted by the United Nations in 1948, it registered gender equality in all capacities as a fundamental human right.
United Nations Beijing Platform for Action	Global call to end all forms of violence against women and girls by highlighting violence as one of their 12 critical areas of concern.
International Conference on Population Development	Emphasizes women's health and empowerment as essential in population development. It notes that poverty is closely related to inappropriate spatial distribution of population, to unsustainable use and inequitable distribution of such natural resources as land and water, and to serious environmental degradation ²⁰ .
United Nations Framework on Climate Change ²¹	A framework for international cooperation to combat climate change by limiting average global temperature increases.
Commonwealth Plan of Action for Gender Equality	Addresses the social, economic, legal and health barriers for women in the Commonwealth such as gender-based violence, "access to lifelong learning, as well as women's rights regarding access to and ownership of land and property." ²²
Agenda 2030: Sustainable Development Goals	Goals focus on: Gender Equality; Building resilient infrastructure, promoting sustainable industrialization and fostering innovation; Taking urgent action to combat climate change and its impacts; and sustainably managing forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.
UN Multi-Country Sustainable Development Framework in the Caribbean ²³	Addresses implementation challenges of Sustainable Development Goals by English and Dutch speaking Caribbean countries. It's 2017-2021 agenda aligns with and supports national goals of Caribbean governments.
Japan-Caribbean Climate Change Partnership ²⁴	Collaborative partnership between Japan and Caribbean countries to increase climate change mitigation investment and policies innovation. The partnership provides institutional support, training, data sharing and technology transfers.
Caribbean Energy Information System (CEIS) ²⁵	Partnership established by CARICOM Heads of Government to manage information flows of energy technology development and implementation

¹⁹ <http://chm.pops.int/TheConvention/Overview/tabid/3351/Default.aspx>

²⁰ <http://www.un.org/popin/icpd/conference/offeng/poa.html>

²¹ <https://unfccc.int/process#:d8f74df9-0dbd-4932-bf3c-d8a37f8de70e>

²² http://www.justice.gov.za/docs/other-docs/2005_GenderPoA20052015.pdf

²³ <https://www.unicef.org/about/execboard/files/UNDAF-MSDF-Caribbean.pdf>

²⁴ <https://sustainabledevelopment.un.org/partnership/?p=12369>

²⁵ <http://www.ceis-caribenergy.org/about/>

Lima Agreement ²⁶²⁷	Purpose is to set up mechanisms for sustainable use of energy resources in Latin America and the Caribbean.
Energy and Climate partnership of The Americas (ECPA) ²⁸	Regional partnership that focuses on energy efficiency, renewable energy, efficient use of fossil fuels, energy poverty, and infrastructure.
SIDS DOCK ²⁹	Collective initiative between members of the Alliance of Small Island States for the transformation of energy sectors into mediums for economic development.

LOCAL LANDSCAPE

GOVERNANCE

San Lazaro and Yo Creek are rural communities (villages) in the Orange Walk District. The local governance framework of these footprint areas is the Village Council Act of 1999. This legal framework outlines responsibilities of the Village Councils including: maintaining streets and drains, sanitation and waste disposal, parks, markets and cemeteries, and organizing community events. The focus groups in the project's footprint area, revealed that a woman has never been elected as chairperson of the Yo Creek Village and that the last time a woman served in this capacity in San Lazaro Village was 15 years ago. Both women and men expressed that when women are elected to the village councils, their primary role is staffing the kitchen at community events and the planning/organization of fundraisers. Furthermore, it was expressed that being on the Village Council generally perceived as being "men's work," with women playing a supportive role as needed in non-elected positions. Focus group participants recalled that approximately 15 years ago in San Lazaro, the woman who was elected as chairperson of that village council, was unmarried and possessed more than 15% of the village's land. They expressed that in her case, her assets made her considerably powerful in the village and therefore, worthy of holding this leadership position. Furthermore, the absence of a male partner removed the likelihood that her husband would have prevented her from being in such a political position, which was an expressed reason for the small number of women even offering themselves for village council elections.

Women's political participation in Belize continues to be hindered by political, socioeconomic, ideological and psychological barriers including lack of finances, lack of support and lack of available time due to "household/child rearing responsibilities."

²⁶ <http://www.olade.org/sites/default/files/Lima%20Agreement.pdf>

²⁷ <http://www.olade.org/about-us/?lang=en>

²⁸ <http://www.ecpamericas.org/about-ecpa.aspx>

²⁹ <https://sidsdock.org/what-is-sids-dock>

However, at the community level, women are known to be more actively engaged than men in political campaigning.

Of the 14 members of the current Belize Senate, 3 are women. The Speaker of the House of Representatives is a woman and of the 31 members of the House of Representatives, 2 are women. While there exist opportunities to promote women's political involvement such as the Women in Politics initiative by the National Women's Commission (2009 and 2010), the aforementioned psycho-social issues continue to be barriers to women's participation at all levels including the village council. Women's community and sector--based decision-making is also hindered by patriarchy. Focus groups also revealed that women are not likely to attend regular meetings or trainings at the sugar cane farmers associations or the Sugar Industry Research and Development Institute (SIRDI) because it is understood that their spouses are the main receptors of knowledge and will share such with his female partner if he deems it necessary. It was reported that are registered female sugar cane farmers who are likely to attend annual general meetings of the cane farmers associations but not regularly scheduled meetings or trainings. This is because based on their assigned quota and registration in the associations, they have voting power. Notwithstanding the social perception and sentiment was shared by both men and women that participation in these associations is predominantly by men, namely husbands and male relatives.

Additionally, safe and reliable transportation was also noted as a barrier to women's participation. When there is the absence of such, women in Yo Creek and San Lazaro Villages opt to hitchhike to get from one community to the other, exacerbating their vulnerability risk.

It is noted that the significant majority of individuals elected to both village councils have been persons over the age of 25 which is attributed to the sentiment that youth (i) do not want to or are not interested in governance responsibility; (ii) are consumed with higher education and employment pursuits; and (iii) are no longer residing in the villages because of school or work realities.

POLICY FRAMEWORKS AND NATIONAL PLANS OF ACTION. Over the past years, several strategic plans of actions and strategies have been developed which have attempted to incorporate

gender relations. However, it is important to note that some of those listed below are in draft form and some have since expired and it is uncertain whether, updated plans based on evaluation results are being developed to guide present and future efforts.

- National Energy Policy Framework (2011)
- National Poverty Elimination Strategy and Action Plan (2009-2013)
- National Medium Term Macro-Economic Strategies (2010-2013)
- Horizon 2030: The national development framework (2010-2030)
- Poverty Reduction Action Plan (2014)
- National Food and Agriculture Policy (2002-2020)
- Belize Growth and Sustainable Development Strategy (2016-2019)
- Sugar Industry Strategic Development Plan Log Frame (Draft)
- Agriculture Development Management and Operational Strategy
- Belize Rural Area Development Project (2006-2010)³⁰
- National Land Use Policy and Planning Framework
- National Environmental Action Plan (2015-2020)
- National Environmental Policy and Strategy, the Sustainable Chemical Management Action Plan (2014-2024)
- National Protected Areas Policy and Systems Plan

Belize's ratification of these treaties, adoption of regional and international frameworks, passage of legislation and development of several action plans suggests a consistent political commitment to address climate change and sustainable natural resource development and management. However, for the most part, local plans and strategies highlight the need for an increase in women's political participation; access to quality healthcare for women and youth; and the creation of economic empowerment activities for these sub-groups. The National Food and Agriculture Policy³¹ recommends the promotion of *"greater participation of local people including women, youth and indigenous groups in local development planning and decision-making"* as well as improved *"access to productive resources and services and create economic opportunities for small farmers, women and young farmers, and indigenous people, particularly in poor, marginal areas."*

³⁰ While a program and not a plan of action, the importance of its objectives to support sustainable economic growth as the primary means of alleviating poverty in the rural areas of the country has significance to this project.

