

Date: February 18, 2016

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**ONION VALUE CHAIN ANALYSIS IN NORTHERN BELIZE**

**Project Code:**

GCP/BZE/001/EC

**Project Title:**

Economic Diversification of Micro, Small and Medium Enterprises in Northern Belize

*A project implemented by the Food and Agriculture Organization of the United Nations in collaboration with the Ministry of Natural Resources and Agriculture, Belize with funding by the European Union*

**PROMOTING AGRIBUSINESS DEVELOPMENT IN NORTHERN BELIZE**

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# LIST OF ACRONYMS AND ABBREVIATIONS

BAHA Belize Agricultural Health Authority

BDF Belizean Defence Force

BMB Belize Marketing Board

BMDC Belize Marketing Development Corporation

DFC Development Finance Corporation

EU European Union

FAO Food and Agriculture Organization of the United Nations

IFAD International Fund for Agriculture Development

LICU La Inmaculada Credit Union

MAF Ministry of Agriculture, Fisheries, Forestry, the Environment

and Sustainable Development

NGOs Non-Government Organizations

PCB Pesticide Control Board

SIB Statistical Institute of Belize

SWOT Strengths, Weaknesses, Opportunities, Threats

# EXECUTIVE SUMMARY

**Introduction**

Belize has a suitable climate for agriculture along with abundant water resources. Approximately, 800,000 hectares or about 38 percent of Belize’s total land area is considered potentially suitable for farming and raising livestock. Sugar production has been traditionally the largest industry in the agricultural sector and particularly in the Northern districts of Orange Walk and Corozal, providing direct employment for about 6,000 registered cane farmers and 4,800 workers. However, it is expected that as a result of the sugar reform regime, some small scale farmers will leave sugarcane production due to their inability to remain competitive.

FAO in partnership with the EU and in collaboration with the Ministry of Agriculture, Fisheries, Forestry, the Environment and Sustainable Development (MAF) of Belize, commissioned a project in ‘*Promoting Agribusiness in Northern Belize*’, towards the diversification of the economic base of the communities in Northern Belize. This project aims to facilitate commercial agriculture-based enterprises, so as to improve income and employment opportunities in the sugar belt of Belize. This will be achieved through a multi-faceted value chain based approach targeting three existing areas of production, namely, onion, honey and sheep production. These commodities have been chosen by MAF as target commodities for their agricultural diversification programme because they are deemed to have good potential for expansion in growth and income opportunity, along with good local market potential.

This assignment elaborates a value chain and market analysis of the onion industry in Northern Belize. The onion industry in Northern Belize has significant potential for growth, but is constrained by competition from illegally imported onions, the absence of a coordinated planting programme, inadequate storage facilities and technical support. The value chain analysis of the onion industry therefore seeks to map all actors and stakeholders in the value chain, determine the total demand and supply of onions to the local market, elaborate on support services and the enabling environment and conduct a SWOT analysis of the chain. Based on the findings, an action plan for interventions focused on production, marketing, governance and policy is elaborated for development of the industry.

**Main Findings**

The size of the fresh onion market is estimated at 108,000 lbs per week, or approximately 5,616,000 lbs per year. The onion market is considered to be simple and unsophisticated, as onions are mainly sold as a fresh product through existing market channels. Demand is noted to be inelastic to price, as Belizean householders are not known for purchasing large quantities of onions. Therefore, consumers purchase quantities available on the market at existing prices.

There are four main suppliers of onions to the market, namely, local farmers, the Belize Development and Marketing Corporation (BMDC), individual importers and illegal importers. It has been observed that illegally imported onions tend to have two effects on the market, namely, supplying an unmet demand and contributing to a glut when local production comes on the market.

The main production areas for onions are the northern districts of Orange Walk and Corozal, Belize District and Cayo District (EMR Consultants, 2013). The northern districts of Corozal and Orange Walk account for approximately 60 and 25 percent of total domestic onion production, while Belize District accounts for 5 percent. Small quantities of onions are produced in the Cayo District.

The Baseline Survey Report conducted by FAO (2015) reported a total of 60 onion farmers in both the Corozal and Orange Walk districts, cultivating approximately 60 acres of onion. Major production constraints are related to establishment of the crop, initial fertilization, planting equipment, cultivation practices, moisture management and pest and disease control. Post-harvest problems include a lack of curing facilities, which adversely impacts on the shelf life of the onions. Improper storage also leads to high post-harvest losses, which is recorded between 10 to 15 percent.

The onion value chain is supported by important chain supporters and service providers, who provide mainly financial and technical services. Financial institutions play a key role in funding onion farmers and the entire agriculture sector in Northern Belize. In addition, there are other institutions that play an important role in the support, development and providing guidance to the fresh produce industry in Northern Belize such as input suppliers and the extension services. The main Government bodies supporting the onion value chain have a mandate relating to policy and regulation of imports, inputs and standards.

**Recommendations**

The development of the Onion Industry Value Chain in Northern Belize will require the implementation of specific interventions targeted at improving production and post-harvest practices, market development for onion farmers, governance mechanisms and policies to support the development of the value chain, including greater protection from illegal onion imports. As an outcome of the participatory value chain analysis exercise, a strategy in support of the development of the onion value chain in Northern Belize has been developed. This strategy is a comprehensive way to address critical factors that impact on the development this particular chain. It is based on the market situation for onions in Belize and identifies value chain issues that impede efficiency and growth.

The strategy is owned by the Value Chain Coordination Committee (VCCC) and has been designed for a 3-year period. The focus of the strategy is on process upgrading, that is, improved value chain efficiency and increased output volumes, marketable yields and reduced costs per unit of output, which will be achieved through improved seeds and agronomic practices, such as improved planting techniques, investments in fertigation, postharvest handling and improved drying and storage infrastructure. The Farmer Field School Approach will be introduced to the Agriculture Extension Service and the farming communities.

This work is complemented by elements linked functional upgrading (i.e. improved storage at farm level, marketing through agents). In this respect, grower-buyer meetings will be important to ensure regular market supplies. As well as product upgrading (enforce standards and labeling) and improvement in value chain coordination and governance, and the enabling environment.

# INTRODUCTION

Belize is located on the Caribbean coast of northern Central America, with a population of 370,300 in 2015. The country shares a land and sea border on the north with the Mexican state of Quintana Roo, a land border on the west with the Guatemalan department of El Petén, and a sea border on the south with the Guatemalan department of Izabal. Belize is classified by the World Bank as an upper middle income country with a GDP per capita of US$8,486 in 2014. Main economic activities centre on agriculture, industry and services. The World Bank notes that the country has undergone a significant transformation over the last decade resulting from the first commercial oil discovery in 2005 and emergence of the tourism industry. The economy grew by 3.6 percent in 2014, supported strongly by the agricultural and tourism sectors.

**The Agricultural Sector in Belize**

Belize has a suitable climate for agriculture along with good water resources. Approximately 800,000 hectares or about 38 percent of Belize’s total land area is considered potentially suitable for farming and raising livestock. However, only 9.7 percent of the land (about 78,000 hectares) is used for agricultural practices (Martin and Manzano 2010). The agricultural sector is important to the national economy, contributing to 15.3 percent of Gross Domestic Product and 17.9 percent of total employment. In 2015, the mid-year population of the Northern districts was estimated to be 94,996 or 25.8% of the Belizean population.

