NATIONAL SUGAR DEVELOPMENT COUNCIL
4TH FLOOR, BLOCK C, PHASE II
(HEAD OF SERVICE COMPLEX),
FEDERAL SECRETARIAT, MAITAMA,
P.M.B. 299-GARKI,
ABUJA, FCT, NIGERIA
E-mail: contact@nsdc.gov.ng
Website: www.nsdc.gov.ng

# NIGERIAN SUGAR MASTER PLAN


*NSMP..... Revolutionizing Nigerian Sugar Sector*

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# Acronyms

| | |
|---|---|
| Pro-Alcool | Brazilian Programme for Alcohol Development |
| BIP | Backward Integration Programme |
| BOI | Bank of Industry |
| BOA | Bank of Agriculture |
| BPE | Bureau of Public Enterprises |
| BORBDA | Benin/Owena River Basin Development Authority |
| CBN | Central Bank of Nigeria |
| CEO | Chief Executive Officer |
| C/lb | Cents/pound |
| DSR | Dangote Sugar Refinery |
| EMIT | Economic Management Implementation Team |
| ERC | Estimated Recovery |
| ES | Executive Secretary |
| ETE | End-Term Evaluation |
| EU | European Union |
| FEC | Federal Executive Council |
| FI | Financial Institution |
| FMA&RD | Federal Ministry of Agriculture and Rural Development |
| FMF | Federal Ministry of Finance |
| FMH | Federal Ministry of Health |
| FMP | Federal Ministry of Power |
| FMTI | Federal Ministry of Trade and Investment |
| FMW | Federal Ministry of Works |
| FMWR | Federal Ministry of Water Resources |
| Ha | Hectare |
| HIV/AIDS | Human Immuno- Deficiency Virus/ Acquired Immune Deficiency Syndrome |
| HJRBDA | Hadejia/Jamaare River Basin Development Authority |
| HMTI | Honourable Minister of Trade and Investment |
| IAR | Institute of Agricultural Research |
| ISO | International Sugar Organization |
| JSC | Josepdam Sugar Company |
| KPIs | Key Performance Indicators |
| LNRBDA | Lower Niger River Basin Development Authority |
| MAN | Manufacturers Association of Nigeria |
| MDAs | Ministries, Departments and Agencies |
| MMT | Million Metric Tonnes |
| $Mm^3$ | Cubic Millimeter |
| MTE | Mid-Term Evaluation |
| MW | Mega Watt |
| NAFDAC | National Food & Drugs Administration and Control |
| NAIC | Nigerian Agricultural Insurance Corporation |
| NCCI-03 | 3rd National Council on Commerce and Industry |
| NCRI | National Cereals Research Institute |
| NCS | Nigeria Customs Service |
| NISUCO | Nigerian Sugar Company |
| NPC | National Planning Commission |
| NSDC | National Sugar Development Council |
| NSMP | Nigerian Sugar Master Plan |
| PHCN | Power Holding Company of Nigeria |
| Pol | Polarity |
| QRM | Quarterly Review Meetings |
| R & D | Research and Development |
| SIF | Stakeholders Interactive Forum |
| SON | Standards Organization of Nigeria |
| SOSP | Stakeholders Organization Strategic Plans |
| SSCL | Savannah Sugar Company Limited |
| SURMIC | Sugar Road Map Implementation Committee |
| S/N | Serial Number |
| $/t | US Dollar per tonne |
| TCD | Tons Cane per Day |
| TCH | Tons Cane per Hectare |
| TCY | Tons Cane per Year |
| TRQ | Tariff Rate Quota |
| TS | Tons Sugar |
| TORs | Terms of Reference |
| UBRBD | Upper Benue River Basin Development Authority |
| USA | United States of America |
| USDA | United States Department of Agriculture |
| USRI | Unilorin Sugar Research Institute |
| WTO | World Trade Organization |

# Foreword

The Nigerian sugar industry is by no means young, having been first established in the 1960s. It can however be regarded to still be in its infancy given the fact that today, it only supplies about 2% of the nation's requirement, in spite of our comparative and competitive advantages for sugar production. This lacklustre performance has deprived the country of all the benefits derivable from a vibrant sugar sector. Chief among these are the annual drain on the nation's foreign exchange earnings put at N101.9 billion in 2011, the loss of hundreds of thousands of employment opportunities for skilled and semi-skilled labour and food insecurity arising from sugar import dependence. But all these are about to change now.

In 2008, the Federal Government of Nigeria directed the National Sugar Development Council (NSDC), to develop a road map for the attainment of self-sufficiency in sugar within the shortest time possible. In compliance, the Council came up with the ***Nigerian Sugar Master Plan*** an abridged version of which is the main subject of this slim volume.

The Plan has estimated that our demand for sugar would breach the 1.7 million metric tonnes (MMT) mark by 2020. To be able to satisfy this from domestic production, we will need to establish some 28 sugar factories of varying capacities and bring about 250,000 hectares of land into sugarcane cultivation, over the next 10 years. The bulk of the investment capital will come from private investors.

Having a road map however is not enough there is also the need for a conducive policy environment which will provide a solid base for its implementation. Borrowing from international best practice the Government has therefore enacted a number of policy instruments comprising mainly of ***fiscal incentives and tariff***, a mandatory import substitution regime otherwise known as the ***Backward Integration Programme (BIP),*** as well as the re-focussing of a better funded ***Sugar Levy*** to provide the funds required for the execution of the much needed R&D studies and essential infrastructures, all of which are designed to not only attract new investors but also protect both existing and new investments in the sector.

The approval of the NSMP by the Government and its adoption as the strategic road map for the development of the sugar sector as well as the enactment of the conducive policy environment for its implementation are clear demonstration of this Government's commitment to revitalizing this important sector and make it occupy its pride of place in the nation's industrial landscape.

Let me therefore conclude this by extending our hand of invitation to the investing public to come into Nigeria's sugar sector. We have the market (over 167 million strong) as well as all the natural endowments needed to produce sugar for our consumption and export to the neighbouring West African sister nations.

**Olusegun Aganga**
**Honorable Minister of Trade & Investment**
5th October, 2012

# Chapter 1

# Introduction

## 1.1 Brief History of the Nigerian Sugar Master Plan (NSMP)

The National Sugar Development Council (NSDC) developed this strategic roadmap for the development of the sugar sub-sector in 2008, in response to a Presidential directive. The 3rd National Council on Commerce and Industry (NCCI-03), held in Kano in May, 2010, deliberated and accepted the measures proposed in the Master Plan and recommended same for Federal Executive Council's consideration and approval.

The Federal Executive Council had considered a memorandum titled, "**Roadmap to Local Manufacturing of Sugar: The Nigerian Sugar Master Plan and a Regime of Fiscal Incentives**" on 22nd October, 2010 and referred the memorandum to the Economic Management Implementation Team (EMIT) for evaluation and the inputs from relevant MDAs before re-presentation to Council. Following series of EMIT meetings and individual consultations with relevant key agencies of Government, the NSMP and memorandum had been amended to reflect the comments made by Council members at the initial consideration in October, 2010 and to incorporate the inputs of relevant MDAs such as Finance, Agriculture, National Planning Commission, Water Resources, Health, Office of Chief Economic Adviser, etc.

Finally, at its meeting held on Wednesday, 19th September, 2012, the Federal Executive Council (FEC) approved the Nigerian Sugar Master Plan (NSMP) as well as a number of policy measures and a regime of fiscal and investment incentives designed primarily to provide a conducive environment for its implementation.

## 1.2 Reasons for the Road Map

The justification for a sugar sector road map stems from the following facts:

- The Nigeria Customs Service (NCS) reveals that the country spent a yearly average of approximately N30.0 billion, on the importation of sugar over the last decade;
- In 2009 and 2010 and 2011, Nigeria expended N53.6 billion and N73.0 billion and N101.9 billion on sugar importation respectively;
- Significant investments have been made in developing sugar refineries, all of which however rely on imported raw sugar;

Nigeria urgently needs complementary investments in sugarcane plantations and on the entire sugarcane value chain in order to gain maximum benefits from the industry. This need, coupled with the lackluster performance of the sector necessitated the development of the road map.

## 1.3 Objectives of the Nigerian Sugar Master Plan (NSMP)

The Master Plan has been developed with the following major objectives:

1. To raise local production of sugar to attain self sufficiency;
2. To stem the tide of unbridled importation;
3. To create huge number of job opportunities and
4. To contribute to the production of ethanol and generation of electricity.

# Chapter 2

# Background

## 2.1 The Global Sugar Scene

Information obtained from the International Sugar Organization (ISO) reports revealed that:

* Out of the total 167mmt of sugar produced in 2011, 65.4% was consumed in the producing countries;
* About 7.7% was traded bilaterally under preferential trade agreements among regional blocks; and
* The balance 26.7% was traded in the global free market, where Nigeria buys its own sugar supplies.

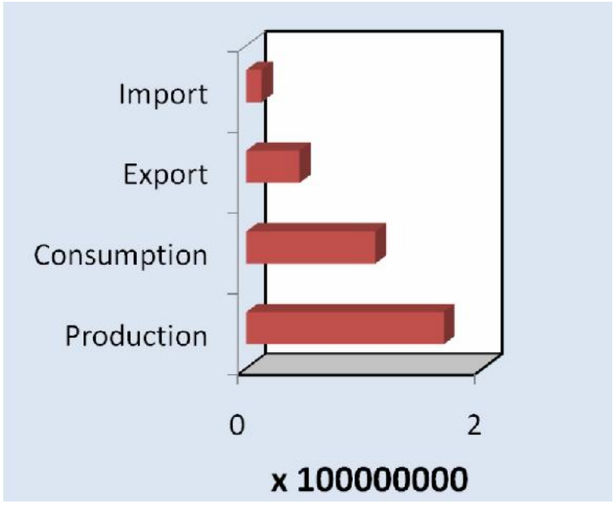



*FIGURE 1: GLOBAL SUGAR FUNDAMENTALS IN 2011*

There are four fundamental determinants of the global sugar flow. These are production, consumption, exports and imports. Available statistics reveal that in 2009 the following countries were the key players in this movement:

**TOP TEN PRODUCERS (MMT)**

- Brazil - 32.29
- India -25.94
- E.U -16.38
- China -15.4
- Thailand -7.77
- USA -6.96
- Mexico -5.94
- Pakistan -5.00
- Australia-4.62
- Russian Federation -3.79

**TOP TEN CONSUMERS (MMT)**

* India - 22.55
* EU -20.47 (net importer)
* China - 14.73
* Brazil -11.86
* USA - 9.81 (net importer)
* Russian Fed. - 6.18 (net importer)
* Mexico - 5.03
* Indonesia - 4.6 (net importer)
* Pakistan -4.54
* Egypt- 2.70

Source: ISO Year Book (2009)

**TOP TEN EXPORTERS (MMT)**

- Brazil -20.14
- Thailand - 5.11
- India -4.23
- Australia -3.29
- Guatemala -1.33
- Mexico - 0.95
- Cuba - 0.74
- Swaziland - 0.61
- Mauritius -0.40
- Argentina -0.38

**TOP TEN IMPORTERS (MMT)**

* Russian Fed. -2.52
* USA -2.37
* EU -2.01
* Nigeria -1.57
* Iran -1.45
* Japan -1.43
* Korea Rep. -1.35
* Malaysia -1.27
* Canada -1.26
* Bangladesh -1.19

Source: ISO Sugar Yearbook (2009)

## 2.2 Nigeria's Place in the Sugar World

Like all the countries highlighted in these lists, Nigeria belongs to the International Sugar Organization whose member countries numbering 92 in all represent 80% of total world sugar production, 81% of total world consumption, 64% of total sugar exports and 55% of sugar imports. Among all these categories however, Nigeria only belongs to the category of sugar importers, where it ranked 4th in 2009. When compared to our African neighbours, Nigeria is the least food - secure in terms of sugar as most of them produce substantial proportions of their sugar requirements.