³¹ National Food and Agriculture Policy (2002-2020)

However, targeted consideration for the needs of women; the assessment of gender roles; the different implications of these plans on women and men; the social, traditional and institutionally-perpetuated barriers to women's socio-political and socio-economic empowerment; and opportunities to combat gender inequalities, is absent from this and other national frameworks outside of the National Gender Policy. The agriculture sector is a lucrative career pathway. However, the consistent inability of the government to package it as a means of poverty reduction and employment opportunities for youth adds to the repulsion by that sub-group. The focus on engagement of women and youth in agriculture could yield positive outcomes in the Belize's attainment of the Sustainable Development Goals³². Gender, as well as social inclusivity, are not fully mainstreamed into most of the existing national plans and strategies and where there is inclusion of "women's issues" into such could be perceived as tokenistic and merely a response to a growing international funding requirement for analysis of development plans through a gender lens.

THE NATIONAL GENDER POLICY , however, *"identifies and examines the inequities experienced by both men and women and suggests strategies to correct gender disparities as well as gives direction for the co-ordination and implementation of the policy."*³³ This Policy directly outlines strategies for design of future development initiatives aligned with the proposed Arundo donax Project and similar endeavors, namely: (i) building institutional capacity for gender mainstreaming of all relevant policies, strategies and plans of action; (ii) building opportunities for lifelong learning that is holistic, gender responsive, integrated and geared towards sustainable national development; (iii) using formal and informal education to transform gender relations with the family, the community and in society; (iv) eliminating discrimination against women and men workers, including workers in the informal sectors; (v) expanding social safety nets for vulnerable women, men and children; (vi) creating greater equity in child maintenance provisions; (vii) increasing women's access to land, credit and business development; and (viii) creating gender equity in labour force participation and employment.

The extent to which the recommended strategies of the National Gender Policy will be incorporated in future development plans will be determined by both political will and the accelerated social consciousness of inclusion and equality by the community.

³² In particular SDGs focused on poverty, hunger and gender equality

³³ National Gender Policy (Updated Version)

Notwithstanding, this gender analysis presents an opportunity for gender mainstreaming into a cross-cutting project (agriculture, renewable energy and climate change) that has potential for development at the national and regional levels.

DEMOGRAPHICS³⁴

The following table highlights some significant demographics for the country of Belize, and where available for San Lazaro and Yo Creek villages.

Population³⁵	Belize (country): 387,879 Orange Walk: 50,968	
	Yo Creek: 1,413	San Lazaro: 1,051
Maternal mortality rate³⁶	83.3/100,000 live births	
Infant mortality rate³⁷	14.3/ 100,000 live births	
Educational status of girls and boys³⁸	Males: Secondary School Completion rate: 59.3%	Females: Secondary School Completion rate: 68.5
Adult literacy rate³⁹	91.2	93.0
Poverty rate⁴⁰	41.3 (sex-disaggregated data not available)	
Labour force participation rate⁴¹	79.0	49.7
Employment rate⁴²	95.2	84.4
Unemployment rate⁴³	4.8	15.6
Political participation rate⁴⁴	93	7
Life expectancy⁴⁵	71.2	75.5

The predominant ethnic group in the footprint area is Mestizo. While most residents understand both English (incl. Belizean Creole) and Spanish, a significant portion of the population is more comfortable expressing themselves in the Spanish language⁴⁶.

³⁴ 2010 Population and Housing Census (Statistical Institute of Belize)

³⁵ 2017 Annual Report (Statistical Institute of Belize)

³⁶ 2016 Abstract of Statistics (Statistical Institute of Belize)

³⁷ ibid

³⁸ ibd

³⁹ 2016 Multiple Indicator Cluster Survey (Statistical Institute of Belize)

⁴⁰ 2009 Poverty Assessment (Statistical Institute of Belize)

⁴¹ 2017 Abstract of Statistics (Statistical Institute of Belize)

⁴² ibid

⁴³ ibid

⁴⁴ <https://www.nationalassembly.gov.bz/house-of-representatives/>

⁴⁵ 2016 Abstract of Statistics (Statistical Institute of Belize)

⁴⁶ Based on expressed views of several focus group participants

Sugar cane is Belize's main agricultural export and the Orange Walk District is the core of the northern "Sugar Belt". This industry accounted for an average of 7.8% of the country's Gross Domestic Product and about 34 % of total foreign exchange earnings as a percentage of agricultural exports over the past decade⁴⁷. In early 2016, there was a reported 74,258.87 acres⁴⁸ of sugar cane fields under production.

The sugar industry is the largest single agriculture employment sector in Orange Walk district. It provides employment to almost 10,000 individuals (both directly and indirectly including sugar cane farmers) with over 40,000 individuals being dependent on it.⁴⁹ SIRD I was established by the Sugar Industry Act of 2001 with the mandate to conduct research and to implement innovative strategies to maximize productivity. The Sugar Industry Management Information System SIMIS⁵⁰ is positioned to guide and improve efficiency of sugar cane production. SIMIS is an initiative of SIRD I and is the country's largest agriculture data source in Belize. The dependency of residents in northern Belize to a single industry presents a unique opportunity for gender analysis. However, data collected from SIRD I in SIMIS is not always sex-disaggregated. The Belize Cane Farmers Association and the Progressive Cane Farmers Associations being two of the three existing industry-focused membership groups, estimate that approximately 40% of registered cane farmers are women.⁵¹ However, according to SIRD I there are 4,317 registered sugar cane farmers of which 1,383 are women (32%). Of the total number registered 203 farmers are under the age of 24 (5%), of which 84 are women (41% of young farmers). Furthermore, it is reported that in 2016, the employment rate for men in agriculture was 22.2 versus 3.1 for women⁵².

While the advancement of gender equality has been accelerated over the past decade by women's leadership roles in government, civil society and private sector, they are still archaic legislation that render the legal status of women as less than equitable. Notwithstanding the Equal Pay Act for legislated provisions for *"the removal and prevention of discrimination based on the sex of the employee, in the rates of remuneration for males*

⁴⁷ <http://www.sirdi.bz/industry-info>

⁴⁸ <http://agreport.bz/tag/sugar/>

⁴⁹ Belize Sugar Industry

⁵⁰ <http://www.sirdi.bz/projects/simis>

⁵¹ Personal communication in August 2018 with associations and Pat Mendoza, Stakeholder Engagement Consultant for Arundo donax Project.

⁵² World Bank: <http://datatopics.worldbank.org/gender/country/belize>

*and females, and males and males, and females and females in paid employment*⁵³ exists. Although recommended in 1998⁵⁴ as a part of the government's commitment to advance women's empowerment, the passage of a legislation to *"legislate that an economic/monetary value be placed on unpaid work in particular, care of the home and domestic duties including caregiving (children and elderly) and housekeeping when the division of matrimonial property is being considered by the Courts"* has not been realized. The introduction of the Sexual Harassment Act and the amendment of legislation to recognize marital rape have contributed to a gradual recognition that the country is working towards gender equality. However, institutional strengthening concerns remain, such as the fact that despite ongoing advocacy and recommendations from civil society and interest groups, there is still only one social worker assigned as Women Development Officer per district (with the exception of the Belize District). This individual bears the responsibility of planning and implemented programs geared toward the advancement of women and attainment of gender equality for the entire district. Additionally, collection of sex-disaggregated (while improved over the past years) is still limited and despite various trainings on gender budgeting and gender-responsive programming, gender still has not been effectively integrated into national policies and economic development plans.