Agriculture in Belize is defined as having three main sub-sectors, namely, a well-organized traditional export sector for sugar, banana, citrus and marine products; a small scale farm sub-sector, producing food for local consumption; and a well-integrated large scale commercial sector. The principal cereal grains produced as annual crops are mainly rice, corn and sorghum, while vegetables, root crops and beans are important for the domestic market. The Mennonite community, which comprises 3.6 percent of the population, plays an important role in the agricultural sector, producing a variety of commodities and livestock. A recent census of farms in Belize shows that 24 percent of farms have less than 5 acres, 33 percent between 5 and 20 acres and 74 percent of farms in the country are below 50 acres (FAO, 2011).

Sugar production has traditionally been the largest industry in the agricultural sector and particularly in the Northern districts of Orange Walk and Corozal, providing direct employment for about 6,000 registered cane farmers and 4,800 workers employed by the industry. However, it is expected that as a result of the sugar reform regime, some small scale farmers will leave sugarcane production due to their inability to remain competitive.

**Background and Purpose of the Value Chain Analysis**

Mixed farming systems that are market-driven provide opportunities for these farmers as an alternative to sugarcane production. Providing support to the diversification of the non-sugarcane agricultural activities is currently a focus of the MAF. FAO in partnership with the EU and in collaboration with the Ministry of Agriculture of Belize, commissioned a project in ‘*Promoting Agribusiness in Northern Belize*’ towards the diversification of the economic base of the communities in Northern Belize.

This project aims to facilitate commercial agriculture-based enterprises, so as to improve income and employment opportunities in the sugar belt of Belize. This will be achieved through a multi-faceted value chain based approach targeting three existing areas of production, namely, onion, honey and sheep production. These commodities have been chosen by MAF as target commodities for their agricultural diversification programme because they are deemed to have the most potential for expansion in growth and income opportunity, along with good local market potential.

The interventions under the project will target key constraints that prevent small- scale farmers from maximizing production and earnings from onion, sheep and honey production, as well as increasing value chain efficiency in the rural communities of Orange Walk and Corozol. Strengthening the overall chains will in turn result in improved market accessibility and coverage for farmers’ products and improved earning potential. The use of a value chain approach will include market appraisal, participatory value chain analysis, design of upgrading strategies and activities and supporting value chain governance and management.

This assignment elaborates a value chain and market analysis of the onion industry in Northern Belize. The value chain analysis identifies and maps all actors and stakeholders, along with their roles and impact on the chain. It recognizes the status of local market demand and potential for further development. It also identifies strengths, weaknesses, opportunities and threats to the chain and based on findings, proposes an action plan to upgrade the industry.

# METHODOLOGY

The value chain analysis of the onion industry was developed using the following methods:

1. **Literature Review of Relevant Reports Pertaining to the Onion Industry**

Reports and information sources on the Belizean onion industry were reviewed by the consultant. These reports contained developments that had occurred in relation to the onion industry up to the initiation of FAO’s work on the value chain and served as a basis for further data collection and information gathering by the consultant.

1. **Face to Face Interviews**

Face-to-face meetings were conducted with key informants in relevant ministries and departments of Government and also non-government organizations (NGOs). These interviews allowed the consultant to have a better understanding of the situation relating to the onion industry and the scope of work that was required for the process of formulating the value chain analysis. The interviews also informed the SWOT analysis and gave a better idea of the actions required for planning an upgrading strategy. Finally, the interviews provided an impetus to the stakeholders to move the industry forward.

1. **Telephone Interviews**

Telephone interviews were used to follow-up and validate information and data ascertained through the literature review and in face-to-face meetings.   
Interviews were also done by telephone, where the person(s) were either not physically available, or out of country.

1. **Field Visits to Onion Value Chain Stakeholders**

Field visits were conducted in onion producing areas and provided the consultant with a realistic view of the existing production situation in Northern Belize. The consultant was able to gain insight of production, harvest, post-harvest (packing and storage) points along the value chain and the financial situation of onion farmers. It also allowed for on the ground assessment of available land and infrastructure.

1. **Convening of Stakeholders’ Meetings and Workshop**

Stakeholders meetings and a value chain workshop served to validate data and information obtained from existing literature and interviews. These fora also provided a platform to exchange ideas for stakeholders to find possible solutions to make the onion industry more sustainable and profitable. Reasons for earlier industry conflicts and disputes were discussed and better relationships among various actors along the value chain were also fostered at these events. It also set the stage for better business, social and organizational relationships that are necessary for further development of the onion industry.

1. **Finalization of the Report**

A final meeting was then held with the Project Team, FAO Technical Officers and the visiting FAO International Value Chain Consultant where further recommendations were made for improvement of the final document to bring it closer to stakeholder recommendations and FAO criteria. The draft was then presented and reviewed with the project team before forwarding to the FAO Representation. The draft was then technically edited, with input from the Lead Technical officers.

The application of this methodology has proven to be very effective in development of this value chain report, which will serve as a guide for the sustainable development of the Onion Industry in Northern Belize.

# HISTORY OF THE VALUE CHAIN

Belize has traditionally relied on the importation of onions from Holland and Mexico to satisfy national consumption needs. In 1989, the Belize Agribusiness Company initiated trials for the commercial production of onions in Belize. Following these successful trials, more farmers became interested and onions became a crop of interest and income generation for various Corozal and Orange Walk farmers.

In the 1990s, local onion production expanded, and supplies were enough to meet local market demand. Given the sufficiency of onion production, the former Belize Marketing Board (BMB) stopped onion imports and started to participate in the marketing and distribution of local onions. Overtime, there arose major problems between BMB, growers and even among growers, which led to a breakdown in the relationship between the two main actors. As a result of the impasse between the growers and BMB, imports were subsequently reintroduced in 2000, from Holland, Mexico, USA and Guatemala. BMB was subsequently renamed the Belize Marketing Development Corporation (BMDC).

At present, there is a mutual and informal agreement between the BMDC, the main importer, and growers on the importation of onions, with the Extension Service serving as the liaison between them. Importation of onions by BMDC is dependent on the level of local production *vis a vis* total demand.

**Demand for Onions**

It is estimated that domestic consumption of onions is approximately 108,000 pounds per week, which translates into 5.6 million pounds per year. The planting cycle of onions is from September to January, with harvesting taking place from January to the end of July. Importation of onions normally begins in August and ends in January. For most of the past years, the local production has not met weekly consumption demands during the 26 week period of supply (see figure 1 below). This is due to the absence of a well-planned and organized planting programme and inadequate storage facilities. This situation has resulted in a market saturation condition where prices plummeted to below cost of production levels and significant losses ensued, which can be mainly linked to a lack of adequate and limited storage facilities.

There are an estimated 60 onion farmers in Northern Belize, mainly is Corozol and Orange Walk, with a few in Little Belize.

Figure 1: Total Consumption and production of Onions[[1]](#footnote-1)

**Source: Ministry of Agriculture**

Local producers also face competition from onions imported illegally and legal importation from individual importers. The present situation is not conducive to the further development and sustainability of the onion industry in Northern Belize.

# OVERVIEW OF THE ONION VALUE CHAIN

The fresh onion value chain is comprised of input suppliers, farmers, importers, freighters, wholesalers, retailers and consumers. There are also entities that provide support services to the value chain, as well as enablers, that impact on the policy environment in which the chain operates. This section will provide a map of the value chain, present its cost structure and describe the main value chain actors.

## Value Chain Map

Figure 2 depicts the value chain map for the fresh onion value chain.