**TABLE 1: COMPARATIVE DATA ON SUGAR SELF-SUFFICIENCY AMONG WEST AFRICAN COUNTRIES**

| COUNTRY | TOTAL SUGAR DEMAND | TOTAL SUGAR PRODUCTION | PROD. as % of DEMAND |
|---|---|---|---|
| Benin Republic | 39,062MT | 10,000MT | 25.6% |
| Burkina Faso | 85,106MT | 40,000MT | 47% |
| Cote d' Ivoire | 226,565MT | 145,000MT | 64% |
| Senegal | 188,000MT | 99,000MT | 50% |
| Mali | 103,030MT | 34,000MT | 33% |
| Nigeria | 1994,175MT | 30,000MT | 3% |

Source: ISO Sugar Yearbook

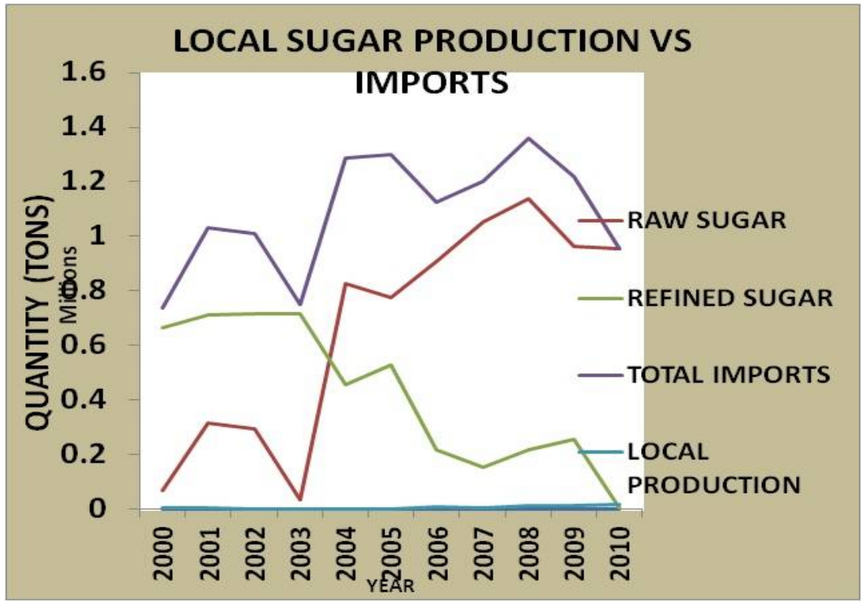



*FIGURE 2: SUGAR PRODUCTION VS RAW AND REFINED SUGAR IMPORTATIONS IN NIGERIA*

Source: NSDC (2011)

Figure 2 highlights the two main features of Nigeria's domestic sugar scenario and these are that;

1. While production has been virtually absent (we produce about 2% of total national requirements), imports on the other hand have been rising from 0.7 million metric tons in 2003 to 1.3 million metric tons in 2009!

2. The bulk of sugar imports up to 2004 were white refined sugar, but this picture changed with the establishment of the first refinery in Nigeria. Since 2004, annual importation of raw sugar has overtaken that of white refined sugar.

According to surveys conducted by the National Sugar Development Council (NSDC), the bulk of sugar consumed in Nigeria is by the industries, with direct consumption accounting for only a quarter of total consumption.

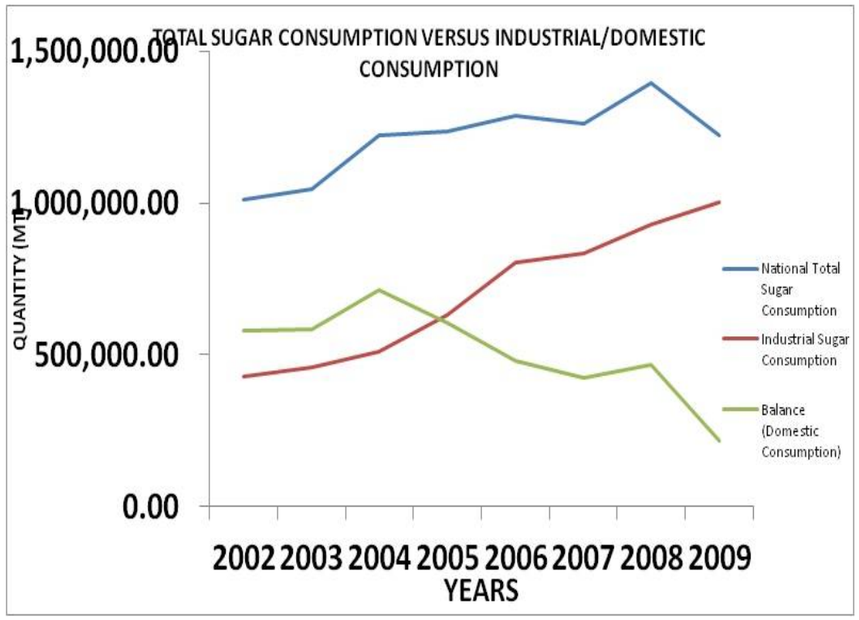



***FIGURE 3: INDUSTRIAL AND DOMESTIC SUGAR CONSUMPTION IN NIGERIA***

Source: NSDC (2011)

# Chapter 3

## Sugar Regulation in Selected Countries

It is pertinent to note that very few countries of the world leave the sugar sector un-regulated. Even Brazil the world's leading producer strictly regulated the sector beginning in the 70's with its " Pro-Alcool" programme and only ended it in 1999 after attaining global dominance.

Brazil is embarking on another variant of regulation by prioritizing state lending for sugar mills that focus on ethanol rather than sugar and is planning to place export tax on ethanol in order to stabilize prices for consumers! Examples of sugar regulation in other countries are as follows;

**INDIA**, notorious for its famous '*sugar cycle'* which is characterised by alternating periods of surplus and deficit, adopts the following measures to regulate her sugar sector;

- Allows duty free imports of both raw and refined and imposes limits on stocks to be held by merchants when supply is tight;
- Determines the time and amount to be exported at times of surplus production; and
- Fixes prices at which sugar is sold domestically

**THAILAND's** sugar sector is regulated through the following;

- Each season, government estimates production, domestic needs and export commitments and divides total production into 3 quotas structured and administered as follows:
- Refined quota allocation to mills to be sold at fixed prices;
- Long-term quota sales;
- Exportable surplus sold at non-fixed prices by licensed sugar exporting companies

**EUROPEAN UNION** on the other hand operates a two-level sugar market;

- Quota sugar which is the amount producers can sell in the local market
- Out-of-quota sugar, amount produced in excess of quota that CANNOT be sold in the EU. The EU Commission also determines the amount of sugar that can be imported or exported within the union. Recent examples of EU regulation include;
- It allows 500,000mt of out-of-quota sugar to be transformed into quota sugar, that it ordinarily does not allow; and
- It opened a 300,000mt world market TRQ all in a bid to ensure adequate supply following the 2008 Sugar Reform Bill

The **UNITED STATES's** sugar market is highly lucrative because the beet and cane growers annually obtain production loans which they have to repay from the proceeds of their operations. Hence the US government strictly regulates sugar imports into its market and deliberately keeps sugar prices high to enable growers repay their loans and remain in production.

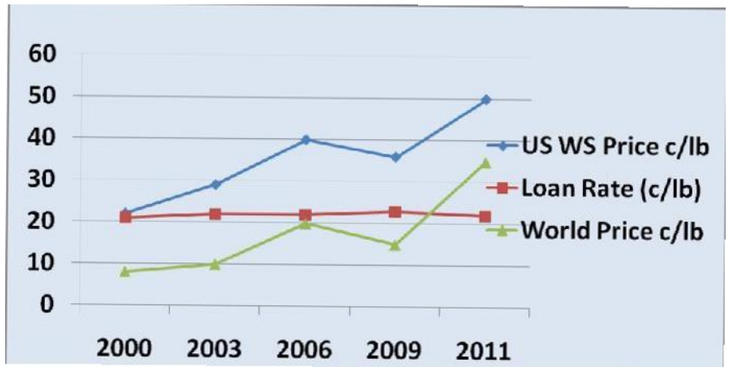



**FIGURE 4: UNITED STATES AND WORLD WHITE SUGAR PRICES COMPARED**

Source: ISO (2011)

Other aspects of sugar regulation in the US include;

ü Policy to support prices well above world market levels;

ü Price support regime administered by USDA to sugar producers;

ü Restrictive import policy through the Tariff-Rate Quota System;

ü Duty free imports only from Mexico;

ü Preferential supplies under WTO agreed TRQ;

In contrast to all these examples, Nigeria is about the only country without ANY sugar regulation policy or real local industry protection. The few policies enacted so far have been poorly implemented and therefore in-effective. This is the ultimate challenge faced by the Nigerian sugar sector.

## 3.1 The Importance of Sugar and Rationale for Sugar Sector Regulation

- Sugar's importance stems mainly from its potential to generate jobs in hundreds of thousands;
- Its use also cuts across so many industrial sectors such as pharmaceuticals, soft drinks, confectionery, food & beverage, dairy etc;
- Sugarcane is now an '***energy crop***' used in the production of fuel ethanol and generation of electricity besides so many other spin-off industries;
- Producing countries make huge savings in foreign exchange that would otherwise be spent on sugar importation;

Many advanced sugar producing nations of the world are deriving various socio-economic benefits from the sugar sector. For instance;

- An estimated 6 million Kenyans derive their livelihood from the industry which directly supports 250,000 farmers;
- Fuel ethanol from cane is used to power over 86% of Brazil's fleet of light vehicles;
- Mauritius generates 40% of its electricity requirement through bagasse co-generation;
- India does not allow the export of a grain of sugar until after '*Diwalli*' festival, even in surplus years - to ensure food security and avoid social unrest;
- Poverty reduction, social infrastructure, rural industrialization etc, are other benefits of a vibrant sugar sector.

# Chapter 4

# Road-map to Self-sufficiency in Sugar Production Vide the Nigerian Sugar Master Plan (NSMP)

## 4.1 Brief History of Nigerian Sugar Industry

The Nigerian Sugar Company (NISUCO), Bacita, incorporated in 1961 with an installed capacity of 40,000tonnes was the first integrated industrial sugar factory established by the government in Nigeria. Actual sugar production started in 1964 and it attained highest production of 35,000tonnes in 1973/74. Production activities at the factory started to decline in the 1980s due to a number of field, factory and management factors.

The second was the Savannah Sugar Company Limited (SSCL), Numan, which started production with an installed capacity of 50,000tonnes refined sugar per annum in 1980/81. It achieved its highest production of 23,000tonnes in1991/92. From inception, SSCL was hampered by poor contract management, poor government funding and crippling debt.