There is no substantive or definitive data on comparison of men versus women's access to education, technical knowledge or training. However, while the number of women graduating tertiary education has recently surpassed that of their male counterpart, this is not necessarily reflected in the leadership positions held in private sector or government. Anecdotal information suggests that in some rural communities, girls are not permitted to attend school based on the perceived notion that there is no "value" in them getting an education since they will eventually get married and their husbands will take care of their financial needs.

As *Arundo donax* is not an existing economic or energy crop, the examination of different roles, rights, needs, and opportunities of women and men, boys and girls in this potential agro-industry context is limited to comparative quantitative and qualitative of sugar cane and its associated industry. The potential for the use of *Arundo donax* to generate renewable energy may be viewed as one means of addressing the issue of climate change

⁵³ Equal Pay Act

⁵⁴ The Women's Agenda 1998: Empowering Belizean Women for the Third Millennium (1998)

because its development as an energy crop could result in decreased use of fossil fuels to generate energy for the national grid. The aforementioned is a contributing factor to climate change due to the emission of greenhouse gases which means that a successful pilot of the harvesting of *Arundo donax* could render Belize as a regional leader in climate change combating initiatives. In 2010, biomass accounted for 39.7% of the primary fuel input into electricity supply with approximately 60% of electricity being generated from renewable energy sources.⁵⁵ The National Energy Policy Framework lists the promotion and support of local participation in the energy supply industry as a strategy. However, there are no strategies that specifically focus on the engagement or contribution of women and other vulnerable populations (including youth, elderly and LGBT⁵⁶) in the development of Belize's energy sector. This is a concern as *"the links between gender and energy, climate change and its adverse impacts have not been well articulated at international, regional and local levels"* and *"the climate change agenda is set at the international level and therefore fails to address what is in effect experienced at the local level"*⁵⁷ This holds true for the Belizean reality and is reflected by the absence of sex-disaggregated data on the utilization of and access to energy resources in Belize and by the absence of gender considerations in the original draft funding proposal prepared by the Caribbean Community Climate Change Center.

GENDER MAPPING

GENDER MAPPING- STAKEHOLDERS

The main impacted stakeholders for this proposed initiative will be: existing male and female sugar cane farmers desirous of diversifying their crops/agricultural practices and income base during pilot phase; and male and female residents of San Lazaro and Yo Creek villages who are not presently sugar cane farmers but who are desirous of exploring planting and harvesting of *Arundo donax*. More specifically, women and other vulnerable groups such as youth and the elderly comprise the subset of stakeholders likely to be impacted by this pilot project (See *Section: Considerations and Recommendations*). In essence, this may be true of any project that involves energy and agriculture because as with the focus of climate change adaptations and mitigation, emphasis is not generally given to disaggregated consultative action; impact forecasting; or analysis by sex or sub-groups. This is despite the expressed realities that women are the socio-economic pillars

⁵⁵ National Energy Policy Framework (2011)

⁵⁶ Lesbians, Gay, Bi-sexual and Transgender

⁵⁷ Khamati-Njenga and Clancy (2002). Concepts and Issues in Gender and Energy

of households despite (in some cases) their dependence on male partners for income-generation. Focus groups revealed that women are predominantly responsible for money management in households in these communities which often extends to managing payrolls and employment benefits for farm workers hired to support their spouses in the fields. This sentiment was expressed on several occasions by both men and women in focus groups: *while husbands bring in the money, the woman is responsible for making sure food is on the table*. During at least three months of year, sugar cane crop season is closed and the regular flow of money to households is significantly reduced or halted. Notwithstanding, wives are still expected to bear the responsibility for food security and often employ small-scale efforts (such as sales of their arts and craft production) to supplement household income. While statistical data does not exist to provide insight into use of energy resources, anecdotal and research from other countries suggests that men generally have direct control over household finances in terms of income generation. However, women are responsible for household money management, consequently rendering them as being responsible for payment of energy (electricity bills) and securing of butane gas to operate stoves. The introduction of a new source of renewable energy as a contributor to the national grid, could result in decreased electricity cost, which would help to alleviate one aspect of the common challenge of women in *“stretching the dollar.”* The threat of loss or reduction of household income by climate change’s potential impact on local livelihoods would affect women’s management of benefits arising out of the use of these commercial energy resources.

The elderly population is not likely to be directly impacted by the pilot project, albeit their dependency on energy needs is a consideration. This population is either on a fixed-income or with no income at all rendering them dependent on family members for care, or rendering them vulnerable to homelessness. Consequently, they are often in the vulnerable position of having to reduce their energy consumption. This includes the use of fans for cooling purposes, which is often viewed as a necessity by residents on warm Orange Walk days. While some focus group members indicated that the wives in a household are responsible for making social security benefits payments for the husband and his field workers, the National Council on Ageing asserts that a significant majority of older persons in Belize (though not disaggregated by districts or villages), do not have retirement benefits⁵⁸. As the youth population interested or engaged in field-based

⁵⁸ Interview with Executive Director, National Council on Ageing

agriculture work in the target villages continues to decrease, the older population is at risk of having to defer retirement to maintain their family's livelihood.

The Lesbian, Gay, Bisexual and Transgender (LGBT) community continues to be discriminated against in both work and recreational settings and consequently is at risk of being discriminated against for employment opportunities in the pilot project. According to UNIBAM, the premiere national human rights advocacy agency in Belize with a focus on the LGBT population, exposure of one's non-conforming sexual orientation or identity is often the cause of hiring bias which puts them at risk for homelessness and/or in some instances, results in them assuming less than desirable jobs illegitimate jobs that puts their safety at risk. In some instances where members of the LGBT community secure favorable employment that places them on a path to self-sufficiency, they still face social discrimination such as verbal abuse while travelling on public transportation. The inequities that plague this population often goes undiscussed in rural communities, such as Yo Creek and San Lazaro villages, which generally adhere to traditional practices and norms. As such, those who do identify as lesbian, gay, bisexual, or transgender tend to do so privately at the risk of becoming social and work-based pariahs.

During focus groups, residents communicated their concerns about human rights and child labor regulations pertaining to Fair Trade. The Belize Sugar Cane Farmers Association has been running Fairtrade International's Youth-Inclusive Community Based Monitoring and Remediation System (YICBMR) for Child Labor since early 2015. Farmers indicated that regulations associated with this, are hindering their traditional practical knowledge-sharing as they will be sanctioned if children are found on their cane fields. Sugar cane farmers asserted that fathers have traditionally been taking their boy children to the fields to show them how to work in the fields as sugar cane farming is generational. One farmer asked *"What will become of the boys who can't go to school? If we don't teach them to farm, how will they provide for their families when they grow up?"* Although this sentiment was echoed by several sugar cane farmers participating in the focus group, the interest of youth in cane farming is not prominent. Adult and youth focus group participants revealed that young people in the footprint communities are not embracing labor-intensive work such as cane farming. As sugar cane is Belize's main agricultural export, this presents a concern with the fate of the industry which by statute (exclusive representation on the Sugar Industry

Control Board) is limited to the northern districts⁵⁹. Research focused on child labor in the Sugar Cane-producing communities found that 75 children (14-17 years) were identified as working or at risk of working in sugar cane production. This suggests that whereas youth may have the agency to refuse working on cane farms, children are not able to make such objections, rendering them vulnerable to labor exploitation. The potential for a protracted geriatric face to the sugar cane industry presents a concern about sustaining this major industry.