Figure 2: Onion Value Chain Map

60 farmers in villages in Corozol, Orange Walk & Little Belize

Technical: Prosser, SIB, Agro-Vet, BAHA, Meteorology Services, MAF Extension Services, Cooperatives

***Consumers***

Householders

***Consumers***

Commercial Users

***Retailers:*** Vendors

-Grocery

Stores

-Ambulant Retailers

Imports (BMDC, Individuals and Contraband)

**Holland, Mexico, USA, Guatemala**

Financial: Credit Unions- Saint Francis Xavier – Corozal Town, La Inmaculada – Orange Walk Town, DFC,  Commercial Banks

***Wholesalers***:

-Supermarkets

-Large stores

-Farmers

-Peddlers

-Farmers

Freighters

-Prosser Fertilize & Agrotec Company Limited

-Agro-Vet Jiron & Sons

-Bodega

-Farm Store

Farmers in:

Corozol

Orange Walk

Little Belize

**CHAIN ACTORS**

**CHAIN SUPPORTERS/SERVICE PROVIDERS**

MAF, MTICP, MFED, Land Department, BAHA, PCB, Bureau of Standards, Supplies Control, BELTRAIDE

**CHAIN ENABLERS**

**CONSUMPTION**

**FUNCTION**

## Margins along the Onion Value Chain

Based on the consultant’s review of existing prices and informant interviews with key stakeholders, for a 50lb bag of onions (see Figure 3): the consumer pays BZ$70 to the retailer; the retailer pays BZ$55 to the wholesaler; the wholesaler pays BZ$45 to the freighter; the freighter purchases it for BZ$40 from the farmer and adds BZ$5 to cover his costs and profit. The margins[[2]](#footnote-2) at the main points in the value chain are also shown in Figure 3 below.

Figure 3: Margins in the onion value chain (BZ$)

Freighter

Wholesaler

Retailer

Consumer

Farmer

Gross Revenue:

$40

$70

$55

$45

Margins:

$15.5

$15

$10

$5

The portion of the retail price obtained by each actor in the value chain is shown in Figure 4 below.

Figure 4: Share of margins in the onion value chain

Based on the analysis, the farmer obtains more than half of the total of the retail price, with the retailer and wholesaler gaining 22 and 14 percent, respectively.

## Description of Main Value Chain Actors

Table 1 details the main actors along the onion value chain.

Table 1: Value Chain Actors along the onion value chain

| ACTOR | DESCRIPTION |
| --- | --- |
| Input Supplies Companies | There are three main companies supplying Northern Belize with inputs to agricultural production. Two of these companies, Prosser Fertilize and Agrotec Company Limited and Agro-Vet Jiron & Sons have branches in the main towns of Northern Belize. The other, Bodega, supplies mainly the Mennonite Community in Little Belize and Corozal District. These larger stores are complemented by smaller farm/agricultural stores which are community based.  The larger stores provide onion seeds, insecticides, fungicides, herbicides, fertilizers, onion netted bags, small equipment and irrigation equipment. The salesman does field/site visits from time to time, promoting, introducing and advising farmers for effective and efficient usage of all chemicals and fertilizers in their inventories. |
| Farmers | Onions are produced by an estimated 60 farmers from villages in the Corozol, Little Belize and Orange Walk. They undertake planting, harvesting and post-harvest operations. |
| Importers | Importation of onions is done through legal and illegal channels. The Belize Marketing & Development Corporation (BMDC), a statutory body of the Government of Belize, is the main importer of onions. There are also other importers of onions who obtain a permit from the Belize Agricultural Health Agency (BAHA).  Illegal importers of onions normally smuggle the crop from neighboring Mexico and Guatemala, given the lower cost of these onions. This makes the business attractive to smugglers since they can be sold at lower prices than locally produced onions. |
| Freighters | A freighter is a type of middleman which plays a major role in the distribution of onions across the entire country. Some freighters operate as agents of sale and distribution for certain growers. Most freighters own their own vehicles, which are normally small to medium sized pick-up trucks and small flat-front diesel trucks. |
| Wholesalers/Hucksters | Wholesalers are individuals or businesses that purchase either onions produced locally or imported. These can be persons that buy from farmers at the farmgate, hucksters, large stores or supermarkets. The latter normally have storage facilities/space for produce. Hucksters are permanent vegetable dealers. Farmers are also wholesalers in public markets of Corozal Town, Orange Walk Town and Belize City. |
| Retailers | Retailers are normally found in public markets, where stalls are stocked with onions, as well as other items. Grocery stores, which are located conveniently almost everywhere, also retail onions which are obtained from wholesalers.  Ambulant retailers play their role by going from house to house selling their produce. Sometimes, Mennonites are also seen as ambulant retailers in Northern Belize. They ae often seen selling produce along the road side.  Farmers are also retailers in public markets of Corozol Town, Orange Walk Town and Belize City. |
| Processors | There are cottage and commercial processors which utilize onions in their product formulations. Processors such as Hot Mamas and Marie Sharpe import onions that are used in the production of their sauces. Cottage processors usually get their supplies from wholesalers. |
| Consumers | The main consumers of onions are householders and commercial users. Commercial users include restaurants, fast food stores, hotels, etc. |

### **Conclusion**

The onion value chain consists of long standing actors which supports its functions of input supply, production, post-harvest, transport, processing import and distribution. The value chain map depicts the existence of actors providing support services, the policy and regulatory environment for the value chain.

The analysis shows that the farmer has the advantage in the value chain based on the margin, *vis a vis* other actors. However, this advantage may not be readily translated into profitability given other factors such as cost of production and an inundation of the market by illegally smuggled onions from Mexico and Guatemala.

# MARKET SITUATION

The onion market is considered to be simple and unsophisticated, as onions are mainly sold as a fresh product through existing market channels. Three main categories of onions are consumed, namely, yellow, white and red, all of which are sold as dry bulb onions. The yellow onion is the most desired variety (EMRA Consultants, 2013), with consumers preferring them to be medium in size. White onions satisfy the market in the absence of yellow onions and are preferred by some commercial users.

This section will examine the size of the market, marketing channels for domestically produced and imported onions, wholesale and retail prices and conclude with highlighting some of the marketing issues affecting the chain.

## Size of the Market

This consultant estimates the size of fresh onion market at 108,000 lbs per week, or approximately 5,616,000 lbs per year (see table 2).

**Table 2:**  **Onion Consumption ANALYSIS (Lbs)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Legal Weekly Consumption** | **Illegal/Contraband**  **(20% of Consumption)** | **Total Weekly Consumption** | **Total Yearly Consumption** |
| 90,000 | 18,000 | 108,000 | 5,616,000 |

The estimate of local demand was derived from data on domestic production and legally authorized imports. The estimate for illegal or contraband onions was derived from consultations with stakeholders, including farmers and custom officials. In this analysis, it is assumed that deficits of weekly demand are supplied by illegal activities of importation and other individual importers with legal permits.

## Market Channels

The EMRA Consultants (2013) note that most of the domestic production is sold directly to “compradores’ or hucksters and other wholesalers who usually buy directly from the farm, transport and re-sell the onions to retailers. These retailers may also serve as wholesalers in the markets or re-sale onions to other end users. Hucksters also purchase onions from the BMDC in the absence of domestic production and also ‘contrabandistas’, depending on the prices.

During off season, some farmers purchase onions from the BMDC to satisfy the demand and maintain their customers. They also transport onions for long distances to sell in wholesale and retail outlets in the towns and cities (Belize City, Belmopan, San Ignacio, Dangriga and Punta Gorda).

The main onion marketing channels are depicted in Figure 5. There are four main downstream markets, namely:

1. Farmer → wholesaler and/or retailer/or huckster → consumer
2. Legal importer → wholesaler → consumer
3. Legal importer → huckster and/or farmer →retailer → consumer
4. Illegal importer (Contraband)→ wholesaler and/or retailer →consumer

**Figure 5: Marketing and Distribution Channels for Onions**

**Importers:**

**BMDC Individuals**

**Farmers**

**Contraband**

**Wholesalers**

**Farmers**

**Hucksters (Peddlers)**

**Retailers**

**Consumers**

There are two main consumers of onions in the Belizean market, namely householders and commercial users (EMRA Consultants, 2013). Householders desire a well-cured and medium-sized yellow onion. Commercial users desire a jumbo sized, white or yellow onion. Ungraded onions are typically packaged in 50 - 66 lbs unlabeled mesh bags.