By late 1990s, the Nigerian government had decided to privatize the two companies and both were eventually sold to new private owners. Attempts by government to establish other sugar companies at Lafiagi and Sunti never really took off. The Jigawa State Government also established a 1500tcd sugar factory at Hadejia in 2005 but never completed it till date. In addition, many mini sugar plants with capacities ranging from 10 to 250tcd were established by both private and state governments but their combined production is very insignificant.

Meanwhile, sugar consumption in Nigeria rose from 43,000tonnes in 1955 to about 450,000tonnes in 1974. By 1982 the demand had risen to almost 1.0million tonnes while about 40,000tonnes (4%), was being produced. Even after privatization in 2003/04, the fortunes of the sugar companies did not change much, with only SSCL producing about 12,000tonnes in 2008/09 when Nigeria was already consuming well over a million tonnes. The shortfall had always been bridged by importation which had steadily risen to about 1.5million tonnes by 2009. The collapse of the nascent sugar industry had consequent adverse effects on employment, poverty alleviation and rural development and constituted a huge drain on foreign reserves of the country. It is in the realization of these facts and the urgent need to reverse the trend that made the Federal Government of Nigeria direct the National Sugar Development Council to develop a road map to self-sufficiency within the shortest possible time frame.

## 4.2 Research and Development in the Sugar Industry

All commercial sugarcane varieties in the country were imported from various countries but principally from the West Indies Cane Breeding Station at Groves, Barbados and the Sugar Research Institute, Coimbatore, India.

In over three decades, about 500 varieties were collected for the sugar industries for evaluation and adaptability. Nigerian Research Institutes, notably the National Cereals Research Institute, NCRI, Bida and the Unilorin Sugar Research Institute, USRI, Ilorin had been engaged in cane breeding research but the outcome of their efforts had so far led to the release of about eight (8) new varieties, none of which however, is in commercial cultivation.

In the areas of Sugarcane Agronomy and Pest and Disease control very little was done owing to a dearth of entomologists, systematic taxonomists, micro-biologists and plant pathologists. The demand for training in appropriate scientific disciplines is a major impediment in the area of sugarcane research and development in Nigeria, leading to its low contribution to the development of the sugar sector.

# Chapter 5

# The Nigerian Sugar Master Plan (NSMP)

## 5.1 Background to the Development of the NSMP

The Federal Government of Nigeria considers sugar as the third most important commodity after rice and wheat in its strategic food policy. Nigeria also has the reservoir of land, water and human resources to not only produce this commodity in sufficient quantity to meet national demand but also for export to earn foreign exchange.

It was against this backdrop that the study to evolve a roadmap for self-sufficiency in local sugar production in the country was conducted. The scope of work covered a comprehensive evaluation of all facets of the sugar industry including existing and potential estates, NSDC's structure and operating framework, manpower development, research and development, finance, trade policy, co-products of the sugar industry etc.

## 5.2 Rationale for the Plan

The *Nigerian Sugar Master Plan i*s a road map designed to make the Nigerian sugar industry transform into a world class multi-product sugarcane industry. In line with the Federal government's Transformation Agenda to make Nigeria one of the top 20 economies in the world by the year 2020, the NSMP aims at reinvigorating the sugar industry to contribute to the overall goal of the Agenda.

The NSMP provides a framework for setting goals, defining key actions, and generating and allocating resources to fund programmes in the industry. It is a unifying instrument at the strategic level for industry stakeholders, who otherwise are autonomous operators. It lays the ground for enhanced performance of the sugar industry premised on a robust import substitution strategy and attraction of investment through a liberal regime of incentives and fiscal policies.

## 5.3 Strategic Objectives

The *Nigerian Sugar Master Plan* (NSMP) came at a time when the industry needs to rethink its direction to meet the national sugar demand through local production. The industry needs to find ways of repositioning itself to become a world class multi-product sugarcane industry. This would require that the industry goes beyond sugar, think more about sugarcane as a whole, and exploit market opportunities presented by multiple sugarcane products. The new thinking therefore, requires that the industry mobilizes and invest resources in new start-ups and backward integration programmes. In the light of the above, the NSMP came with a number of policy measures as well as regime of fiscal and investment incentives to achieve the following objectives:

**A. Raise local sugar production to attain self sufficiency through;**

i. Robust monitoring and evaluation of Backward Integration Programme
ii. Regulation of the entire regime of sugar importation through quota allocation
iii. Investors specific fiscal incentives to attract investment into the sector

**B. Stem the tide of high importation through;**

i. High graduated tariff structure on sugar importation
ii. Implementation of BIP support incentives and sanctions policy
iii. Import quota allocation benchmarked on local production

**C. Create huge number of job opportunities through;**

i. Significant increase in cane area and factory milling capacity
ii. Re-invigorating and expanding the outgrower scheme
iii. Enlargement of sugarcane value chain players

**D. Contribute to the production of ethanol and generation of electricity through;**

i. Development of multipurpose sugarcane varieties
ii. Establishment of Ethanol distilleries at each new sugar project
iii. Designing of all new sugarcane processing plants with high pressure boilers for efficient co-generation

In order to ensure that the identified objectives are comprehensively addressed, a number of strategies have been formulated for each objective, as highlighted above. A set of activities have also been identified for each strategy in order to work towards the achievement of the desired outcomes. These objectives and detailed strategic actions are presented in **ANNEX V and IV**

## 5.4 Implementation Strategy

The implementation of the NSMP involves allocation of responsibilities to engender maximum participation by all relevant stakeholders. Formal existing institutional structures such as the Standards Organization of Nigeria (SON) and the National Food and Drug Administration and Control (NAFDAC) etc, responsible for performing key regulatory functions are to carry out their appropriate roles. Stakeholder institutions and facilitators such as millers, importers, cane growers, banks etc, as well as several government Ministries, Departments and Agencies (MDAs), are also required to perform their statutory roles in the implementation of the NSMP.

## 5.5 Implementation Framework

A practical implementation framework which is easy to coordinate has been developed for the effective implementation of the NSMP. The National Sugar Development Council (NSDC), having the dual legal mandate to develop and regulate the industry has a central role to play. Given the interwoven nature of the industry's decision-making organs, the NSMP implementation framework will have a wide spectrum of players and overlapping responsibilities (see Annex II for details).

## 5.7 Institutional Structure

The implementation of the Master Plan will be the responsibility of the following institutional organs to be coordinated by NSDC under the supervision of the Honorable Minister of Trade and Investment (HMTI), who will be assisted by ***Sugar Road Map Implementation Committee*** (SURMIC). ***Figure 5*** outlines the institutional structures and implementation framework.

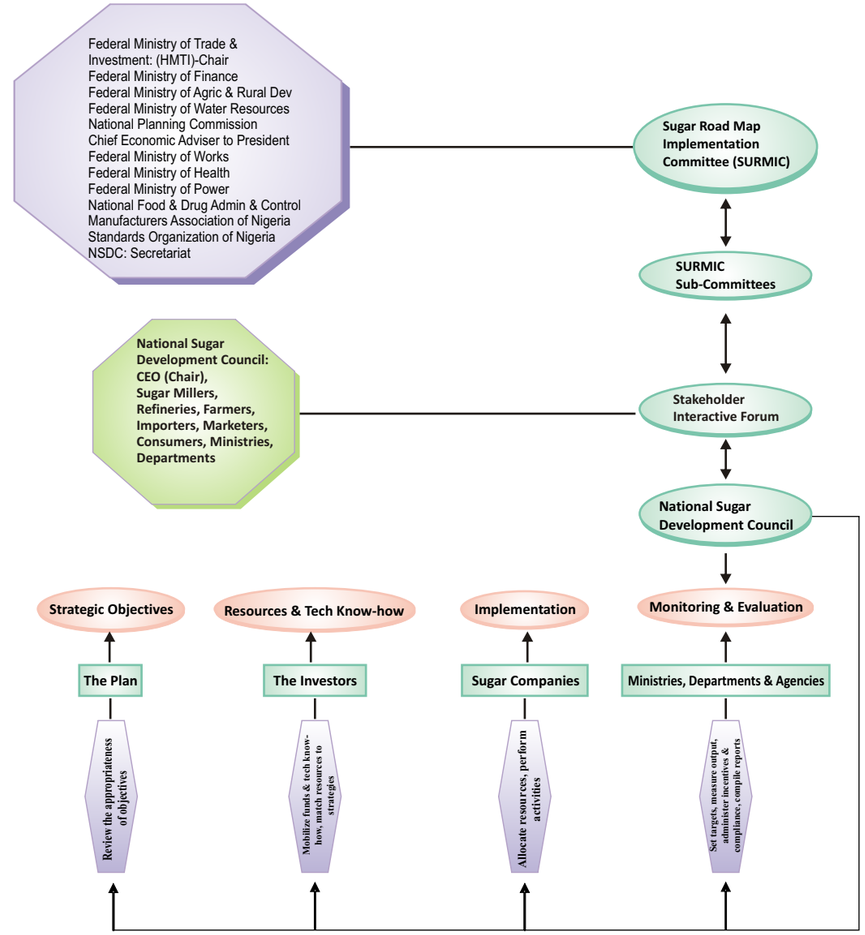



***FIGURE 5: NSMP PLAYERS AND IMPLEMENTATION MATRIX***

### 5.7.1 Sugar Road Map Implementation Committee (SURMIC)

The Committee will comprise the Honorable Minister of Trade and Investment (HMTI) as Chairman, while members are the Honorable Ministers of *FMF, NPC, FMA&RD, FMWR, FMW, FMP, FMH, Chief Economic Adviser to President* and the Chief Executive Officers (CEOs) of *NAFDAC, SON, MAN and NSDC*. They will deal with policy issues affecting the implementation of the NSMP and appoint Sugar Desk Officers (SDOs) who shall represent them and serve in the sub-committees of SURMIC. SURMIC shall meet quarterly with NSDC serving as its secretariat.

### 5.7.2 SURMIC Sub-Committees

Each member of the SURMIC is to designate a Sugar Desk Department whose Director will represent the Honorable Minister and serve in the various Sub-Committees of the SURMIC. The meetings of the sub-committees (Units) during which special technical tasks on greenfield projects development, BIP implementation, sugar importation benchmarking etc, will be discussed, are to be chaired by the Chief Executive of the NSDC who will report proceedings to SURMIC.

### 5.7.3 Stakeholders Interactive Forum (SIF)

The Stakeholders Interactive Forum (SIF) will comprise CEOs of stakeholder institutions. The Chairman, Governing Council of the National Sugar Development Council, will chair it. The SIF shall also meet *quarterly* to discuss the report of the various SURMIC monitoring units and deliberate on the progress of the implementation of the NSMP.