Orange Walk Town is known as the area with the highest concentration of bars per capita. While not officially documented, many of these bars are known to serve as veils for brothels fueling the country's commercial sex work and sex trafficking issues. Anecdotal data suggests that cane farmers, who travel from their villages to Orange Walk Town for work/business purposes, spend a decent amount of time frequenting these establishments, in particular, on payday. The potential for diversifying crops planted and harvested for income-generation purposes coupled with potential of localization of such crops to villages in the footprint areas, presents the possibility of economic drain on women who rely on money from this unofficial industry. Adversely, the sex trafficking issue, which for several years has marred the country's human development efforts, could potentially be disrupted.

Both San Lazaro and Yo Creek communities have vibrant women's groups which mainly focus on peer emotional support; craft production for small-scale sales; recreation/socializing; and increasing their knowledge of gender-based issues such as domestic violence. The Women's Department, the country's implementing machinery for programs geared towards the empowerment of women and the achievement of gender equality, has one social worker (Women Development Officer) dedicated to Orange Walk district. This individual relies on community ambassadors for information-sharing and mobilization. There are presently no government-funded or civil society-supported programs focusing specifically on women's non-traditional skills training, entrepreneurship or agro-business or agro-industry development in the footprint. However, San Lazaro is home to the Belize High School of Agriculture, which is one of the two reported schools that youth within the foot print area attend. Data on this school is not readily available but anecdotal information suggests that the location of this institution has made it more accessible to San Lazaro and Yo Creek youth, in particular females, who potentially would

⁵⁹ Belize Sugar Industry Act

otherwise not attend secondary school. Residents reported⁶⁰ that several teachers who of core agriculture subjects are women, which speaks to the growing embrace of women in non-traditional arenas. One young woman recalls that her female agriculture teacher at this school was a proponent of breaking gender stereotypes and roles and once told her class that “both girls and boys are expected to do field work.” It was also reported that the school has a healthy population of females, who along with their male counterparts upon completion of high school, generally pursue non-labor intensive jobs at agriculture-focused agencies.

Apart from the local stakeholders identified above, research, focus groups and interviews revealed that there are no other distinct stakeholders including women’s groups or cultural groups that would be directly impacted by this pilot project. There is an expressed concern, however, that a successful pilot project could present potential impact on the sugar industry as a result of crop diversification. This was a resounding concern which was founded on the cane farmers’ dissatisfaction with existing regulations that have reportedly resulted in their decreased profits.

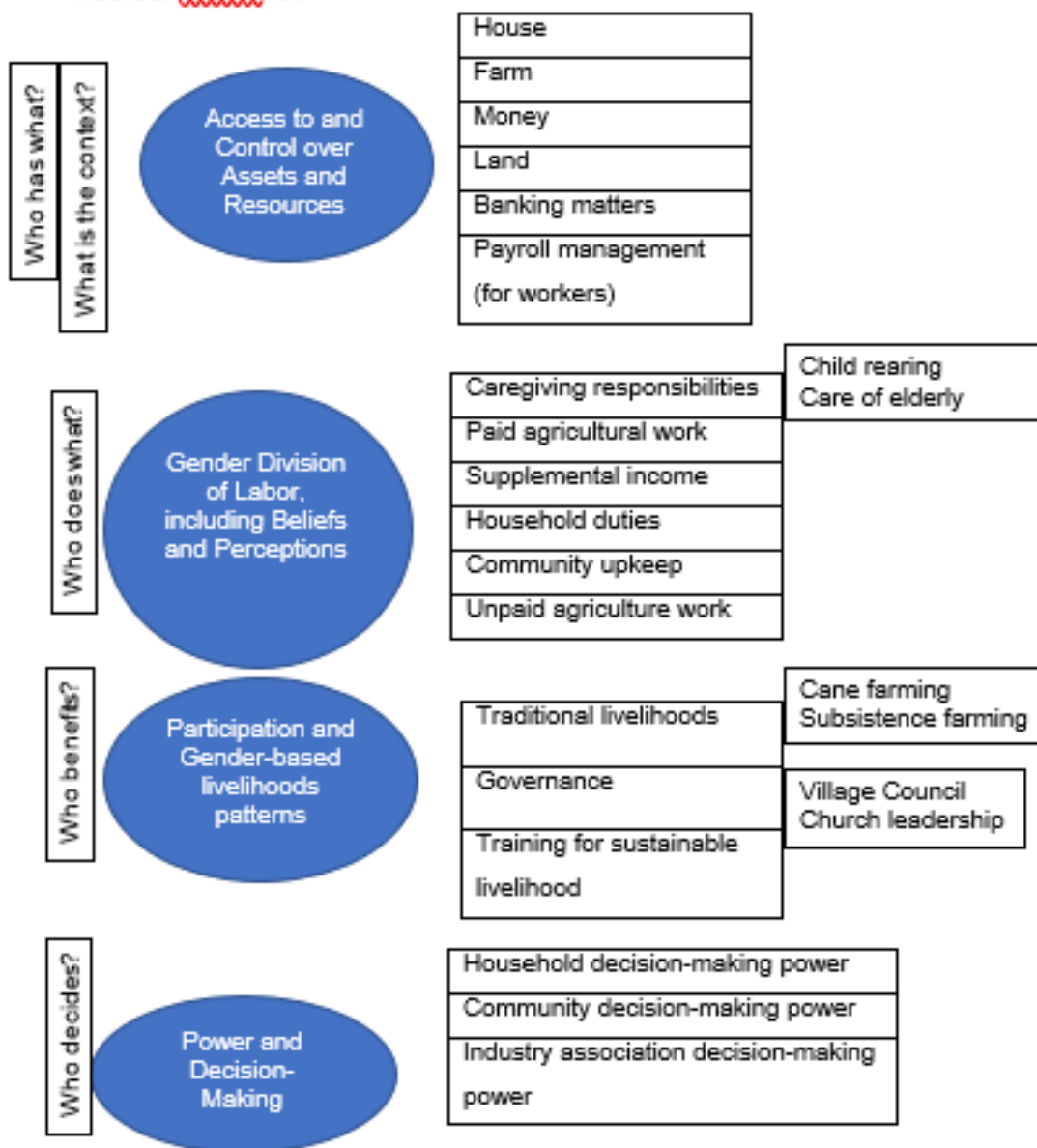
Consequently, while the mapping of impacted stakeholders is limited by the nature and focus of the pilot project, the mapping of relationships among different gender dynamics, and the tracing of the associated flows of resources in the foot print area is value-added to this gender analysis.

GENDER MAPPING: GENDER ANALYSIS FRAMEWORK

Khamati-Njenga and Clancy⁶¹ use the term “gender contracts” to describe how *“the relationship in households between men and women is shaped and enforced, and the term can also be applied in a wider context of the society in which they live.”* The focus groups revealed the socio-cultural aspects of the gender contracts in the San Lazaro and Yo Creek communities, which traditionally dictates how men and women should behave. This is depicted in Figure 1 which uses the domains of the Gender Analysis Framework as focus points to highlight the socio-political, economic and cultural aspects of this project as it pertains to the stakeholders likely to be impacted by this project.