Consumers of large quantities such as hotels, restaurants and supermarkets only purchase their supplies from wholesalers or retailers and sometimes, a producer. A specialty market for red onions for fresh salads exists in the food service sector. Nationally, the Northern Districts have a greater preference for white onions.

## Prices

Farm gate prices for onions are determined by two entities, namely, the BMDC and wholesalers (EMRA Consultants, 2013). Being the main importer of onion, the BMDC determines the price of the imported onion it supplies to the market, which is normally higher than locally produced onions. In times of no or low production, this price structure creates the opportunity for the illegal importation of contraband onions from neighbouring countries.

Wholesalers dominate the pricing for locally produced onions given their advantage in distribution and logistics. For locally produced onions outside of the farmgate price, there are two main prices, wholesale and retail, for which onions are sold in the market channel.

Figure 6 below shows the monthly wholesale prices for a 50 lb bag of onions in 2014.

Figure 6: Monthly wholesale prices for a 50lb bag of onion (BZ$)

**Source: Supermarkets in Corozal and Orange Walk**

The average wholesale price for 2014 was BZ$66.75, which is equivalent to BZ$1.34/lb. The wholesale price for onions reduced from a high of BZ$94.50 per 50lb bag at the beginning of the harvesting season to BZ$50 per 50 lb bag in July, at the end of the harvesting season. It should be noted that there is a glut of domestically produced onions, which drive down the prices, usually in the April to July period. Thereafter, imported onions are sold for a higher price in August, which fluctuates until December.

Figure 7 shows national retail price changes for 2013, 2014 and the first four months of 2015.

In 2014, the average retail price was BZ$1.84/lb in 2013 and increased to BZ$2.07/lb in 2014. For the first four months of 2015, the average retail price for onion was BZ$2.10. The retail prices for onions were higher in 2014 than in 2013, with the exception of December, when it was the same. In 2015, retail prices were lower than 2014 for the months of February to April.

Figure 7: National Retail Price for 2013 to 2015 ($/lb)

**Source: Statistical Institute of Belize (**[**www.sib.org.bz**](http://www.sib.org.bz)**)**

## Conclusion

Onion consumption patterns are a cultural phenomenon and the cuisine dictates its use. Demand is inelastic to price, as Belizean householders are not known for purchasing large quantities of onion. Therefore, consumers purchase quantities available on the market for the prices quoted.

There is a lack of consistency in the onions supplied to the market, as colours, sizes and quality may vary each week. Grading is not done, so onions are packaged for their weight, as opposed to their grade. In fact, it is suggested that consumers prefer medium sized yellow onions, but will purchase any onion available at a particular point in time. Outside of the varieties presented to consumers, there is no real product differentiation in presentation, that is, packaging and labelling. It has been observed that onions are sometimes improperly packed. At the retail level they are often found in clear plastic bags without holes, which results in their deterioration.

There is a lack of marketing or promotion of domestically produced onions, given the nature of the product. Marketing channels are simple and restricted to selected players, while processing of the product is confined to cottage bottlers of pickled pepper/onion table sauces. Other established processors use imported onions in their operations, given reliability of supplies. Raising the demand for onions requires more effective marketing and promotion of alternative uses. Greater market research needs to be conducted to identify opportunities for increasing local consumption of onions and onion products and for import substitution.

# SUPPLY SITUATION

As mentioned in Section 5.1, the annual supply of onions to the Belizean market is estimated at 5.6 million pounds of onions. There are four main suppliers of onions to the market, namely:

* Local Farmers – mainly from January to July;
* BMDC imports – mainly from August to January;
* Other Individual importers – no specific time; and
* Illegal/Contraband – all throughout the year.

This section details the data on supply of onions to the Belizean market, major production areas, cost of production, profitability and a description of each major category of supplier.

## Data on Supply

Figure 8 shows the yearly supply of onions by each category of supplier for the period 2011 to 2014 and the first seven months of 2015.

Figure 8: Yearly Supply Of Onions By Supply Category Of Supplier For 2011-2014 And 7 Months Of 2015

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | Yearly  Consumption | Local  Production | BMDC  Imports | Individual Importers & Contraband |
| 2011 | 5,616,000 | 2,397,980 | 1,974,972 | 1,243,048 |
| 2012 | 5,616,000 | 970,970 | 1,450,065 | 3,194,965 |
| 2013 | 5,616,000 | 1,150,450 | 2,014,831 | 2,450,719 |
| 2014 | 5,616,000 | 1,079,000 | 2,392,696 | 2,144,304 |
| 2015 | 5,616,000 | 2,682,000 | 431,637 | 2,502,363 |

Source: Belize Marketing and Development Corporation; Belize Customs; Excise Department; and consultant’s calculations

Figure 9 shows the allocation of the share of onions to the market by the main categories of suppliers. Legal and illegal imports continue to dominate the supply chain for onions. Contraband and individual importers play a major role in the supply of onions to the market in the absence of local onions. It has been noted that contraband onions tend to have two effects on the market, namely, supplying an unmet demand and contributing to a glut when local production comes on the market. Contraband onions tend to be supplied year-round. BMDC has clearly played a role in supplying the market for a six month period outside of the local onion season. However, it supplies less of the market than contraband and individual importers, due to a restricted time-period for importation.

Figure 9: Share Of Total Supply By Each Category Of Supplier\*

**\*2015 data is only for the period of January to July, which marks the onion season.**

This consultant found that local supplies to the market have fluctuated over the period under review, recording the highest allocation for the year in 2011 of 43 percent. Subsequent years have seen farmers supply 20 percent or less of total demand. Data shows that the acreage under production in Northern Belize declined from 77.75 acres in 2011 to 16.5 acres in 2014.

For the first seven months of 2015, the graph shows that contraband and individual suppliers are providing the market with an almost equal amount of onions as the local farmers. BMDC’s imports would most likely cover January, as the August to December period for 2015 was not accounted for in this analysis.

## Local Production

The main production areas for onions are the northern districts of Orange Walk and Corozal, Belize District and Cayo District (EMR Consultants, 2013). Corozal and Orange Walk Districts account for approximately 60 and 25 percent of total domestic onion production, while Belize District accounts for 5 percent. Small quantities of onions are produced in the Cayo District.

The Baseline Survey Report conducted by FAO (2015), reported a total of 60 onion farmers in both the Corozal and Orange Walk districts. In Orange Walk, there are a total of 23 farmers, with the largest pocket in San Carlos (20 farmers). The other farmers are located in the villages of Petville, Santa Martha and San Lazaro.

In Corozal, there are a total of 37 farmers, inclusive of those in Little Belize. Pockets of farmers are located in the villages of Cristo Rey (9), Xaibe (6), Patchakan (5), Altamira (3), Conception (2); San Andres (1) and San Antonio (1). In Little Belize, a Mennonite community, there are approximately 8 farms/camps with approximately 53 persons cultivating several crops including onions. The Mennonites exercise community ownership but are individual producers operating under their land governance system. They are known to have the lowest cost of production for onions, given their communal approach to agricultural production.

The EMRA Consultants (2013) noted that onion producers can be classified by production volume, as either very small (0.5-1.0 acre), or small groups that cultivate up to 6 acres. FAO’s Baseline Report of 23 farmers revealed that majority of farmers planted onions on plot sizes which varied between 0.5-1.0 acres and 1-2 acre plots.