# Chapter 6

## How to Achieve Sugar Self-sufficiency: NSMP Recommendations

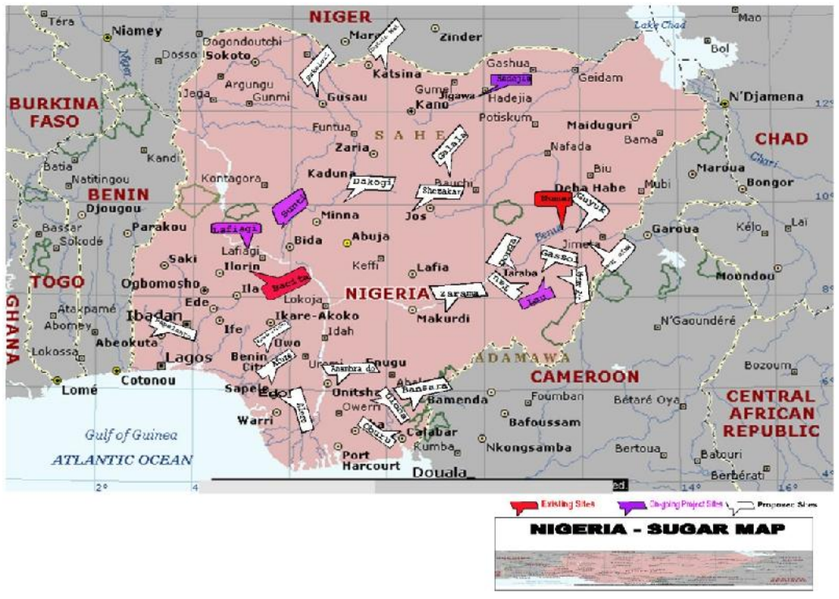
Starting from '***where we are'*** in terms of sugar self-sufficiency, the NSMP projects '***where we want to be'*** by estimating the projected quantities required to achieve self-sufficiency in the commodity over the entire plan period (Tables 2, 3 & 4). It also indicates the number of factories, sugarcane areas and number of skilled and unskilled staff required. Implementation of the NSMP as conceived would entail many projects which would cover all geo-political delimitations of the country since suitable sites for cane production exist across all ecological zones of the country.

**TABLE 2: NIGERIA'S PRESENT SUGAR SITUATION AND FUTURE TARGET**

| PARAMETERS | WHERE WE ARE (2010) | WHERE WE ARE GOING (2020) |
|---|---|---|
| Estimated Sugar Demand (MMT) | 1.41 | 1.75 |
| Sugar Importation (MMT) | 1.05 | 0 |
| Sugar Production (MMT) | 0.03 | 1.797 |
| No. of Sugar Factories | 2 | 28 |
| Total Cane Area (000 ha) | 6 | 224.0 |
| Total Jobs Available | 1750 Permanent<br>3000 Casual | 37,378 Permanent<br>79,803 Casual |
| Res & Tech Innovation | Low Through Collaboration & poor funding | World Class Through Collaboration & better Funding |

## TABLE 3: NSMP IMPLEMENTATION SCHEDULE AND KEY MILESTONES

| PARAMETERS (KPIs) | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|
| TOTAL SUGAR DEMAND (MMT) | 1.4 | 1.43 | 1.47 | 1.51 | 1.55 | 1.58 | 1.62 | 1.66 | 1.75 |
| PROJ. SUGAR PROD (MMT) | 0.03 | 0.05 | 0.07 | 0.1 | 0.27 | 0.87 | 1.23 | 1.61 | 1.79 |
| PROD. AS % OF DEMAND | 2.1 | 3.5 | 4.8 | 6.6 | 17.4 | 55.0 | 75.9 | 96.9 | 102.3 |
| CANE AREA '000 (Ha) | 4.0 | 7.0 | 9.0 | 13.0 | 40.0 | 110.0 | 160.0 | 210.0 | 224.0 |
| TOTAL ETHANOL PROD. (ML) | 0 | 0 | 6.3 | 9.0 | 24.3 | 78.3 | 110.7 | 144.9 | 161.1 |
| TOTAL ELECT. GEN. (MW) | 7 | 11.5 | 16.1 | 23.0 | 62.1 | 200.1 | 282.9 | 370.3 | 411.7 |
| TOTAL JOB CREATION 000 | 3.2 | 4.5 | 5.4 | 6.2 | 16.1 | 54.7 | 98.3 | 109.7 | 117.2 |
| PROJ. SUGAR IMPORT (MMT) | 1.4 | 1.4 | 1.4 | 1.4 | 1.3 | 0.7 | 0.3 | 0 | 0 |
| PROJ. SUGAR LEVY INCOME(Nb) | 5.0 | 5.0 | 5.0 | 5.0 | 4.8 | 2.5 | 1.1 | 0 | 0 |




## FIGURE 6: MAP OF NIGERIA SHOWING EXISTING, ON-GOING AND POTENTIAL SUGAR SITES

### 6.1 Classification of Identified Potential Sugarcane Sites

From the reports of studies carried out, various sites identified with sugarcane growing potential have been classified into four groups based on similarity of certain features to accelerate the realization of the objectives of the plan. The sites are grouped according to their comparative advantages in terms of the ease of project implementation and readiness to start production. The groups are categorized as follows: Site nos. 1-3 (Group 1), 4-6 (Group 2), 7-17 (Group 3) and 18-28 (Group 4).

### 6.1.1 Group One Sites

This group comprises the existing estates with some level of infrastructure and installed processing plants. This includes the Savannah Sugar Company Limited (SSCL), Numan, Josepdam Sugar Company (JSC), Bacita and Jigawa Sugar Company, Hadejia. The requirements of this group include rehabilitation, expansion and completion of the development of the estates to attain their maximum potential to produce a total of 215,000 tonnes of sugar representing about 12% of the estimated

## TABLE 4: LIST OF EXISTING AND POTENTIAL SUGAR ESTATES

| S/No | Location | State | Area ha | Capacity | | Ethanol Million liters | Power MW | Animal feed Tons | Employment Generation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | TCD | TS | | | | Admin & service | Agriculture | | Sugar Factory | | Total |
| | | | | | | | | | | Perm | Season | Permanent | Seasonal | |
| 1 | Savannah | Adamawa | 12,500 | 7,000 | 100,000 | 9 | 23 | 84,000 | 598 | 994 | 3866 | 389 | 330 | 6177 |
| 2 | Bacita | Kwara | 8,000 | 4,500 | 60,000 | 5.8 | 14 | 52,000 | 377 | 634 | 2477 | 245 | 200 | 3933 |
| 3 | Hadejia | Jigawa | 7,000 | 4,000 | 55,000 | 5 | 13 | 49,000 | 330 | 555 | 2167 | 210 | 180 | 3442 |
| 4 | Sunti | Niger | 20,000 | 10,000 | 160,000 | 14.4 | 37 | 140,000 | 960 | 1588 | 6200 | 622 | 530 | 9900 |
| 5 | Lau | Taraba | 20,000 | 10,000 | 160,000 | 14.4 | 37 | 140,000 | 960 | 1588 | 6200 | 622 | 530 | 9900 |
| 6 | Lafiagi | Kwara | 9,000 | 5,000 | 72,000 | 6.5 | 17 | 81,000 | 430 | 714 | 2796 | 280 | 240 | 4450 |
| 7 | Tau | Taraba | 20,000 | 10,000 | 160,000 | 14.4 | 37 | 140,000 | 960 | 1588 | 6200 | 622 | 530 | 9900 |
| 8 | Guyuk | Adamawa | 18,000 | 9,000 | 154,000 | 12.9 | 23 | 126,000 | 920 | 1420 | 5570 | 600 | 500 | 9010 |
| 9 | Mayo Ine | Adamawa | 12,500 | 7,000 | 100,000 | 9 | 23 | 84,000 | 598 | 994 | 3866 | 389 | 330 | 6177 |
| 10 | Mutum Biu | Taraba | 12,500 | 7,000 | 100,000 | 9 | 23 | 84,000 | 598 | 994 | 3866 | 389 | 330 | 6177 |
| 11 | Gassol | Taraba | 9,000 | 5,000 | 72,000 | 6.5 | 17 | 81,000 | 430 | 714 | 2796 | 280 | 240 | 4450 |
| 12 | Agbede-Illushi | Edo | 8,000 | 4,500 | 64,000 | 5.8 | 14 | 56,000 | 377 | 634 | 2477 | 245 | 200 | 3933 |
| 13 | Mada | Nasarawa | 7,000 | 4,000 | 55,000 | 5 | 13 | 49,000 | 330 | 555 | 2167 | 210 | 180 | 3442 |
| 14 | Dakogi | Niger | 7,000 | 4,000 | 55,000 | 5 | 13 | 49,000 | 330 | 555 | 2167 | 210 | 180 | 3442 |
| 15 | Donga | Taraba | 7,000 | 4,000 | 50,000 | 5 | 11 | 49,000 | 300 | 555 | 2167 | 190 | 166 | 3378 |
| 16 | Papalanto | Ogun | 7,000 | 4,000 | 50,000 | 5 | 11 | 49,000 | 300 | 555 | 2167 | 190 | 166 | 3378 |
| 17 | Zarama | Benue | 6,000 | 3,500 | 50,000 | 4.3 | 11 | 47,000 | 300 | 476 | 1858 | 190 | 166 | 2990 |
| 18 | Iyansan | Ondo | 5,500 | 3,000 | 45,000 | 4 | 10 | 38,000 | 270 | 436 | 1700 | 175 | 150 | 2731 |
| 19 | Bakalori | Zamfara | 5,000 | 3,000 | 40,000 | 3.6 | 9 | 35,000 | 240 | 397 | 1550 | 150 | 130 | 2467 |
| 20 | Dutsin Wai | Katsina | 5,000 | 2,800 | 40,000 | 3.6 | 9 | 35,000 | 240 | 397 | 1550 | 150 | 130 | 2467 |
| 21 | Idah | Kogi | 5,000 | 2,800 | 40,000 | 3.6 | 9 | 35,000 | 240 | 397 | 1550 | 150 | 130 | 2467 |
| 22 | Afero | Edo | 5,000 | 2,800 | 40,000 | 3.6 | 9 | 35,000 | 240 | 397 | 1550 | 150 | 130 | 2467 |
| 23 | Ulonu | Imo | 4,500 | 2,500 | 35,000 | 3.2 | 8 | 31,500 | 210 | 357 | 1393 | 130 | 110 | 2200 |
| 24 | Shemakar | Plateau | 3,500 | 2,000 | 30,000 | 2.5 | 7 | 24,500 | 180 | 278 | 1084 | 125 | 100 | 1767 |
| 25 | Bansara | Cross River | 3,500 | 2,000 | 30,000 | 2.5 | 7 | 24,500 | 180 | 278 | 1084 | 125 | 100 | 1767 |
| 26 | Oburu | Cross River | 3,000 | 1,600 | 25,000 | 2.2 | 6 | 21,000 | 150 | 238 | 930 | 120 | 180 | 1618 |
| 27 | Anambra do | Anambra | 3,000 | 1,600 | 25,000 | 2.2 | 6 | 21,000 | 150 | 238 | 930 | 120 | 180 | 1618 |
| 28 | Afuze | Edo | 2,500 | 1,500 | 18,000 | 1.8 | 4 | 17,500 | 110 | 198 | 774 | 120 | 160 | 1362 |
| Total | | | 224,000 | 121,100 | 1,797,000 | 161.2 | 400 | 1,596,000 | 11,371 | 18764 | 73235 | 7243 | 6568 | 114380 |

National sugar demand. The sites also have the potential to produce 20 million litres of ethanol, generate 50 MW of electricity, 185,000 tonnes of animal feeds and employ 14,500 staff. The estimated cost for developing this group is $279 million over a period of 4 to 6 years.