⁶⁰ Focus group sessions held in August 2018

⁶¹ Khamati-Njenga and Clancy (2002). Concepts and Issues in Gender and Energy

FIGURE 1: GENDER MAP¹

¹ Gender Map designed by Dr. I Humes.

CONSIDERATIONS AND RECOMMENDATIONS

It is important to note that focus group sessions revealed that local farmers equated the cultivation of *Arundo donax* with that of sugar cane. However, it was explicitly clarified that it is not expected that the cultivation of *Arundo donax* will be managed like that of sugar cane.

Using the four domains of the GAF, the sections below:

- (i) highlight the assessed gender relation considerations that have identified based on the project's prescribed objectives, outcomes, outputs and activities in the design implementation period;⁶² and

⁶² Limited to information provided by 5Cs in the GEF Proposal.

- (ii) provide recommendations for incorporation into the gender and social inclusion plan of action.

ACCESS TO AND CONTROL OVER ASSETS AND RESOURCES

Considerations and Recommendations

- The control over assets and resources within the footprint communities (mainly sugar cane farming households) is disproportionately held by men. This includes marginal lands and cane fields. In instances where women own these assets, they rely on hired male workers to maintain the fields. In instances where women are registered as “cane farmers” with the sugar cane farmers associations, the fields that they are aligned with belong to their spouses or male relatives. That is, women are “cane farmers” on paper which is in an effort to maximize their household quota with Belize Sugar Industries. As the Arundo donax project will be piloted on lease land, control over land assets would not be a direct or immediate concern. However, the reality of a traditionally male-dominated agriculture industry suggests a challenging paradigm shift that would facilitate women’s direct involvement in the piloting of planting and harvesting of Arundo donax. Women would need to be intentionally engaged before and during the actual piloting. This could involve the establishment of quotas for women in terms of acreage that would be allocated to them individually and/or as women’s cooperatives or groups.
- The labor-intensive nature of harvesting this crop is not attractive to young people. This industry is not perceived by youth as being profitable or interesting. However, the presentation of this pilot as a means of youth exploration of the feasibility of agro-entrepreneurship and agro-business could establish active youth involvement in the pilot project. Additionally, measures such as introducing modern technology and mechanization of inputs could pique interest of youth resulting in their active engagement in the pilot project. As Arundo donax may be harvested mechanically, this presents an opportunity to market this pilot as one which will introduce modern technology and mechanization of inputs which could pique interest of youth resulting in their active engagement.
- While there are women who are active cane farmers working in fields, most women participating in focus group indicated that “farming is man’s work.” This is mainly attributed to the assignment of gender roles as well as the labor-intensive nature associated with harvesting crops such as Arundo donax. The involvement of women in the agriculture and energy sectors are often concentrated around administrative responsibilities versus technical ones. Notwithstanding, the likelihood of women’s involvement in the pilot project should not be dismissed because of these socially-perceived “limitations” or “barriers.” The project design could incorporate creative measures for less labor-intensive agriculture production inputs and technology that would not only facilitate women’s active involvement but could likely yield increased crop productivity.
- The project design should incorporate exploration of gender access and control by assessing the mechanisms for decision-making and control in order to understand the positions of men and women in the feasibility study and their gender relations. The gender approach to this analysis will consider access to productive activities and remunerative income-earning opportunities during pilot

phase for women and men as individuals and households. It will help with understanding women's positions on each aspect of the pilot project in order to identify possible interventions for women's entry points into it. Such an exercise will, for instance, show disparities in accessing information on learning opportunities, accessing opportunities to design, manage, implement and evaluate such programs, and accessing economic opportunities and technical knowledge.

GENDER DIVISION OF LABOR (INCLUDING BELIEFS, PRACTICES AND PERCEPTIONS)

Considerations and Recommendations

- Women undertake a significant portion of unpaid agricultural work (such as land preparation and irrigation) in addition to domestic or reproductive work and have limited control over their own labour. In households, the interconnection of women and men makes it difficult to fully understand women and men not as a social group but as individuals with different needs. Consequently, data should be collected at the community level to determine the extent of women's roles and labor burdens in agriculture including their unpaid work on their husband's fields. Unfortunately, local data is not available to substantiate the common knowledge that unpaid agricultural-based activities⁶³ (such as food preparation and washing of husband's work clothes) undertaken by women. Neither is there documented consideration for the traditional, domestic responsibilities that disproportionately add to women's workloads. That is, women maintain responsibility for preparing meals for their cane farming spouses and their workers and are additionally responsible for money management, care giving (children and elderly), and house cleaning. A woman working outside of the home for earned income is still expected to perform these tasks. The division of labor is often gender-specific skewing responsibilities for labor-intensive agricultural work to men, and household responsibilities to women. This unequal gender division of labor prejudices women's participation and productivity in agriculture. Consideration should be given to prioritizing allocation of a minimum acreage of the land in which the pilot will be undertaken to women, women's groups or women's cooperatives.
- Traditional gender contracts may hinder women from expressively indicating their interest in being actively involved in this pilot project. Adversely, women may have no interest in being involved based on socialization that prescribe their roles as unpaid workers who indirectly contribute to agricultural productivity. Therefore, the project design should incorporate targeted empowerment sessions, knowledge sharing and agriculture-based skills training for women prior to commencement of the planting phase of the pilot and ideally in the very early stages following funding approval.
- The project design to promote and facilitate women's active involvement in this feasibility project should not result in an increased workload. One way of addressing this for the contracting of food preparation (breakfast, lunch and refreshments throughout the day) for all workers to a third party. This will alleviate

⁶³ While some data exists on women's work in the informal sector it is not specific to targeted sector.

the pressure on and expectation of women to balance their involvement in paid work associated with working on the pilot project with that of traditional “gender responsibilities” to which they are accustomed. Ideally, this food preparation contract should be given to individual women or women’s groups/cooperatives in the footprint area.

- Women’s existing child rearing responsibilities will not disappear if and when they take on direct and active roles in this pilot project. Consequently, provisions should be made for women to work flexible hours and/or reduced hours so as not negatively affect their ability to provide child rearing duties.
- The absence of affirmative action and gender equity provisions could contribute to conflict between husbands and wives which must be mitigated at all costs. One way of addressing this could be community-based educational sessions for men on women in non-traditional roles and the potential for personal, social and economic benefits to the household via their direct involvement in the income-generating activities associated with being a part of this pilot project. In instances where both husband and wife are working in the project, this should be coupled with socio-cultural interventions to build ownership and should include measures that will empower women’s agency in the event that their husbands make advances to take over their income from working on the project. Furthermore, these measures should support and encourage shared responsibility in household money management so the appreciation for budgeting during financial meagre seasons is established by both husband and wives; and so that the associated burden is not disproportionately levied on either.
- Women’s mobility issues (access to safe transportation) was revealed as an issue of concern in the footprint communities. When there is the absence of reliable public or private transportation, women in Yo Creek and San Lazaro Villages opt to hitchhike to get from one community to the other. Consequently, dedicated transportation should be provided for pilot project workers. The transportation schedule should take into consideration the flexible work hours that women will be given the option of taking.

PARTICIPATION AND GENDER-BASED LIVELIHOODS PATTERNS

Considerations and Recommendations

- The communication and media needs of women need to be met. Intentional focus must be continuously given to piloting media campaigns to women and youth groups. Additionally, draft communication strategies should be shared with women’s groups to ensure that places frequented by women are targeted for information sharing on the pilot project.