The EMRA Consultants (2013) also noted that a small number of individual farmers lead and direct extended family groupings, cultivating up to 6.0 acres in any given year. The Mennonites in Little Belize have cultivated up to 10 acres, but manages the plots individually.

### Cost of Production

Consultations with farmers and financial institutions revealed that the average variable costs of production for one acre of onion is estimated at BZ$7,500. Capital investments[[3]](#footnote-3) are estimated to cost an additional BZ$8,500 to BZ$9,000. However, these items of equipment are usually used for more than one acre, over several years and often for a range of different crops (i.e. like carrots). The consultant estimates the total cost of production with capital investments for the first year to be in the range of BZ$16,000 to BZ$16,500 per acre.

Based on an estimated variable cost of BZ$ 7,500 for an acre and assuming a marketable yield of 25,000lbs per acre, a farmer’s gross margins start to become positive from a price of BZ$ 0.30 per lb of onion (or BZ$ 15 per 50lb bag).

The practices currently being used in the production, harvesting and post-harvest handling of onions are varied and are mostly based on experiences of trial and error, adopted practices used by other farmers or a mix of written references. Some farmers rely on input suppliers for technological guidance, and many others receive guidance from the MAF Extension Service in the district.

Major problems occurring in agronomy are related to establishment of the crop, initial fertilization, planting equipment, planting practices, moisture management and pest and disease control. The report of EMRA consultants indicates that that pre-harvest losses have a number of causes due to agronomical inefficiencies which can be as high as 40 percent of the potential yield of the preferred variety. Post-harvest problems include a lack of curing facilities, which adversely impacts on the shelf life of the onions. Improper storage leads to post-harvest losses, which range from 10 to 15 percent (MAF).

## Imports

Importation of onions is done by the BMDC, individual importers and illegal importers (‘contrabandistas’). The role of each is examined below.

### Belize Marketing Development Corporation

The importation of onions each year by BMDC begins in August and ends in January. This is the period when locally produced onions are not available or are in very low supply. The Managing Director reports that BMDC imports about 70,000 lbs, of onions every week to meet their estimated weekly demand.

BMDC imports yellow onions from Holland and yellow, white and mauve onions from Mexico. Holland and Mexico are their main countries of importation with lesser quantities coming from USA and Guatemala. There are times when they have to make emergency imports from Mexico due to forecasted or sudden shortages.

BMDC sets their prices between BZ$60 and BZ$65 per 50 lb bag of onions from Holland and BZ$70 to BZ$75 for onions from Mexico. These prices ensure a profit margin for the operations and contribute to the sustainability of the organization.

The BMDC is aware of the contraband of onions and that more needs to be done to control the points of entry and impute heavier penalties to offenders.

### Illegal Imports/Contraband

Illegal importers supply a gap in the onion market that is unmet by local production or legal imports. Contraband onions are normally trafficked from neighboring Mexico and Guatemala across the border. It appears that the contraband business is very lucrative, considering prices and quality of onions coming in mainly from bordering Mexican villages and towns.

Contraband onions are trafficked across the border throughout the year and sometimes flood the local markets. This is a major issue that is significantly affecting the viability of local onion producers in Northern Belize.

Customs officials, the police, BAHA and the Cooperative Department, with the assistance of the Belizean Defence Force (BDF) have the difficult task to control, confiscate and convict smugglers. The present situation, according to reports, shows that they are losing the battle. However, they are constrained by limited resources which negatively impacts on their presence in vulnerable areas and coordination of activities among the agencies.

Farmers expressed their wish to see a more rigid program for the control and elimination, if possible, of the contraband business of onions in Northern Belize.

### Individual Importers

Given that the legal importation of onions is not exclusive to BMDC, individual importers also supply the market through imports of onions from Mexico and Guatemala. The permit is issued by BAHA, an agency under the MAF. The quantities and frequency of these imports are unknown to the public.

Large processing companies such as Marie Sharp and Hot Mama’s also import onions to Belize. Onions are used as an ingredient to their sauces, which are primarily exported. Theses larger processing companies have an established business that supplies both local and export markets of processed products. Their continued business success and sustainability relies on a consistent supply of raw materials and cost effectiveness of production; the two primary reasons why they prefer not to source supplies locally.

## Conclusion

The aforementioned analysis shows that there is scope for an expansion of local production of onions. However, the issue of illegal importation of onions clearly poses a threat to an increase in local production if it continues to remain unaddressed.

On the production side, there is a need for technical support to producers with respect to varietal selection, field preparation, efficient planting, fertilizer management, weed control, pest control and moisture management. Together with proper post-harvest handling and storage, improved field level activities will lead to increased marketable yields and assuming that prices remain stable, increase farmer incomes. Extension services will have to play a significant role in imparting technology for onion production to growers to ensure good agricultural practices and competitive yields.

# CHAIN SUPPORTERS AND SERVICE PROVIDERS

The onion value chain is supported by important chain supporters and service providers, who provide mainly financial and technical services. Financial institutions play a key role in financing onion farmers and the entire agriculture sector in Northern Belize. In addition, there are other institutions that play an important role in the support, development and in providing guidance to the fresh produce industry in Northern Belize.

## Financial Institutions

There are three main types of financial institutions providing credit to onion farmers, namely, the government owned, Development Finance Corporation (DFC), credit unions and commercial banks.

1. **The DFC** provides crop loans to onion farmers, which operates as a “revolving line of credit”. This means that a pre-determined amount of credit, based on the cost of production, is allocated to a farmer and the total amount that is repaid is that which becomes available for the next planting season. Farmers are allowed to repay their loans as they sell their crops.

Smaller loans are guaranteed by the crop, while larger loans require security in the form of either a guarantor, or bill of sale, or real estate. The latter is rarely used by farmers seeking crop loans, because of the large sums of money involved.

DFC also offers its clients some technical support and do field inspections from time to time.

1. **Saint Francis Xavier Credit Union** provides loans to onion farmers under the Belize Rural Finance Program. This is a program with finances coming from Government of Belize, EU and International Fund for Agriculture Development (IFAD). Their loans portfolio consists of farmers from Corozal, Little Belize and San Carlos.

Members can borrow up to five times the amount of their savings up to BZ$10,000.

Loans are evaluated on the basis of the client’s capability of getting things done and ability of repayment. Refinancing on repayment schedule is available in case of uncontrolled circumstances, and depends on the amount borrowed and on the loan deficit. At the time of the study, the interest rate on loans was 18 percent per annum.

1. **La Inmaculada Credit Union (LICU)** has a very small, insignificant loan portfolio on onions. Despite commissioning the ERMA Report on the Onion Industry, they have not made strides with on-lending to onion farmers. Factors cited include, no marketing structure for local onions, huge post-harvest losses among farmers and the presence of contraband onions from neighboring countries, which adversely impacts on the sales of local onion farmers.

The rate of interest for crop loans is at 1 percent per month on the reducing balance. In order to qualify for a loan, the farmer must be a member, have a good credit history and have at least at least 10 percent of the loan in shares. If the latter condition is not met, then a guarantor, bill of sale or real estate is requested by the credit union to be used as security.

1. **Commercial banks** provide crop loans, but farmer must have a good credit history with them and most of the time, collateral is required. Interest rates are between 10% and 14½ percent per annum. The total amount loaned is usually 75 percent of the value of collateral.