### 6.1.2 Group Two Sites

This group comprises sites with confirmed availability of land and water bodies for irrigation. The sites include Lafiagi, Sunti, and Lau which together have the potential to produce a total of 390,000 tonnes of sugar which is 22% of the estimated national sugar demand by 2020. The sites also have the potential to produce 35 million litres

of ethanol, generate 81MW of electricity, 361,000 tonnes of animal feeds and employ 24,300 staff. The estimated cost for developing this group is $564 million over a period of seven years.

### 6.1.3 Group Three Sites

This group comprises of ten sites across the country with the potential to produce between 50,000 and 160,000 tonnes of sugar annually. These ten sites are estimated to produce a total of 860,000 tonnes of sugar which is 49% of the estimated national sugar demand by 2020. The sites also have the potential to produce 77 million litres of ethanol, generate 185 MW of electricity, 760,000 tonnes of animal feeds and employ 53,000 staff. The estimated cost for developing this group is $1,238 million over a period of seven years.

### 6.1.4 Group Four Sites

This group has eleven sites across the country with potential for each site to produce less than 50,000 tonnes of sugar annually. The total estimated sugar from these sites is 368,000 tonnes which is 21% of the estimated national sugar demand by 2020. The sites have the potential to produce 33 million litres of ethanol, generate 84 MW of electricity, 318,000 tonnes of animal feeds and employ 23,000 people. The estimated cost for developing this group of sites is $529 million over a period of 5 years.

### TABLE 5: POTENTIAL WATER REQUIREMENT FOR THE PROPOSED SUGAR SITES

| Project Location | State | Available Area (ha) | Plant Capacity | Estimated Water Required ($mm^3$) | Closest Source of Water | Predominant Soil Type |
|---|---|---|---|---|---|---|
| Numan | Adamawa | 12,500 | 7,000 | 290 | UBRBD | Vert./ Alluv |
| Bacita | Kwara | 8,500 | 4,500 | 190 | R. Niger | Alluvial |
| Hadejia | Jigawa | 7,000 | 4,000 | 160 | HJRBD | Alluvial |
| Sunti | Niger | 20,000 | 10,000 | 450 | R. Niger | Alluvial |
| Lau | Taraba | 20,000 | 10,000 | 450 | R. Benue | Vertisol |
| Lafiagi | Kwara | 9,000 | 5,000 | 210 | R. Niger | Alluvial |
| Tau | Taraba | 20,000 | 10,000 | 450 | R. Benue | Vertisol |
| Guyuk | Adamawa | 18,000 | 9,000 | 410 | R. Gongola | Vertisol |
| Mayo Inne | Adamawa | 12,500 | 7,000 | 280 | R. Inne | Vert., Alluv |
| A/Illushi | Edo | 8,000 | 4,500 | 120 | BORBDA | Ferroginous |
| Mada | Nasarawa | 7,000 | 4,000 | 160 | LNRBDA | Ferroginous |
| Dakogi | Niger | 7,000 | 4,000 | 160 | R. Niger | Ferroginous |
| Donga | Taraba | 7,000 | 4,000 | 160 | R. Donga | Vertisols |
| Papalanto | Ogun | 7,000 | 4,000 | 105 | OORBDA | Lithosols |
| M/Biu | Taraba | 12,500 | 7,000 | 280 | R. Benue | Vertisols |
| Gassol | Taraba | 9,000 | 5,000 | 201 | R. Taraba | Vertisols |
| Zarama | Benue | 6,000 | 3,500 | 134 | LBRBDA | Alluvial |
| Iyansan | Ondo | 5,000 | 3,000 | 82 | BORBDA | Lithosols |
| Bakolori | Zamfara | 5,000 | 3,000 | 112 | B/lori Dam | Alluvial |
| Dutsen Ma | Katsina | 5,000 | 2,800 | 112 | SRBDA | Alluvial |
| Idah | Kogi | 5,000 | 2,800 | 112 | R. Niger | Ferroginous |
| Alero | Edo | 5,000 | 2,800 | 75 | BORBDA | Ferroginous |
| Ulona | Imo | 4,500 | 2,500 | 67 | AIRBDA | Lithosols |
| Shemankar | Plateau | 3,500 | 2,000 | 115 | LBRBDA | Ferroginous |
| Bansara | C. River | 3,500 | 2,000 | 53 | CRBDA | Lithosols |
| Oburu | C. River | 3,000 | 1,600 | 45 | CRBDA | Lithosols |
| Anambra do | Anambra | 2,500 | 1,500 | 38 | AIRBDA | Lithosols |
| Afuze | Edo | 2,500 | 1,500 | 38 | BORBDA | Lithosols |

# Chapter 7

## Sugarcane Value Chains and Challenges

Government has recently adopted the '***Value Chain Approach'*** as the most effective means of driving Agribusiness to ensure the achievement of desired outcomes. To this end;

1. The implementation of the NSMP will cover the entire sugarcane value-chain with forward and backward linkages among key players
2. The players which may be categorized into public and private, have specific critical roles to play
3. The challenges faced by each group of players have also been identified and solutions proffered as highlighted below;

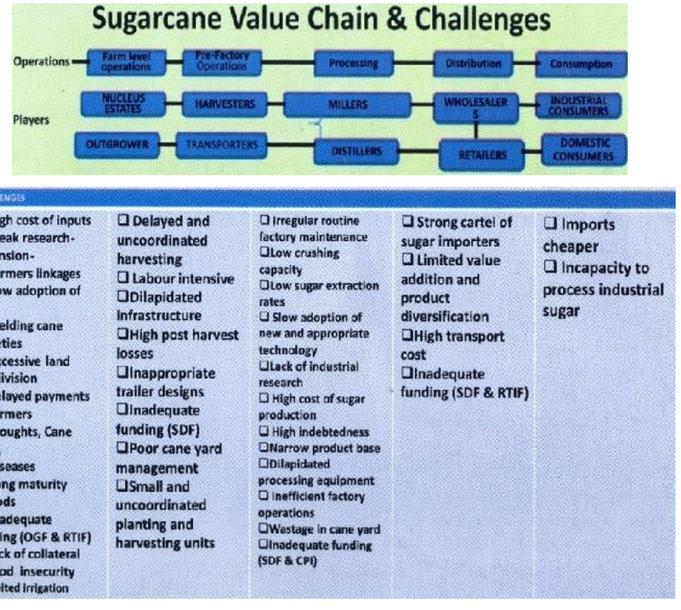



***FIGURE 7: SUGARCANE VALUE CHAIN AND CHALLENGES***

# Chapter 8

## Role of Public and Private Sectors in the Implementation of NSMP

The implementation strategy for the NSMP is designed in such a way that different roles are assigned to both the Public and Private Sectors.

### 8.1 Role of Private Sector

The roles of the Private Sector include:

- Provision of business plans & bankable feasibility studies
- Provision of investment capital (NSMP projects are estimated to cost Some US $3.1billion based on current global estimates)
- Provision of technical expertise
- Field & factory development, capacity development etc

### 8.2 Role of Government (Public Sector)

In broad terms, the government is expected to provide the following;

Provision of conducive policy environment including fiscal incentives
Provision of special investor - specific incentives
Mandatory Policy on Backward Integration Program
Supervision of BIP incentives and sanctions policy
Provision of infrastructures like roads, dams & water
Easy access to land through engagement with State Governments

### 8.3 Specific Roles of Key Government and Private Agencies

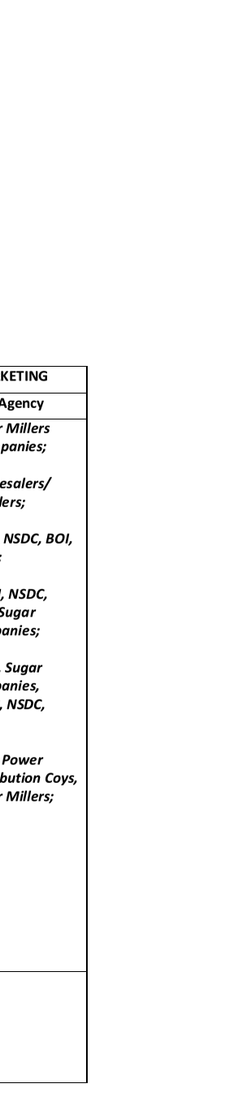
The expected roles of both the Organized Private Sector (OPS) and key Government Agencies as highlighted above can be broadly categorized into 3:

(i) Agricultural Production
(ii) Regulation; and
(iii) Factory Processing/Manufacturing & Marketing

A number of Agencies and Institutions working collaboratively would be involved in the provision of services or delivery of inputs necessary to effectively drive the implementation of the NSMP. Table 6 highlights such Agencies and their assigned roles.

## TABLE 6: SPECIFIC ROLES OF GOVERNMENT AND PRIVATE SECTOR AGENCIES IN NSMP IMPLEMENTATION

| AGRICULTURAL PRODUCTION | | REGULATION | | FACTORY PROCESSING/MANFACTURING & MARKETING | |
|---|---|---|---|---|---|
| **Role** | **Agency** | **Role** | **Agency** | **Role** | **Agency** |
| i. Land acquisition, preparation & development; | ***States Govts, LGA, FMA&RD, NSDC;*** | i.Sugar policy formulation and d coordination; | ***FMTI, NSDC;*** | ii. Processing/Milling, Packaging, Storage; | ***Sugar Millers /Companies;*** |
| ii. Formation of sugarcane Farmers cooperative group around sugar estates; | ***FMA&RD, Farmers, NSDC;*** | ii Supervision of Backward Integration Programme (BIP) & Incentives regime; | ***FMTI, FMA&RD, FMF, NSDC;*** | iii. Distribution & Marketing of Sugar; | ***Wholesalers/ Retailers;*** |
| iii. Outgrowers Schemes; | ***FMA&RD, Banks, Farmers;*** | iii. Coordination of the implementation, Monitoring and evaluation of NSMP; | ***SURMIC... comprising: FMTI, FMF, NPC, FMA&RD,*** | iv. Investment drive, Road shows, sugar projects fund mobilization, etc; | ***NIPC, NSDC, BOI, FMTI;*** |
| iii. Seed cane provision, and planting, sugarcane production by farmers, Harvesting and cane transportation; | ***Farmers, SugarEstates, Seed Suppliers;*** | | ***FMH,FMW, CEAP, NSDC, SON, NAFDAC, MAN;*** | v. Sugar Importation | ***FMTI, NSDC, NCS, Sugar Companies;*** |
| iv. Supply of agricultural inputs such as fertilizers, chemicals, etc; | ***Corporate Input Suppliers; FMARD*** | iv. Monitoring of NSMP implementation<br>v. Standards and quality assurance of all sugar types; | ***SURMIC sub-comittee***<br>***SON, NAFDAC, NSDC;*** | vi. Sugar Export | ***FMTI, Sugar Companies, NEPC, NSDC, NCS;*** |
| v. Provision of irrigation infrastructure such as water pumps, suction hose, tube- wells; | ***FMA&RD, NSDC;*** | | | vii. Evacuation of Electricity (Power Purchase Agreement) | ***FMP; Power Distribution Coys, Sugar Millers;*** |
| vi. Sourcing of cheap funds for farmers Operations; | ***BOA,, NSDC, FMA, NIRSAL (CBN), etc;*** | vii., Sugar Tariff; | ***FMF, FMTI, NSDC;*** | | |
| vii. R&D activities (Crop Improvement, Breeding & Genetics; Weed, Pest and Disease Control; Farming Techniques and Land Development ; | ***Research Institutes(NCRI, Universities IAR, USRI, FMA&RD;*** | viii. Setting targets and measuring performance for sugar companies /Refineries; | ***FMTI, NSDC;*** | | |
| viii. Extension Services; | ***FMA&RD, ADPs, Sugar Coys;*** | ix. Provision of incentives to sugar producers; | ***NSDC, NIPC, FMF;FIRS*** | | |
| ix. Irrigation plans for potential sugar projects sites & Provision of irrigation water to service identified sugar projects; | **FMWR, RBDAs;** | | | | |
| x. Provision of road infrastructures to sugar project sites; | **FMW;** | | | | |




# Regulation and Protection of the Sugar Sector

Several instruments have been adopted by different producing countries in ensuring effective regulation and protection of their sugar industries as already highlighted. Among such instruments are fiscal tariff and incentives designed primarily to protect 'infant industry' and encourage local production. Following this global best practice, Nigeria has also adopted similar instrument as highlighted in the sections below.