- Through community consultation, women and youth should be given an opportunity to discuss exploration of agricultural livelihood opportunities associated with the pilot project based on ease of labor burden challenges that may hinder them from effectively and efficiently being involved in the project.
- Additionally, women should be consulted to ascertain the nature and type of support systems that they may require in order to play a primary or secondary role in the pilot project.
- As women and youth may have limited, informal training on agricultural production, there should be an intentional focus to ensure that they have access to participating in all capacity building and technical assistance under this project.
- An agriculture extension or livelihood training should be designed with a gender-sensitive approach and should be tailored and relevant. That is, location and time of such trainings should consider the realities of women and youth, and should ensure convenience. These trainings should be reorganized specifically for realities of women and youth in the footprint villages. Additionally, child care support should be afforded to women attending these trainings to maximize their participation.

POWER AND DECISION-MAKING

Considerations and Recommendations

- Focus group participants, in particular, cane farmers, expressed interest in diversifying their crops and welcomed the opportunity to benefit from planting and harvesting jobs in the pilot project. Several farmers indicated their discontentment with the diminished profits garnered from selling their sugar cane for sugar production and as such, would willingly replace their cane crops with *Arundo donax* if it is established as viable income-generating crop. The project's communication strategy must be intentional about accurately educating the community on the research design; that is, it is limited to the experimental stage. This includes (i) discouragement from replacing crops in an established value chain with *wild cane* that could or could not be a viable crop for income generation; (ii) explanation that this project is limited to experimental stage; (iii) clarification that the market for this pilot project is the ASR/BSI BELCOGEN plant and (iv) enlightenment that it is being proposed that the crop will be tested as a supplemental fuel that could address the limited seasonal supply of bagasse. That is, if this pilot yields positive outcomes, this biomass could enable the aforementioned company to generate the required amount of electricity throughout the year. Furthermore, it should also be communicated that any adjustments to the existing sugar cane industry, in particular as it pertains to crop diversification, would require a policy decision in energy production.
- Additionally, the communication plan must also include the short-term and unsustainable nature of this pilot project. This is in an effort for community

residents to make informed decisions about their involvement in this project inside and outside of sugar cane crop season.

- The pilot project's recruitment strategy should target residents of Yo Creek and San Lazaro Villages to work on planting and harvesting the Arundo dDonax. It should particularly target those individuals not presently actively involved in sugar cane farming as a preventative measure for negative impact on the sugar industry as a result of a pilot project.
- Consideration should be given to the wages that will be levied to those working the fields for this project from the standpoint of equity as well as the standpoint of preventative negative impacts on the industry hinged on the country's main export product.
- Furthermore, this should also be in consideration of gender equity in that equal wages will be levied for equal work without gender, sexual orientation or sexual identity discrimination in compliance with the laws of Belize so as not to disenfranchise women and members of the LGBT community. This includes provision of clean, adequate and segregated bathroom facilities for female workers and the development of a sexual harassment and non-discrimination policy for the project.
- Organizations,⁶⁴ including the Department for Women and Family Services and Department of Youth, have expressed an interest in being engaged to (i) support the recruitment of women and youth, (ii) information dissemination and (iii) training of women and youth for their engagement in the pilot project. Additionally, the national university (University of Belize) through its Environmental Research Institute has indicated its interested in being involved in the project for data collection and research purposes but indicated that there would need to be some investment in capacity building under the project to support this partnership. The University of the West Indies Belize Open Campus is presently exploring non-credit trainings/ workshops aligned with climate change, renewable energy and sustainable agriculture practices. That entity is also interested in collaboration albeit, based on staffing constraints and budgeting allocations, would need to enter into a contractual arrangement to support the project. The University of the West Indies Institute for Gender and Development Studies has expressed interest in project engagement at the regional level to ensure that the wider Caribbean is able to benefit from this feasibility and viability project.
- Socio-cultural interventions should be designed to bring awareness to the potential for women's agricultural outputs to be seen as both a source for their own wealth accumulation as well as a buffer for fluctuations in men's incomes, which are central to household survival.⁶⁵ Care must be taken to ensure that economic opportunities for women are not viewed as an attempt to usurp the role of men in the household.

⁶⁴ Personal communication with representative of named organizations by way of interviews

⁶⁵ Expert Group Meeting Enabling rural women's economic empowerment: institutions, opportunities and Participation- UN Women 2011

ANNEXES

ANNEX 1: FOCUS GROUPS REPORT ⁶⁶

Summary

The Gender Consultant (with support from the Stakeholder Engagement Consultant) on behalf of the Caribbean Community Climate Change Center organized a series of focus groups between the period of August 27-30, 2019 involving various sectors representative of the populations of San Lazaro and Yo Creek Village, being the communities in closest proximity to the identified plot for harvesting of Arundo donax. The sectors included youth, teachers, women's groups, community leaders, faith-based leaders, and cane farmers.

Through the focus groups, the Consultant gathered information on the views of women, men and youth to support the gender analysis and development of the gender action plan for the proposed Arundo donax Renewable Bio-mas fuel for Belize project.

Introduction and Methodology

The Gender Consultant (with support from the Stakeholder Engagement Consultant) held 12 focus group discussions (6 sessions in Yo Creek and 6 in San Lazaro) with 75 participants a representative sample of residents of San Lazaro and Yo Creek, being the project's main footprint areas.

The focus groups were designed to gain a qualitative understanding of attitudes and opinions concerning the situation of men and women in the respective communities as a means of ascertaining any existing gender-based vulnerabilities that exist and any inequalities that the proposed project could pose or exacerbate.

Focus group participants were self-selected from a community-based mobilization exercise that invited residents based on identified sectors.

The discussions were designed to gather information from the residents related to the following key topics:

- Commonly held beliefs, perceptions, and stereotypes related to gender in the project's footprint area.
- Inequalities that may exist in women's participation in the agriculture and energy sectors.
- Differential needs/priorities of women and men in the context of the project.
- Roles that women and men are anticipated to play in the context of the project, in terms of time commitment and need for mobility.

Focus groups sessions were disaggregated by sector. At the start of the sessions, participants were asked to "sign-in" by providing demographic information including sex and age. A summary of the project was provided. Participants were informed that could ask questions, make

⁶⁶ Focus group protocol is included as Annex 4

recommendations and raise concerns and that detailed information on the project was available in print and electronic form by request.

Participants were told:

Purpose of the focus group: *The purpose is to ascertain views and concerns from men and women about the proposed project to ensure that the Caribbean Community Climate Change Center incorporates the views of men and women in selected communities where the proposed plots of land for piloting growth and harvesting of the grass are located.*

What would happen to the information they provide: *The information from this session will be used as a part of a gender analysis and to develop a gender action plan and stakeholder engagement plan as a part of the proposal to the Green Climate Fund for funding.*

Additionally, participants were told that:

- *They could choose whether or not to participate in the focus group and that they could cease participation at any time.*
- *Their responses would remain anonymous and no names will be mentioned in the report.*
- *There were no right or wrong answers to the focus group questions.*
- *We wanted to hear many different viewpoints and would like to hear from everyone.*

Thereafter, participants were asked to indicate their verbal consent to participate in the session. It was only after this consent was received by all participants, that the Consultant proceeded with asking the focus group questions. English-Spanish translation was provided as needed.