Access to credit for onion farmers in Northern Belize is supported by the above captioned institutions. However, interest rates tend be high, perhaps due to the fact that security requirements are not onerous for smaller loans. Repayment is sometimes an issue with onion farmers, some of whom have found themselves to be in arrears, because of:

* Periodic market saturation conditions;
* Disease outbreaks;
* Adverse weather conditions (extended droughts, flooding, etc.); and
* Saturation of the market with contraband onions.

This situation impacts on the farmers’ capacity to repay their loans on a timely basis. Addressing production and market issues should allow farmers to be better able to repay their loans on time.

## Technical Institutions

There are institutions, including private companies that provide technical support for production, agricultural health, standards and farmer organizations. These are outlined below.

1. **Input Supplies Companies- Prosser Fertilize & Agrotec Company Limited and Agro-Vet Jiron & Sons-** These companies provide technical advice to farmers on the use of fertilizers and agrochemicals supplied by their outlets. Field/site visits are also conducted to promote, introduce and advise farmers on effective and efficient usage of all chemicals and fertilizers supplied by the respective companies.
2. **MAF Extension Services**- The Extension Services provides technical and advisory services on production, pest and disease management and post-harvest management of onions to farmers. The MAF has published and circulated an “**Onion Production Guide**” (February 2013) intended as resource material for technical personnel in research and extension. The Extension Services also serve as a liaison between the farmer and BMDC in providing production information for the importation of onions.
3. **Belize Agricultural Health Authority (BAHA)** - BAHA intervenes and provides technical support to the industry when there is a major outbreak of diseases or pests, or when there is a report of new disease(s) or pest(s) in production areas.
4. **Pesticides Control Board (PCB)** trains farmers in proper use and storage of pesticides.
5. **National Meteorological Service**- Weather information, which is critical to production, is disseminated to farmers through this entity. For instance, the office can also inform farmers of weather forecasts and conditions for certain activities, namely, harvesting, field curing, planting, etc. Data can be obtained at weekly or monthly intervals.
6. **Department of Cooperatives**- This entity plays a limited role in the onion industry as there is only one cooperative with its members currently growing onions, although doing so individually, as opposed to collectively. However, if necessary, the Department provides assistance to persons, in this case onion farmers, to form groups and train them how to function effectively and guide them in the process of making the group legally registered. It also provides training to cooperative members and support for maintaining up-to-date and accurate records.

## Conclusion

Support for financial and technical services is existent in varying degrees. For financial services, there is a sufficient number of institutions offering loans for onion production, albeit at high rates of interest, but low collateral requirements. Support for technical services for production tends to come from the extension services and input suppliers. However, farmers are still experiencing difficulties with production and post-harvest management due to the inadequacy of technical support. Government will need to take the lead in the provision of adequate technical advisory services to onion farmers to increase their adoption of appropriate technologies for production and post-harvest management.

# **ENABLING ENVIRONMENT**

## Main Institutions

The main Government bodies supporting the onion value chain have a mandate relating to policy and regulation of imports, inputs and standards. These are described below.

1. **Ministry of Agriculture, Fisheries, Forestry, the Environment and Sustainable Development-** The onion industry has been identified by Government as a strategic industry for development under its diversification programme.
2. **Belize Marketing Development Corporation -** The BMDC is a statutory body of the Government of Belize. Its main objective is to market Belizean products and to import products in the event of shortages in the Belizean market. In this regard, onions are imported by BMDC for a six-month period, when there is little or none available from local producers. They collaborate with the Extension Services to obtain production data to inform their importation of onions. BMDC also sets prices for onions, which automatically sends a signal to the market as to the minimum price for the commodity.
3. **Belize Agricultural Health Authority** is an agency of the MAF, which provides permits to importers for importation of onions. BAHA, along with the Extension Services also verifies contraband interceptions of produce by customs. If the onions are verified to be contraband, BAHA can take the offender(s) to court, or they can settle out of court. Contraband fines range from a low of BZ$200 to a high of BZ$2,000. If settled out of court, the fine can be negotiated and paid to BAHA. This fine goes into BAHA’s general revenue fund.
4. **The Belize Bureau of Standards’** responsibility is to give an import permit to importers after the Ministry of Agriculture has approved the quantity of onions to be imported. The Bureau also develops quality standards and consumer protection activities.
5. **Pesticide Control Board (PCB)** approves and regulates the use of pesticides, including those for the onion industry. Emphasis is also placed on consumer protection and in the proper usage and storage of pesticides as a whole. The Board imposes a fee of 2% of the CIF value of the pesticides being imported. Farmers’ registration involves a token fee of $5.00.

## Conclusion

The onion value chain benefits from policy support and an appropriate institutional framework to guide standard setting, agricultural health and food safety. However, local producers need more support from authorities to reduce the inflow of contraband onions from neighbouring countries. There needs to be more collaboration among the agencies responsible for border protection and an increase in the penalties to curtail this practice. This will ensure that producers get better prices for their onions, which will increase the profitability of their operations.

One important aspects of the enabling environment is the branding and labeling of onions in Belize. Onions sold at any market need to have a sign or label indicating the name of the variety and the place of origin. The Ministry of Agriculture would need to initiate such a regulation and have it developed by the Bureau of Standards and monitored through the respective law enforcement units at the different market places.

# SWOT ANALYSIS OF THE ONION VALUE CHAIN

The SWOT analysis of the onion value chain, presented in table 3, highlights the strengths of the onion industry at the level of producer, production areas, support services and enabling environment. It pinpoints weaknesses pertaining to markets, marketing, production and post-harvest issues, as well as inadequate technical support.

Opportunities relate to an unsatisfied demand and the ability to introduce new technology for production and post-harvest management. Threats identified centre on marketing, pricing, unstable weather and the adverse impact of pest and disease on production.

**Table 3: SWOT Analysis of the Onion Value Chain**

|  |  |
| --- | --- |
| **Strengths** | **Weaknesses** |
| * Experienced farmers. * Ability to keep labour costs low by using family labour. * Availability of appropriate production technologies. * Availability of appropriate inputs. * Availability of water for irrigation. * Availability of land for production. * Technical support available to farmers through the Extension Services and other Government agencies. * Land tenure of farmers. * Established local market for onions. * Acceptable standard of road network for transportation of produce. * Availability of standards / grades for onions. * Financing without onerous collateral requirements available to farmers. | * Inadequate knowledge of appropriate production technologies for onions. * Limited production season for local onions. * High costs of inputs. * Low quality of locally produced onions. * Limited coverage of extension officers for farm visits and advice on technical production practices. * Lack of adequate storage, curing and packaging facilities. * Low prices to farmers due to over-supply. * Lack of knowledge/use of grades and standards for onions. * Absence of a well-planned planting program. * Poor organization of farmers. * Disorganized marketing and distribution channels. * Lack of effective communication among value chain actors and other stakeholders. * Mistrust along the value chain. * Limited confidence in the industry among stakeholders. * Inundation of the market by contraband onions. |
| **Opportunities** | **Threats** |
| * Adoption of improved technology for onion production and post-harvest can improve yields and marketable production. * Potential to significantly increase local production to supply market. * Potential for organizing farmers for a well-planned planting, marketing, and distribution program and for the implementation of quality standards. * Introduction of regulation for labelling of onions, including indications of place of origin. * Enforce existing regulations on grading and standards, as well as labelling. | * New and major field and post-harvest diseases. * Praedial Larceny. * Low wholesale prices during harvest season. * Contraband onions threaten the viability of local production. * Competition from legal individual importers who have access to the same market channels as local producers. * Unstable weather during the hurricane season affect crop establishment. * Adverse weather conditions during the growing season (drought, flooding). |

# FINDINGS AND RECOMMENDATIONS

Local onion production in Northern Belize is here to stay. Farmers are convinced that it is one of the best cash crops in the Government’s import substitution program. Thus, onion farmers in general are motivated to participate in a more organized and well planned local production program, where they can make a decent living and supplement income generation with other farm activities.