## 9.1 Approved Fiscal Tariff

In order to both stimulate and protect local investment in the sugar sub-sector, a new regime of fiscal tariff has been approved to take effect from 1st January, 2013. This tariff presented in Table 7 below has been structured to cover the plan period in order to assist investors and other critical stakeholders in planning their investments and commitments.

**TABLE 7: APPROVED FISCAL TARIFF FOR THE PLAN PERIOD**

| YEAR | RAW SUGAR | | REFINED SUGAR | | LOCAL PRODUCTION AS % OF DEMAND |
|---|---|---|---|---|---|
| | DUTY % | LEVY % | DUTY % | LEVY % | |
| 2012 | 5 | 0 | 20 | 10 | 2.1 |
| 2013 | 10 | 50 | 20 | 60 | 5 - 10 |
| 2014-2015 | 10 | 70 | 20 | 75 | 20 - 30 |
| 2016-2018 | 10 | 80 | 20 | 85 | 40 - 75 |
| 2019-2020 | 10 | 30 | 20 | 75 | 80 - 102 |

## 9.2 Reasons for the Fiscal Tariff

The high tariff structure which is deliberately skewed against importation is also designed to achieve the following:

* Promote local production as opposed to current high level of importation;

* Prevent dumping of cheap sugar and protect 'infant industry' local producers
* Send clear message to Sugar Refiners/Importers to backwardly integrate promptly and thereby stop paying stiff tariff
* Take cognizance of the little value addition by Refiners who import and refine raw sugar as against importation of finished goods (refined sugar)
* Reduce current over reliance on imported raw sugar (accounting for over 98% of total sugar imports) which makes the country lose ALL the benefits of sugar production including employment creation, foreign exchange savings, renewable energy production (ethanol and electricity), rural poverty alleviation, rural development etc.

## 9.3 Incentives for Sugar Sector Investors

The following incentives have been approved by the Federal Executive Council for investors in the Nigerian sugar sector, effective from 1st January, 2013.

### 9.3.1 Investor-specific Fiscal Incentives

I. Zero percent on machinery and spare parts for local sugar manufacturing industries;
II. Five years tax holiday for "*sugarcane to sugar*" value-chains and investors in local sugar manufacturing industries;
III. Importation of raw sugar for refining during the plan period shall be approved only by the President on the recommendation of the Minister of Trade & Investment and be benchmarked on the verifiable proof of local production from BIP as in the case of cement importation.
IV. Outright ban on the importation of refined sugar in retail packs as already approved for fruit juices, noodles, vegetable oil, soaps and detergent and bagged cement etc.
V. Up to 30% tax credit on the cost of provision of critical infrastructure by sugarcane to sugar project investors

### 9.3.2 Other Incentives

The outgrower programme of all sugar companies ready to provide off-take will be financed up to 50% through a revolving loan from the Sugar Levy under a scheme co-managed by NSDC, FMA&RD, Bank of Agriculture (BOA), Nigerian Agricultural Insurance Corporation (NAIC) etc. Under this scheme, the following activities will be funded:

i. Land preparation
ii. Input loan for cane seed, fertilizers, agro-chemicals etc.
iii. Provision of minor irrigation infrastructure like tube-wells, water pumps, delivery hoses etc.
iv. Working capital for farm operations

A***t least 40% of the total cane*** required by sugar millers must be sourced from outgrower farms around all sugar estates.

For new projects, the following activities will be facilitated by NSDC in collaboration with other relevant MDA's:

i. Pre-feasibility study for investors
ii. Liaison with State Governments for land acquisition
iii. Liaison with relevant government agencies such as FMWR and River Basins Development Authorities, for provision of irrigation water
iv. Liaison with FMA&RD and research institutes for the provision of extension services to cane farmers
v. Collaboration with existing research institutes for the development and provision of high yielding sugarcane varieties
vi. Provision of flood protection infrastructures such as dykes, dams etc, within affordable limits
vii. Cheap loans from the Sugar Levy to support sugar investors on cane land development. Support up to 30% of the total cost will only be provided to assist investors who have already undertaken a significant portion of the operation.

# Chapter 10

# Financing the NSMP

As already highlighted, execution of the NSMP projects will cost about $3.1 billion, all of which is to be provided by private sector investors. Nevertheless some of the roles assigned to public sector agencies would also require substantial sums of money most of which is to be provided through the Sugar Levy. From conservative estimates, the levy accruals could be as high as N5 billion annually, especially within the first 5-6 years of the plan period. This is captured in the chart below.

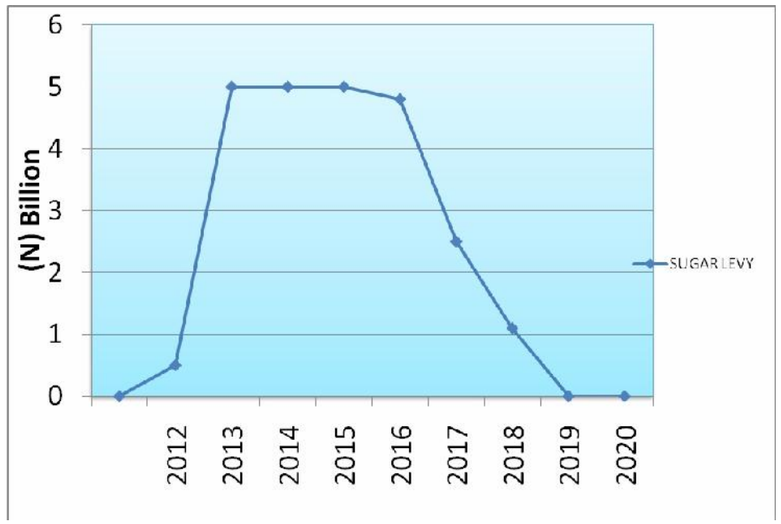



**FIGURE 8: SUGAR LEVY ACCRUALS DURING THE PLAN PERIOD**
Source: NSDC (2011)

## 10.1 Utilization of the Sugar Levy Fund

The approved tariff would be in place only between the first seven years of the plan during which time projected levy accruals will be substantial. In its original conception, the Sugar Levy was designed to be utilized primarily for the development of the sugar sector. Over the years and due to a number of extenuating factors, this lofty goal could not be actualized. To ensure a successful implementation of the NSMP however the identified limiting factors have been removed by government and the levy is to be used henceforth for its primary intended purposes. Some of the uses to which the Sugar Levy is to be deployed are highlighted in Table 8.

## 10.2 Alternative Sources of Funding Approved for NSDC

The implementation of the approved Master Plan should effectively end sugar importation within 10 years, when Nigeria would have achieved self-sufficiency. Once the self-sufficiency goal envisioned in the Plan is attained, the approved tariff template will no longer be applicable, as it is designed to terminate with the Master Plan period. Thus Sugar Levy accruals will be zero due to the expected cessation of sugar importation. At this time NSDC is expected to also transform fully into a regulatory agency which would still need funds for its activities. Approved alternative sources of funding for NSDC activities include:

- Surcharge of N100/50kg bag on all sugar produced locally and N5/litre of ethanol produced from cane.
- Funding through National Appropriation.

**TABLE 8: PROPOSED UTILIZATION OF SUGAR LEVY FUND**

| Programmes for Funding | Project Details | Collaborators | Proposed Portfolio | Beneficiaries | Deliverables |
|---|---|---|---|---|---|
| SUGAR DEVELOPMENT FUND (SDF) | Provision of Cheap Fund (loans) for:<br>- Field establishment<br>- Factory machinery/ retooling<br>- Working capital<br>- Mini-plant establishment<br>- Pre-feasibility studies | NSDC, FMA&RD, BOI, Private investors with bankable feasibility studies | N5 bil - NSDC<br>N5 billion- BOI<br>Current Size: N400m | Sugar Investors | New sugar plants:<br>*Expanding capacities for sugar, ethanol, electricity production<br>*Increased employment<br>*Poverty reduction<br>*Rural development |
| CUT-GROWERS FUND (CGF) | Provision of Cheap Fund (loans) for:<br>• Land preparation, planting and harvesting<br>• Farm maintenance operations: weeding disease & pest control, irrigation etc.<br>• Farm inputs: herbicides, pesticides, fertilizers, cane seeds | NSDC, FMA&RD Cut-growers, Sugar Mills, Commercial banks, CBN, NAIC | N1billion-NSDC 40% Interest Pay Back-CBN N1 billion- Commercial Bank Funding Current Size: N800m | Cut-grower farmers | *Increased cane delivery<br>*Increased production of Sugar, ethanol & electricity<br>*More Employment<br>*Poverty reduction<br>*Less communal crises |
| SUGAR INFRASTRUCTURE FUND (SIF) | Provision of loans & grants for critical infrastructures:<br>*Feeder roads,<br>*Connection to national grid,<br>*I.T. infrastructure,<br>*Lab. Equipments,<br>*Library Books & Equipment,<br>*Flood control infrastructures etc.<br>*30% tax rebate on investment on infrastructure | NSDC, Sugar Estates & Mills, Outgrowers, Research Institutions, Mini-plant Promoters FMWR, FMW R RS, FMF | N5 billion – NSDC Current Size: N250m | *Outgrower farmers,<br>*Sugar mills<br>*R & D Institutions<br>Sugar Estates Investors | *Enhanced & safer field & factory activities<br>*Profitable operations<br>*Increased productivity<br>* Safety of investments<br>* Increased profitability |
| RESEARCH &TECHN. INNOVATION FUND (RTI) | Provision of grants to research institutions and scientists to finance: *Studies and projects aimed at solving specific research problems facing the industry- e.g new varieties, process efficiency & productivity improvement etc. | NSDC, Research Institutions- NCRI, USR, IAR- Scientists, -Fabricators, Process Engineers, etc. | N1.5 billion – NSDC Current Size: N100m | *Growers<br>*Millers | *Productivity enhancement<br>*advancement in field & factory production processes<br>*Enhanced competitiveness |

# Chapter 11

# Research and Development Activities for new Technologies and Innovations

NSDC will continue to fund investment in R&D to consolidate the gains of NSMP, and for the following reasons:

- v To achieve and sustain self sufficiency in local sugar production
- v To intensify industrial and applied research through an innovative twinning arrangement between the sugar industry and research institutions.
- v To facilitate continuous capacity development to arm sugar sector workers with the latest tools and advances in their fields of specialization.