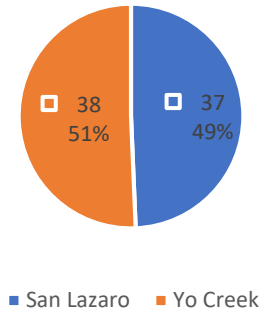
Participant Demographics

According to Statistical Institute of Belize⁶⁷, the population of San Lazaro village is 1,051 with 533 males and 518 females, while the population of Yo Creek is 1,413 with 729 males and 684 females. Data on the population by age is not collected at the local level (villages). However, data on age of population at the district level (Orange Walk) is as follows: 9,496 residents between the ages of 15-24 years; 16,357 aged 25-54 years and 4,084 residents who are 55 and older.

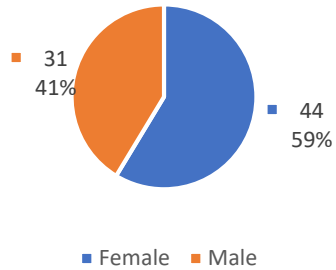
A total of 75 residents from San Lazaro and Yo Creek Villages took part in the focus groups as follows:

⁶⁷ Census 2010

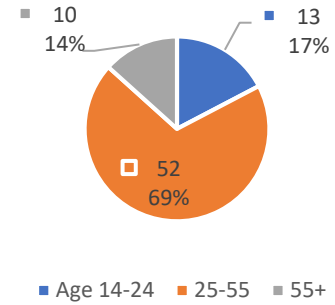
Participants by Village



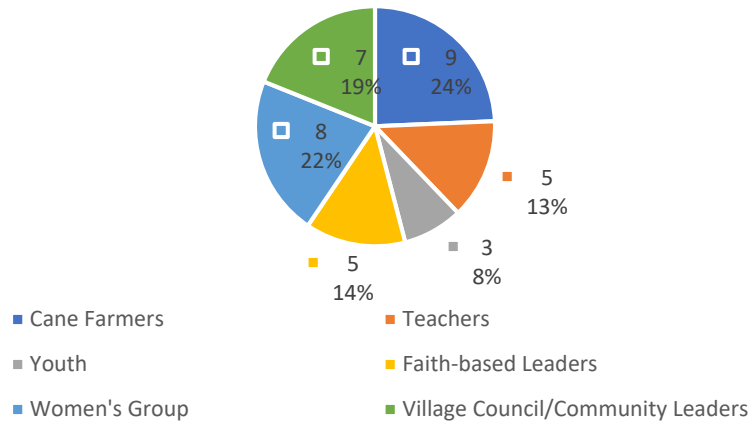
Participants by sex (San Lazaro and Yo Creek Villages)



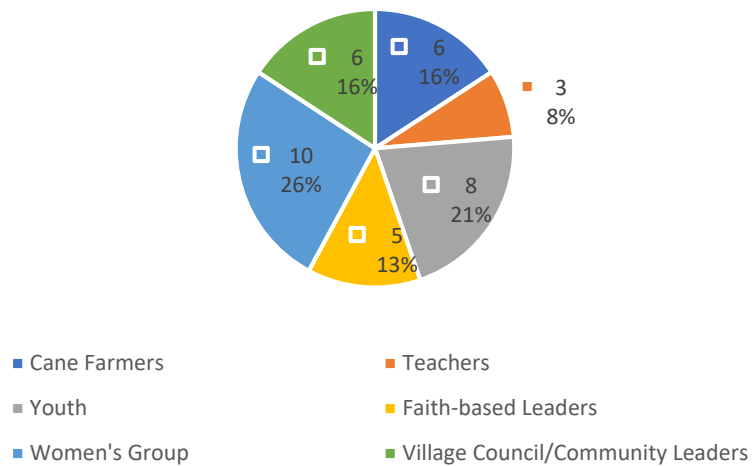
Participants by age (San Lazaro and Yo Creek Villages)



Participants by Sector (San Lazaro Village)



Participants by Sector (Yo Creek Village)



ANNEX 2: LIST OF INTERVIEWEES⁶⁸

- Taheerah Usher, Women's Department
- Esther Ayuso, National women's Commission
- Ixchell Pott, National Council on Ageing
- Judith Alpuche, Ministry of Human Development, Poverty Alleviation and Social Transformation
- Allison Brown McKenzie and Eckert Middleton. Department of Youth
- Caleb Orosco, UNIBAM
- Michele Irving, Productive Organization for Women in Action (POWA)
- Dominique Noralez, National Youth Council
- Dr. Gabrielle Hosein, Institute for Gender and Development Studies, University of the West Indies
- Jane Bennett and Dr. Sharmayne Saunders, Belize Open Campus-University of West Indies
- Dr. Elma Kay, Environmental Research Institute-University of Belize

ANNEX 3: FOCUS GROUP QUESTION TO ASCERTAIN PARTICIPANT PERSPECTIVES

Topic 1: Commonly held beliefs, perceptions, and stereotypes related to gender in the project's footprint area.

Questions:

- Tell me about the role of men in your community.
- Tell me about the role of women in your community.
- Are there any cultural beliefs about how women should behave/act?
- Are there any cultural beliefs about how men should behave/act?
- What are some expectations that you have of women?
- What are some expectations that you have of men?
- Who manages finances in the home?
- Who has control over cane fields?
- Who has control over land in your community?
- What decisions are made by women in the household?
- Is there anything that prevents women from fully participating in household decisions?
- What decisions are made by women in the functions of the community/ village council?

⁶⁸ Conducted in August 2018

- What is the traditional make up of your village council? Are there any young people?

Topic 2: Inequalities that may exist in women's participation in the agriculture and energy sectors.

Questions:

- In your community, what are some of the unfairness (inequalities) that you think exists between men and women?
- How is the work divided between women and men in the home? (role of men/women)
- How is the work divided between women and men in leadership roles in your community? (role of men/women)
- How is the work divided between women and men in terms of cane farming? (role of men/women)
- How active are women in your village in the agriculture sector?
- How active are women in your village in in the energy sector?
- Who manages finances in the home?
- Who has control over cane fields?
- Who has control over land in your community?

Topic 3: Differential needs/priorities of women and men in the context of the project.

Questions:

- What is the difference between how women and women get from this village to another village or town?
- What is the difference between how women and men get information about what is happening between cane farms and BSI/BELCOGEN?
- Is there anything that prevents women from fully participating in decisions made for the village/community?
- Is there anything that prevents women from fully participating in decisions made in sugar cane associations?
- What is the difference between how women and men participate in the cane farmers associations?

Topic 4: Roles that women and men are anticipated to play in the context of the project, in terms of time commitment and need for mobility.

Questions:

- How do you think the introduction of this grass as a possible source of renewable energy will affect women?
- How do you think the introduction of this grass as a possible source of renewable energy will affect men?

- What role do you see women playing if this new grass becomes a way for BSI to produce energy?
- What role do you see men playing if this new grass becomes a way for BSI to produce energy?
- What is the difference between how women and men get from this village to another village or town?
- What is the difference between how women and men get information about what is happening between cane farms and BSI/BELCOGEN?
- What is the difference between how women and men participate in the cane farmers associations?

ANNEX 4: FOCUS GROUP PROTOCOL

Introduction:

You have been asked to participate in a focus group for the Caribbean Community Climate Change Center for the proposed Arundo donax Renewable Bio-mas fuel for Belize.

Information about Project and Focus Group Participation

The following informed is provided at start of the focus group but not necessarily verbatim and based on the respective audiences, was presented in a manner most appropriate and amenable while ensuring that all key information about the project and the focus group are communicated.