The importation of onions, as the BMDC has expressed, is to supply the local market when the local production is out of season and to supplement low volume supplies. The lack of efficient communication, coordination and effective business relationship with farmers has caused gluts in the local market. This was experienced in the year 2011, when onion growing conditions were most favourable, farmers and BMDC oversupplied the local market, which resulted in major losses to both parties.

The illegal importation of onions is a major hindrance to the sustainable development of the onion industry. Mexico is very close to Northern Belize and border entry points are open, with limited control and surveillance. Furthermore, the prices and quality are attractive, and the fines do not provide the necessary disincentive, so smugglers are willing to take the risk. Authorities are lacking resources to address the situation, but are not coordinated in their efforts. They also lack the resources to adequately patrol the border.

With respect to production, major problems are related to establishment of the crop, fertilization, planting technology, planting practices, moisture management and pest and disease control. Major losses have been experienced due to the lack of post-harvest technology, mainly the curing and storage of the fresh produce. This has also resulted in less acreage being planted and farmers’ participation throughout the years. Famers believe that with access to appropriate technology at field and post-harvest level and given the optimum growing environment, they can supply the local market for nearly the whole year.

The lack of organized farmers and farmer groups is adversely impacting the industry. Farmers need to organize themselves be effective advocates for development of the onion industry, collaborate on issues of mutual interest. They need formal and effective representation at all levels to more effectively participate in the onion industry. Working collectively is one of the best ways to get support for the introduction of the most needed post-harvest technology for curing and storage of fresh onions. This technology will assist in alleviating the problems in production, longer period of availability of locally-produced onions and marketing activities, thus leading to better quality and prices.

BMDC and farmers also need to work together to address some of the marketing problems affecting the onion industry. Both parties would benefit enormously and the partnership would enhance the sustainability of the onion industry.

Based on the findings of this study, recommendations for a viable onion industry in Northern Belize are outlined below:

* Build capacity of farmers to adopt relevant technologies and good agricultural practices in production and post-harvest management of onions.
* Provide knowledge resources, such as production guidelines and factsheets to farmers, to facilitate capacity building and information dissemination.
* Collaborate with stakeholders to invest in a facility for the curing, storage and packing of fresh onions.
* Lobby for the creation of a dedicated line of credit for onions from the DFC, which falls under the purview of the Ministry of Finance and Economic Development.
* Implement coordination mechanisms among producers, BMDC and the MAF for the supply of local onions to the market to prevent gluts and streamline pricing.
* Coordinate the organization of the value chain to improve relations and collaboration among actors for development of the value chain. Actors that will positively contribute to supporting the value chain can also be invited to participate on the relevant committees. These include Escuela Mexico, the University of Belize, BELTRAIDE and other technical and financial institutions.
* If necessary, update, grades and standards for onions, conduct training on their use and disseminate to stakeholders.
* Improve marketing of local onions by promoting product differentiation through grading for different market segments, proper packaging and labeling and awareness building of local consumers.
* Devise strategies to reduce the smuggling of onions across the border and its release on the local market. These may include increased surveillance, monitoring, review of penalties and fines and implementation of an awareness campaign to end users.
* Assess the potential for export and processing markets in contemplation of future expansion of the industry.

These conclusions and recommendations made in this report and the additional recommendations made by stakeholders at the onion stakeholder workshop, form the basis for the development of the Value Chain Upgrading Strategy and Action Plan that is detailed in the next chapter.

# ONION VALUE CHAIN UPGRADING STRATEGY AND ACTION PLAN

## Onion Value Chain Upgrading Strategy

As an outcome of the participatory value chain analysis exercise, a strategy in support of the development of the onion value chain in Northern Belize has been developed. This strategy is a comprehensive way to address critical factors that impact on the development this particular chain. It is based on the market situation for onions in Belize and identifies value chain issues that impede efficiency and growth.

The strategy is owned by the Value Chain Coordination Committee (VCCC) and has been designed for a 3-year period. The focus of the strategy is on process upgrading: improved value chain efficiency and increased output volumes, marketable yields and reduced costs per unit of output which will be achieved through improved seeds and agronomic practices, such as improved planting techniques, investments in fertigation, postharvest handling and improved drying and storage infrastructure. The Farmer Field School Approach will be introduced to the Agriculture Extension Service and the farming communities.

This work is complemented by elements linked functional upgrading (i.e. improved storage at farm level, marketing through agents). In this respect, grower-buyer meetings will be important to ensure regular market supplies. As well as product upgrading (enforce standards and labeling) and improvement in value chain coordination and governance, and the enabling environment.

**Vision Statement:**

To enhance the competiveness of the onion value chain and increase stakeholders income.

***Component 1: Production***

Objective: To increase the productivity and extend the growing season for higher volumes of market of supplies locally produced onions.

***Component 2: Marketing***

Objective: To stabilize income and ensure fair profit margins for value chain actors through stable and regular market supplies of local onions over an extended period of the year.

***Component 3: Governance***

Objective: To effectively manage the value onion value chain development.

***Component 4: Policy***

Objective To develop support mechanisms to promote and support the local onion industry.

***Component 5: Knowledge***

Objective: To develop knowledge materials and promote exchanges amongst stakeholders.