To this end, the existing relevant research institutes (NCRI, USRI, IAR) will be strengthened to provide cutting edge solutions and capacity development for the sugar sector. Also the professionals in the industry are expected to form the Nigerian Society of Sugarcane Technologists to promote members' interests and development of the industry.

## 11.1 Research and Technology Innovation Focus (RTI)

Given the current level of the Nigerian sugar sector, RTI will focus mainly on the following areas:

- Development of high yielding, disease/pest resistant and drought and flood tolerant varieties
- Development of multi-purpose varieties for sugar/ethanol production and co-generation
- Improvement in agronomic practices and factory processing with the view to increasing production as well as reducing production costs
- Innovative ratoon and soil management practices to increase the number of ratoons and overall cane yield
- Progressive mechanization of field operations especially harvesting to increase timely supply of quality cane to the millers
- Innovative and technology-based diversification of sugarcane processing to yield new industrial products

# Chapter 12

# Mandatory Backward Integration Programme (BIP) Policy

The BIP is an import substitution strategy adopted by import-dependent countries to rapidly domesticate production of commodities for which they at least possess comparative advantage and/or whose continued importation is considered inimical to the economic well-being of the country.

In Nigeria's recent history the BIP has been successfully carried out for the Cement Industry. This has seen local production rising from 2.1 million metric tonnes in 2002 to 28.6 million tonnes in 2012.

## 12.1 Backward Integration Programme Policy Thrust

- Companies granted approval for importation of sugar are expected to commence investing in backward integration projects immediately;
- Refineries are expected to begin sourcing their raw materials (raw sugar) requirement from their local production within 3 years of plant commissioning;
- Monitoring agencies and SURMIC Sub-committees will monitor compliance and regularly evaluate the projects and report progress to the SURMIC;

## 12.2 Backward Integration Programme-Support Initiative (BIPSI) Incentives

* In addition to the investor-specific incentives already highlighted in section 9.3 and in line with global best practice, grants/loans from the Sugar Levy may be provided to local sugar manufacturers in support of land development, irrigation etc, on-site infrastructural services in the outgrower component (subject to the satisfactory fulfillment of conditions stipulated by the National Sugar Development Council (NSDC) and Bank of Industry (BOI);

* A dedicated window of support by the Bank of Industry (BOI) & Bank of Agric. (BOA) at single digit interest rate for local sugar manufacturing. This shall address fixed and working capital requirements in the areas of field

development and plant and machinery acquisition. Tentatively, a proportion of BOA and BOI's loanable funds to be matched by funds from Sugar Levy shall be earmarked for this purpose;

* Opportunity for investors with verifiable Backward Integration Programmes to be allowed to import any type of sugar and this shall be benchmarked on their local production efforts, *as is being done for the cement sub-sector.*

## 12.3 Proposed Timelines for the Implementation of Greenfield Projects and Start-ups Under the NSMP

Without prejudice to the prior plan by any investor, for the implementation of start-ups or Greenfield projects under the NSMP, we believe the following timelines can serve as appropriate guide. Investors are to note that project monitoring by appropriate Agencies as well as benchmarking of progress recorded will be based on these timelines;

**(i)** **Year 1** Discussions with Technical Partners, Financial Institutions, Land Acquisition etc.; Conduct of Feasibility Studies.

**(ii)** **Year 2** Land Development (Sugarcane Field); Factory Development (Civil Works); Establishment of Sugarcane Nursery.

**(iii)** **Year 3** Expansion of Sugarcane Field, Civil Works (continued); Acquisition of Factory Machinery and Equipment.

**(iv)** **Year 4** Sugarcane Field Expansion; Completion of Civil Works and Installation of Machinery and Equipment and Factory (Dry) Test-running.

**(v)** **Year 5**- Sugarcane Field Expansion continues, First Year Sugar Production (at Low Capacity Utilization)

## 12.4 Backward Integration Program: Sugar Importation Template and Conditions

Under the NSMP, all Refineries are expected to commence the immediate implementation of Backward Integration Programme (BIP), through which they shall be expected to replace raw sugar importation with sugar produced locally. Below is the approved timelines, after project commissioning, for raw sugar import substitution;

**TABLE 9a: TIMELINES FOR RAW SUGAR IMPORT SUBSTITUTION BY OLD REFINERIES**

| Years after refinery commissioning | Local production as % of refinery capacity utilization | Raw sugar import quota as % of refinery capacity utilization |
|---|---|---|
| 1 Year | 0% | 100% |
| 2 Years | 10 | 90% |
| 3 " | 20% | 80% |
| 4 " | 30% | 70% |
| 5 " | 40% | 60% |
| 6 " | 50% | 50% |
| 7 " | 60% | 40% |
| 8 " | 70% | 30% |
| 9 " | 80% | 20% |
| 10 | 100% | 0 |

**TABLE 9b: TIMELINES FOR RAW SUGAR IMPORT SUBSTITUTION BY NEW REFINERIES**

| Years after refinery commissioning | Local production as % of refinery capacity utilization | Raw sugar import quota as % of refinery capacity utilization |
|---|---|---|
| 1 Year | 0% | 100% |
| 2 Years | 0% | 100% |
| 3 " | 0% | 100% |
| 4 " | 10% | 90% |
| 5 " | 20% | 80% |
| 6 " | 40% | 60% |
| 7 " | 55% | 45% |
| 8 " | 65% | 35% |
| 9 " | 75% | 25% |
| 10 " | 100% | 0% |

## 12.5 Backward Integration Programme and Conditions for Sugar Importation

The following shall be the conditions for BIP implementation:

1. Each Refinery shall be required to submit its BIP plans along the guidelines provided to the FMTI/NSDC. This shall form the basis of subsequent monitoring of its operational progress as well as raw sugar quota allocation.

2. No Refinery operating on imported raw sugar is allowed to expand its installed capacity WITHOUT government approval, effective 1st January, 2013

3. If a Refinery does not fulfill its local production target for any one year after utilizing the import quota allocated, such Refinery shall be benchmarked on the ***expected capacity utilization*** for the following year. In computing its import quota for the following year, the shortfall in local production in the current year will be carried over to the expected local production for next year and be made the benchmark for import quota allocation, unless a waiver from SURMIC is approved.

4. For any start-ups engaged in refined sugar importation, import permit will ONLY be approved and quota allocated upon full compliance with NSMP BIP implementation timelines for Start-ups AND the presentation of authentic job order from existing clients who for justifiable reasons cannot source their requirement from within the country.

5. All major industrial users of refined sugar as raw material are required to source their requirement from within but if for justifiable reasons such requirement are to be met through importation, they will be required to submit their projected sugar requirement for 3-5 years ahead and comply with other sugar importation guidelines as approved.

6. **Importation of sugar in retail packs are banned** but all local sugar packaging and cubing companies are expected to source their refined sugar needs from within and may only be allowed to import refined sugar upon presentation of evidence of full compliance with NSMP BIP Implementation timelines for Start-ups.

7. All sugar importation shall be approved by the President on the recommendation of SURMIC. Any sugar consignment imported without Presidential approval, shall be classified as contraband and be confiscated by the Nigeria Customs Service.

8. All sugar imports, whether raw or refined from whatever country of origin shall attract the appropriate as approved by Government as captured under section 9.1
9. Importation of High Fructose Corn Syrup ( HFCS or Chemically Pure Fructose will be strictly regulated in order to protect local sugar production investments and efforts

# Chapter 13

# Monitoring, Evaluation and Reporting

## 13.1 Monitoring

The achievement of the objectives of this Plan will depend essentially on how the activities and outputs are effectively implemented, monitored and evaluated. Monitoring will be done using the instrument provided in **Annex V.** The instrument has expected outcomes, indicators and annual targets for measuring performance. This exercise will help determine whether the implementation is in line with the stated objectives; establish the need for any modifications in the light of the changes in the sugar subsector, the general industrial and/or the political environment.

Agencies that will be involved in the monitoring of the implementation of the NSMP at various levels include:

i. Federal Ministry of Trade and Investment (FM &TI)
ii. Federal Ministry of Agriculture and Rural Development (FMA & RD)
iii. National Planning Commission (NPC)
iv. Various Committees of the National Assembly on oversight functions
v. National Sugar Development Council (NSDC)

### 13.1.1 Monitoring Mechanism

### 13.1.2 Stakeholders Organization Strategic Plans

For ease of monitoring, the sugar industry stakeholders will align their objectives and strategies with the *NSMP*. The individual strategies should have clearly defined activities with specific timelines for implementation. Stakeholder organization are to forward their annual strategic plan to NSDC. The implementation of stakeholder strategic plans should be in line with the overall objectives of the sugar industry.

## 13.2 Evaluation

The implementation of the NSMP will be in phases. For the purpose of effective evaluation, each phase covers a four year period. Each implementation phase will be

subjected to three evaluations, which are End-of-Year Annual Evaluation; Mid-Term Evaluation; and End-Term Evaluation. The evaluations will be done using the indicator monitoring template provided in **Annex V and VI.**

### 13.2.1 End-of-Year Annual Evaluation (EYAE)

To ensure successful implementation of the NSMP, the industry will undertake an annual evaluation at the end of each year. The annual review for years two and four may coincide with the Mid-Term and End-Term Evaluations.

### 13.2.2 Mid-Term Evaluation (MTE)

The purpose of the Mid-Term Evaluation (MTE) will be to assess the extent to which the Plan is meeting its implementation objectives, operational challenges and adherence to timelines, mid-way into the implementation of a phase. The MTE will be carried out in October of the 2nd year of each phase.

### 13.2.3 End-Term Evaluation (ETE)

The prime purpose of the End-Term Evaluation for the NSMP which is expected to be carried out at the end of each phase will be to address four issues:

* **Effectiveness:** The extent to which the implementation of activities met the stated objectives and targets;
* **Impact Continuity:** Assesses the impacts of the achievements recorded;
* **Lessons Learnt**: Keep records of lessons learnt;
* **Terms of Reference (TORs):** Develop the TORs for the next phase.

## 13.3. Supervision

The overall supervision of the implementation of NSMP shall be through the appropriate sub-committees of the SURMIC to which it shall submit quarterly reports. This will require the cooperation of all industry stakeholders. Findings from the supervision missions will be presented to the SURMIC and follow-up actions discussed and agreed. NSDC as SURMIC secretariat will ensure prompt retrieval and compilation of reports.

### 13.3.1 Quarterly Review Meetings (QRM)

An interactive session of stakeholder's representatives will be held on quarterly basis. The quarterly meeting will review progress of implementation of activities and outputs to enable stakeholders identify and take necessary actions to address emerging challenges. The QRM is designed to give the industry a chance to interrogate what is being done. The QRM will be facilitated by NSDC.

## 13.3 Reporting

Reporting the progress of implementation and achievement will be critical in adjusting strategic directions and measuring performance. Progress reports will be made on quarterly basis. The reports will outline in summary form projected targets, achievements, facilitating and militating factors. The reports will be prepared by NSDC and submitted to the SURMIC for review. Issues that will require policy interventions will be forwarded to the Federal Executive Council (FEC), by the Honourable Minister of Trade and Investment.