Arundo donax is a fast-growing grass currently available and to be cultivated widely on marginal lands in Belize. The purpose of this project is to demonstrate the long-term feasibility of this bioenergy production in Belize. The pilot project would introduce this grass as a new energy crop for Belize for possible local use and export to Central America and the Caribbean. The purpose of this focus group is to ascertain views and concerns from men and women about the proposed project to ensure that the Caribbean Community Climate Change Center incorporates the views of men and women in selected communities where the proposed plots of land for piloting growth and harvesting of the grass are located. The information from this session will be used as a part of a gender analysis and to develop a gender action plan and stakeholder engagement plan as a part of the proposal to the Green Climate Fund for funding.

You can choose whether or not to participate in the focus group and stop at any time. Your responses will remain anonymous and no names will be mentioned in the report. There are no right or wrong answers to the focus group questions. We want to hear many different viewpoints and would like to hear from everyone. We hope you can be

honest even when your responses may not be in agreement with the rest of the group. In respect for each other, we ask that only one individual speak at a time in the group and that responses made by all participants be kept confidential.

Obtaining Verbal Consent from Participants

The audience is asked the following and an individual response is solicited:

Do you understand this information and agree to participate fully under the conditions stated above?

ANNEX 5: FOCUS GROUP PARTICIPANTS (SIGN-IN SHEETS)

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: Yo CreekDATE: 27/8/18TARGET GROUP: Women's Group

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Teodora Carrillo	F			✓	Domestic	608-4246
Dora Cal	F		✓		Domestic	651-3938
Libertad Cal					Came foreigner	
Dalene Martinez	F		49	✓	Manager of Cultural group	652-5453
* Cynthia Smothers	F		✓		Florist	652-3444
Geydi Burgess	F		45		Bat Removal / Women's Cooperative	660-1453
Angie Carrillo	F		✓		Farmer	650-3958
Shermadine Carrillo	F		✓		Ama de Casa	6678003
Solaceda Castillo	F		✓		teacher	635-7282
Felicite Dartun	F			✓	Ama de Casa	6604506
					—	660-8853

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: Y-CreechDATE: August 27, 2018TARGET GROUP: Church Faith-based leader

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Oscar Sattera	M		✓		Self-employed/Pastor	664-1181
Evelis Cal	M			✓	Retiree	303-2011
Janner Guagafa	M		✓		Pastor	668-2599
Angel Méndez	M		✓		Pastor	6338123
Prospero Sanchez	M			✓	Pastor	

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: Yo CreekDATE: 27/8/18TARGET GROUP: Village Leaders

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Damian Cal	M		✓		Teacher Yo Creek ^{partly} donkey	665-7707
Virgilia Gonzaga	F			✓	Housewife / water board	661-0603
Abel Sosa	M		✓		Chairman	662-8085
Alejandra Cocón	F		✓		House wife (helper Councilor)	627-8957
Adalila Pesh	F		✓		De Village Counciler	665-8324
Isidoro Castillo	M			✓		

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: Y. CreekDATE: August 28, 2013TARGET GROUP: Youth

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Darwin Cruz	F	✓			member alph + omeg youth	
Alia Cruz	F	✓			Student	
Nayelie Carrillo	F	✓			Student	
Alia Carrillo	F	✓			Student	
Alexis Hernandez	M	✓			—	
Erick Chan	M	✓			student	
Victor Chan	M	✓			Student	
Christopher Chi	M	✓				

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: Yo CreekDATE: August 28, 2018.TARGET GROUP: Teachers

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Ernesto Chi.	male		✓		assistant teacher	eachi@galen.edu.bz
Daiannie Cal	female		✓		assistant teacher	dayany4u@yahoo.com.
Shermadine Carillo	female		✓		assistant teacher	shermadine-carillo@yahoo.com.

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: 10 CreekDATE: August 2 P, 2018TARGET GROUP: Cane Farmers

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
<u>Eleani Mann</u>	<u>M.</u>		<u>47</u>		<u>Cane Farmer.</u>	
<u>Francisco J. Garcia</u>	<u>M</u>		<u>69</u>		<u>Cane FARMER</u>	<u>660 4837</u>
<u>Evangelista Botadillo</u>	<u>M</u>		<u>79</u>		<u>Cane Farmer</u>	<u>668-4971</u>
<u>Rogelio Castillo</u>	<u>M</u>			<u>✓</u>	<u>Cane farmer</u>	
<u>Gilberto Camillo</u>	<u>M</u>		<u>40</u>		<u>Cane Farmer</u>	<u>625-5896</u>
<u>RASARIO Pech</u>	<u>F</u>		<u>✓</u>		<u>Cane FARMER.</u>	

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: San LázaroDATE: 29/8/18TARGET GROUP: Village Council

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Miguel A. Caballero	M.		✓		Sales Man Chairman	667-7982 663-5156
Rosalía Cocam	F.		✓		housewife	652-6500
Elisa Dominguez	F		✓		housewife	663-7467
Juan Miguel	M.		✓		Farmer	652-8430
Lorena miguel	M.		✓		farmer	
Juana Aguirre	F		✓		Domestic	663-0610
Yohana Gonzales	F		✓		domestic	652-0273

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: San LázaroDATE: 29/8/18TARGET GROUP: Women's Group

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Margarita Ujairacacho	F		✓		House wife	630-8112
Vanessa Acuña	F		✓		House wife	652-6364
Sonia Velazquez	F		✓		House wife	
Ana Cruz	F		✓		Ho Housewife	630-8112
Isidora Flato	F		✓		House wife	633-3557
Mariel Mch	F	✓			House wife	621-3825
Reina Corado	F		✓		House wife	633-4143
Isabel Corado	F			✓	stay home	

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: San LazaroDATE: 29/8/18TARGET GROUP: Church Leaders

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Ruth Elizabeth pag	F		✓		House wife - pentecostal	661-5718
Griselda moguel	F		✓		House wife - Church of Christ	663 8952
Maribel Carrillo	F		✓		Housewife - Methodist	661-6753
Jose Cuero	M		✓		Cane farmer - Church Leadr.	660-9343
Justo N. Castillo	F		✓		Housewife - Methodist	

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: San LazaroDATE: 30/8/18TARGET GROUP: Teachers

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Graciela Maguel	Female		✓		teacher	663-8401
Perla Blanco	Female		✓		teacher	665-9447
Meliza Magaña	Female	✓			teacher	6260896
Adriana	Female		✓		teacher	653-2402
Marcela Sosa	Female		✓		teacher	651 2960

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: San LázaroDATE: 30/8/18TARGET GROUP: Youth

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Meliza Magana	Female	✓			Teacher	626 0896
Enrique Celón	Male	✓			Student	662-3035
Miguel Blanco	male				Student	

FOCUS GROUP SESSION ON

PROPOSED ARUNDO DONAX RENEWABLE BIO-MASS FUEL INVESTMENT INITIATIVE FOR BELIZE

COMMUNITY: San LazaroDATE: August 30, 2018TARGET GROUP: Cane Farmers

NAME	SEX	AGE GROUP (PLEASE PUT A ✓)			OCCUPATION	PHONE NUMBER OR EMAIL
		14-24	25-55	55+		
Manuel Blanco	M			✓	Cane Farmer	
Guadalupe Magana	F		✓	✓	Cane Farmer	
Rolando Lopez	M		✓		Cane Farmer	
Leobardo Neguel	M		✓		Cane Farmer	
Emma Carrillo	F		✓		Cane Farmers	
Antonio M. R.	M		✓		Cane Farmers	
Rodolfo Coma	M		✓		Cane Farmers	
Noel Carrillo	M		✓		Farmer	
Remy Sanchez	m		✓		CANE FARMER	