In order to guide the actors to improve their performance and get a larger profit share of the value added to the production and marketing of onions, support activities have been developed and grouped under each of the five components. A detailed action plan for the implementation of this upgrading strategy is provided in the following section. While the strategy implementation will be guided by the VCCC, there are specific roles and tasks for each of the actors and stakeholders in the value chain, including the Government. The responsible parties for particular actions are listed in the final column of the action plan table.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **GCP/BZE/001/EC – PROMOTING AGRIBUSINESS DEVELOPMENT IN NORTHERN BELIZE**  ***Onion Value Chain Upgrading Action Plan***  ***2015 - 2017*** | | | | | | | |
|  | **Strategy** | **Action** | **Means** | **Responsible party** | **Deadline** | **Location** | **Budget** |
| ***Objective 1: To improve the competitiveness and consistency of onion production and enhance post-harvest practices*** | | | | | | |
| * 1. Improve production through enhanced agronomic practices and technologies | * + 1. Select appropriate onion variety according to varietal trials | MAF | MAF | 2015 | Orange Walk |  |
|  | * + 1. Conduct soil test on three demo plots | FFS/TOT | Sergio  Canto | 2015 | Corozal (CZL)  Orange Walk (OW) |  |
|  | * + 1. Develop and implement appropriate fertigation plan for three demo plots | FFS/TOT | Sergio  EO  Farmers | 2015 | CZL  OW |  |
|  | * + 1. Demonstrate best practices in pest and disease management to farmer field school participants | FFS/TOT | Sergio  EO  BAHA | March | CZl  OW |  |
| * 1. Improve post-harvest practices to extend local onion supply | * + 1. Construct 2 and upgrade 2 onion storage units | Consultant to provide specs | Sergio  Canto | Upgrade in CZL by March 2016 and the other for next season (January 2017) | CZL  Ow |  |
|  | * + 1. Demonstrate best practices in curing, harvesting and storage of onions to farmer field school participants | FFS/TOT | Sergio  EO | March 2016 Corozal |  |  |
| * 1. Improve farm management practices | * + 1. Train farmer field school participants in record keeping | FFS | Sergio  EO | March 2016 | CZL  OW |  |
| Marketing | ***Objective 2: To improve marketability of local onions*** | | | | | | |
| * 1. Enhance public awareness | * + 1. Develop and implement campaign adds “Buy Local” on national and local television and radio | Press Office | Sergio | March 2016 | National |  |
| * 1. Partner with national value chain stakeholders | * + 1. Advocate for marketing possibilities with private stakeholders and government bodies | Hold meetings with stakeholders | Canto  Sergio  MAF | Next season  (January 2017) | CZL  OW |  |
|  | * + 1. Design and implement planting schedules and supply programs for onion farmers in order to guarantee a steady supply of local onions | MAF | MAF  EO  Sergio | September | Corozal  Orange Walk |  |
|  | * + 1. Promote farmer linkages for market information exchange | Database with farmer contact information | Sergio  EO  MAF | March | CZL  OW  Belize (BZ) |  |
| * 1. Implement standards of quality | * + 1. Review existing standards and support implementation. | Bureau of Standards | Canto  MAF | September for next season |  |  |
|  | * + 1. Train farmers in the implementation of standards. | Bureau of Standards | Canto  MAF | September for next season |  |  |
|  | * + 1. Train farmers in the design and use of labels (which should also act as a certificate of geographic origin) | Bureau of Standards | Canto  MAF | September for next season |  |  |
| Governance | ***Objective 3: To establish effective mechanisms for management of the value chain*** | | | | | | |
| * 1. Establish a coordinating committee | * + 1. Establish a Value Chain coordinating committee with stakeholders from the entire chain | Hold meeting with stakeholders | Sergio  Canto | Every two months starting on February | CZL  OW |  |
| * 1. Organize farmers into groups | * + 1. Advocate for farmer group formation through the Cooperative Department of Belize | Cooperative Department to hold meetings | Hector (Coops)  Sergio  Canto  EO  MAF | September for next season |  |  |
|  |  | * + 1. Develop and monitor database for onion farmers | MAF | Sergio  EO  MAF  BAHA  Customs | March |  |  |
| Policy | ***Objective 4: To create an enabling environment to support the growth of the local onion industry*** | | | | | | |
| * 1. Reduce illegal importation of onions | * + 1. Advocate for the review fines and reinforce existing laws on illegal importation | VCCC, MAF | Canto  BAHA  Customs | March | National for movement of onion |  |
|  | * + 1. Advocate for the revision of the monitoring permitting system for movement of onions | MAF | MAF | March |  |  |
|  |  | * + 1. Advocate for collaboration of relevant agencies in enforcing legislation pertaining to illegal importation of onions. |  |  |  |  |  |
| Knowledge | ***Objective 5: Enhance capabilities of producers and extension officers in onion production and post-harvest technologies*** | | | | | | |
| * 1. Promote knowledge exchange within stakeholders | * + 1. Conduct 1 farmer field visit to Yucatan Mexico for 7 farmers | Coordinate with SAGARPA Mexico | Sergio  Canto | July | Puebla Mexico |  |
| * 1. Provide technical resources for capacity building of key stakeholders | * + 1. Revise and update 200 technical onion manuals for extension officers | Consultant  MAF | Sergio  Canto  EO  Consultant | August |  |  |
|  | * + 1. Develop and publish 250 onion fact sheets on onion production, post-harvest and investment profiles | EO  MAF | Sergio  EO | August – March (during season) |  |  |

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4. Leonardo Eck, Onion Reports, 2013-2015, Ministry Of Agriculture, Orange Walk Town.
5. Ramroop, Deanne, 2015, Baseline Survey Report (Onion), Economic Diversification of MSME-Enterprise in Northern Belize, FAO.
6. [www.worldbank.org](http://www.worldbank.org)

# CONSULTATIONS

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29. Floyd Robinson, Customs branch, River Side Street, Orange Walk Town.
30. Margarito Garcia, Head of Quarantine, BAHA, Central Farm, Cayo District, phone:610-2939.
31. Deanne V. Ramroop, Baseline Survey Report (Onion), Economic Diversification of MSME-Enterprise in Northern Belize, July 2015.
32. Edwardo Zetina, Agriculturalist , Union Town, Orange Walk Town.
33. Anastacio Poot, Farmer, PatchakanVillage, Corozal District.

**Organizations**

1. Bureau Of Standards, Constitution Drive, Belmopan,822-0446,0447.
2. Belize Animal Health Authority, Hummingbird Hway, Belmopan,822-0197.
3. Ministry of Natural Resources and Agriculture, Main office, Belmopan.
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6. BAHA, Quarantine Section, Central Farm, Cayo District,824-4873.
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9. Belize Bank, #34 Main Street, Orange Walk Branch, Orange Walk Town, 322-2019.
10. Saint Francis Xavier Credit Union Ltd., 70,933333399 5th Avenue, Corozal Town, 422-2892.
11. Pesticides Control Board, Central Farm, Cayo District, 824-2640.
12. Belize Marketing & Development Corporation, Belize City, Telephone 227-2585

# ANNEX I-WORK SCHEDULE

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PROMOTING AGRIBUSINESS DEVELOPMENT IN NORTHERN BELIZE | | | | | | | | | | | | | | | | | | | |
|  | Analysis of the Onion Value Chain | | | | | | | | | | | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | Months | | | |  |  |  |  |  |  |  |  |  |
|  | 2015 | **May** | | **June** | |  |  | **July** | |  |  | **August** | |  |  | September | | |  |
| Activity | Status | W3 | W4 | W1 | W2 | W3 | W4 | W1 | W2 | W3 | W4 | W1 | W2 | W3 | W4 | W1 | W2 | W3 | W4 |
| **1. Literature review** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **2. Suppliers interviews & Importer** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **3.FarmersInterviews&other Actors** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **4. Field visits** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **5. Draft preliminary report** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **6. Continue fine-tuning** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| report after comments |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **7. Participatory Value Chain** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Analysis with Project Team |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **8. Actors & Stakeholders** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Meetings |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **9. GAP Analysis & Markets** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **10. Finalizing Report for** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Review by FAO |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **11. Development of VCUSAP with** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Project Team with implementation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| matrix and other supporting |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| training materials and inputs |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| for adequate management |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| and organization of farmers. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **12. End of assignment Report** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# ANNEX 2- COSTS OF PRODUCTION

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. **Capital Investment- Under Irrigation** | | | | |
|  | **Unit** | **Amt.** | **Cost** | **Total Cost** |
| **Well- 8 inch bore with Pipes (PVC) 3 lengths of 20 feet.** | **60 ft.** |  | **4000** | **4000** |
| **Water pump 5.5 Hp (centrifugal)** |  | **1** | **500** | **500** |
| **Bi-wall (10,000 ft. roll)** |  | **3** | **625** | **1875** |
| **Filter 2 inch** |  | **1** | **350** | **300** |
| **Hose 2 inch - Main** |  | **1** | **600** | **600** |
| **Suction Hose 2 inch (length)** | **30 ft.** |  | **125** | **125** |
| **Fertigation injector** |  | **1** | **600** | **600** |
| **Accessories – valves, connectors, take-offs, clamps, couplings etc.** |  | **all** | **500** | **500** |
| **Total** |  |  |  | **$8500** |

1. Data is based on a 26 weeks period of local supply as compared to total consumption data during same period (January-July) [↑](#footnote-ref-1)
2. The margins have to be covered by the costs incurred by the different actors along the value chain. If we know the costs, risk and efforts each actors has to add value to the product and get it to the next “stage”, we can estimate the profit each actor makes and discuss whether the value is shared fairly. [↑](#footnote-ref-2)
3. Capital investments include a well, water pump, main irrigation hoses and other small equipment – e.g. knapsack sprayer, planter etc. [↑](#footnote-ref-3)