# ANNEXTURES

## ANNEX I: PESTLE ANALYSIS

| Issues | Global | Regional | National | Impact |
|---|---|---|---|---|
| **Political** | ✓ Governance<br>✓ Human Rights<br>✓ Terrorism | ✓ Militancy and political instability<br>✓ Conflicts | ✓ Communal crises diverting attention and resources from local needs<br>✓ Poor enforcement of sugar polices | Uncertainties leading to investment |
| **Economic** | ✓ Increase in Oil prices<br>✓ Increase in food prices<br>✓ Non Tariff Barriers<br>✓ WTO agreement on bilateral trade<br>✓ Counterfeiting<br>✓ Infringement of intellectual rights | ✓ Increasing food prices<br>✓ Compliance with regional agreements e.g. ETLS<br>✓ World Trade Organization (WTO) agreement and bilateral arrangements | ✓ Economic crimes (money laundering, corruption)<br>✓ Increasing Fuel prices<br>✓ Food insecurity<br>✓ Poor enforcement of tax laws and international Agreement and standards<br>✓ Counterfeit goods<br>✓ High inflation<br>✓ Weak currency<br>✓ Smuggling<br>✓ Dumping | ✓ Unfair competition from external producers<br>✓ Unfavorable investment climate<br>✓ Non patronage of locally made goods |
| **Social** | ✓ Communication barrier resulting in additional costs and down time<br>✓ Drug trafficking and Drug abuse leading to reduced productivity<br>✓ Human trafficking and brain drain<br>✓ Stereotyping | ✓ Language barriers<br>✓ High HIV/AIDS prevalence<br>✓ Regional conflicts<br>✓ stereotyping | ✓ Low literacy levels<br>✓ HIV/AIDS and malaria prevalence<br>✓ High crime rates and insecurity<br>✓ Industrial labour dispute<br>✓ Drug abuse<br>✓ Ethno-religious conflicts | ✓ High cost of doing business<br>✓ Low productivity<br>✓ Industrial hazards<br>✓ General insecurity |
| **Technology** | ✓ High cost of advanced technologies<br>✓ Low adaptability of advanced technology | ✓ Low funding for Research and Innovations<br>✓ Low level of technological know how | ✓ Poor routine maintenance culture<br>✓ Inability to upgrade to modern methods | ✓ Lack of competitiveness<br>✓ High cost of technology<br>✓ Reliance on obsolete technology<br>✓ Low productivity |
| **Legal** | ✓ High legal cost | ✓ Ratification of Regional Treaties and Trade agreements<br>✓ Bureaucratic bottle necks | ✓ Weak institutional capacity to regulate sugar subsector<br>✓ Dominance of informal business in the sector<br>✓ Inadequate of enforcement regulatory tools | ✓ Low tax base<br>✓ Low compliance to standards and agreements |
| **Environment** | ✓ Climate change and desertification<br>✓ Non compliance with the multilateral Environmental Agreements | ✓ Climate change and desertification | ✓ Poor enforcement of environmental standards<br>✓ Rapid degradation of water bodies, biodiversity and habitats | ✓ Degraded environment impacting the poor severely<br>✓ Climate dependent sectors are adversely affected |

## ANNEX II: STAKEHOLDERS COMPARATIVE ADVANTAGE ANALYSIS

| Stakeholders | Responsibilities | Comparative Advantage | Target | Role in the sugar industry |
|---|---|---|---|---|
| **Government** | ✓ Sector Coordination and Policy formulation | ✓ Policy formulation | ✓ Employment generation<br>✓ Food security<br>✓ Forex savings | ✓ Link sector to the government<br>✓ Provide policy direction in the sub-sector<br>✓ Provide specific investment incentives<br>✓ Provide fiscal and non-fiscal incentives |
| **NSDC** | ✓ Regulate, develop and promote the sugar industry<br>✓ Coordinate activities within the industry<br>✓ Facilitate equitable access to benefits and resources | ✓ Regulation<br>✓ Coordination<br>✓ Facilitation<br>✓ Strategy and Target setting<br>✓ advisory | ✓ efficient, effective quality service delivery | ✓ provide regulations, procedures and guidelines on implementation of policies<br>✓ Facilitate access to incentives and funds<br>✓ Implement government policies on sugar sector |
| **Universities And Research Institutions** | ✓ Developing appropriate cane varieties<br>✓ Recommending appropriate agronomic practice<br>✓ Carry out industrial research<br>✓ Training | ✓ Research<br>✓ Innovation<br>✓ Capacity development | ✓ Enhanced research-extension-farmer linkages<br>✓ High and sustained technology adoption rates<br>✓ Human capacity development in the industry | ✓ Release of new, higher yielding, early maturing cane varieties and resistant to pest and diseases<br>✓ Provision of improved irrigation, processing, harvesting and transport management<br>✓ Skilled manpower |
| **Outgrower farmers** | ✓ To produce high quality cane<br>✓ Adopt recommended crop husbandry practice<br>✓ Elect competent representatives | ✓ Cane Production | ✓ Increased cane production<br>✓ Competitive return to land and labour | ✓ To be business oriented<br>✓ Reduce land sub division<br>✓ Key partners in the drive for efficient sugar production<br>✓ Provision of adequate raw materials to the millers |
| **Sugarcane millers** | ✓ Collaborate with other stake holders in all cane growing activities such as supply quality seed cane, harvest and transport<br>✓ Purchase and process sugarcane | ✓ Processing | ✓ To serve and satisfy farmers<br>✓ Increased sugar and by product production | ✓ Increased efficiency in cane harvesting, transportation and processing |
| MDAs | ✓ Supervision of sector activities and programmes<br>✓ Provision of critical infrastructure relevant to their individual mandate | ✓ Regulation, Coordination and Supporting the overall sector | ✓ Overall sector | ✓ Provide support to sugarcane plantations |

# ANNEX III: RESULTS MATRIX

## OBJECTIVE 1: To raise local sugar production to attain self sufficiency

| Strategy | Activity | Responsibility | Output | Output Indicators | Timeline |
|---|---|---|---|---|---|
| Robust monitoring and evaluation of backward integration programme | Developing guidelines for BIPs Plan | NSDC & FMTI | Implementation of guidelines | Area under cane, yield levels/ha, quantity of sugar imported | 2013-2023 |
| | Monitoring of operational progress as set out in the guidelines | Subcommittees of SURMIC | Tracking the progress of the BIP & Reports | % progress on BIP implementation | 2013-2023 |
| Regulation of the entire regime of sugar importation through quota allocation | Benchmarking import quota on the expected capacity utilization | NSDC, SURMIC, FMF, NCS | Reduction in sugar importation | % sugar imported vs local sugar produced | 2013-2023 |
| | Internal sourcing of refined sugar by industrial users | NSDC, SURMIC, FMF, NCS | Reduction in sugar importation | % sugar imported vs local sugar produce | 2013/ continues |
| Investors specific fiscal and other incentives | Zero % duty on machinery and spare parts for local sugar manufacturing industries | NSDC,SURMIC, FMF, NCS | Low cost on farm mechanization | Efficiency in farm mechanization and factory output | 2013/ continues |
| | Five Years tax holiday for sugarcane to sugar value chain and investors in local sugar manufacturing industries | NSDC,SURMIC, FMF, NCS | Low cost on local production | Low cost of production and value added products | 2013/ continues |
| | Input loan for seeds, fertilizers, chemicals, etc | NSDC,SURMIC, FMA&RD, BOI &BOA | Empowering local investors | Amount of money loaned | 2013/ continues |
| | Working capital for farm operations | NSDC, SURMIC, FMA&RD, BOI &BOA | Empowering local investors | Amount of money loaned | 2013/ continues |
| | 30% tax rebate on investment on infrastructure | FIRS, FMF | Increased profitability | Quantity of road and irrigation infrastructure | 2013/ continues |

## OBJECTIVE 2: To stem the tide of unbridled sugar importation

| Strategy | Activity | Responsibility | Output | Output Indicators | Timeframe |
|---|---|---|---|---|---|
| High ta riff structure on sugar importation | Collection of varied sugar tariff | NCS, FMF | Reduce level of sugar importation, Encouraging local sugar production, increased in revenue | Sugar importation, Value of revenue generated | 2013/continues |
| | Revoke approval for non compliance | NSDC & SURMIC | Reduction in sugar import, deterrence for non compliance | Compliance to import quota allocation | 2013/ continues |

## OBJECTIVE 3: To create huge number of job opportunities

| Strategy | Activity | Responsibility | Output | Output Indicators | Timeframe |
|---|---|---|---|---|---|
| Increase in cane area and factory milling capacity | Rehabilitation of field infrastructure and Expanding cane fields of the existing sugar estates | Sugar companies, farmers/growers, FMA&RD | Employment generation | Number of jobs created | 2013/continues |
| | Establishment of new sugar estates and its corresponding sugar factories | Sugar Companies, FMA&RD, Farmers/Millers, BOA | Employment generation | Number of jobs created | 2013/continues |
| | Rehabilitation and upgrading of the existing sugar factories | Sugar Companies, Financial Institution, BOI | Employment generation | Number of jobs created | 2013/continues |
| Outgrower scheme | Mandatory sourcing of 20% of the cane milling requirement of the sugar factories from outgrowers | NSDC, FMA&RD, Sugar Companies, Outgrower Associations | Area of cane under outgrower scheme | Number of farmers employed | 2013/continues |
| | Cane price support mechanism | NSDC, BOI, BOA, CBN, Sugar millers | Profit generation | Value of price intervention | 2013/continues |
| | 100% financing through a revolving loan | NSDC, FMA&RD, BOA, BOI, NAIC etc | More farmers for the Outgrower scheme, more cane | Number of farmers financed or supported through the revolving loan | 2013/continues |
| Enlargement of sugarcane value chain players | Value addition | NSDC, Processors, Companies, Millers etc | Quantity and Quality products | Quality standard certification | 2013/continues |
| | Product Diversification | Processors of other by-products, Marketers, Transporters, Millers, Financial Institutions | New products lines e.g. Ethanol, Animal feeds, electricity generation, etc | Number products reaching the consumer | 2013/continues |

OBJECTIVE 4: To contribute to the production of ethanol and generation of electricity

| Strategy | Activity | Responsibility | Output | Output Indicators | Timeframe |
|---|---|---|---|---|---|
| Development of multipurpose sugarcane variety | Breeding of sugarcane varieties with high sugar and fiber content | NSDC, FMA&RD, IAR, NCRI and USRI | Multipurpose varieties | Cane yield/ha, fiber % cane, pol. % cane | 2013/continues |
| Establishment of Ethanol distilleries | Initiating ethanol Production projects | Millers, Distillers | Ethanol | Values and Liters of ethanol produced | 2013/continues |
| New sugarcane processing plant with high pressure boilers for efficient co-generation | Initiating co-generation projects | Millers, FMP | Electricity | MW generated | 2013/continues |
| Research and Development on ethanol and co-generation in the sugarcane industry | Research and Development | NSDC, Research Institutes (UNILORIN, USRI, IAR etc) | High quality ethanol and co-generation at lower cost | Quantity and value of ethanol and co-generation produced | 2013/continues |

# ANNEX IV: ANNUAL PERFORMANCE BENCH MARKING WITH COMPETITORS

| EFFICIENCY | PARAMETERS | RSA | ZIMBABWE | KENYA | NIGERIA |
|---|---|---|---|---|---|
| Cane quality | Pol % Cane | 12.99 | 14 | 13.5 | |
| | Fiber % Cane | 14.97 | 14.01 | 15.5 | |
| Throughput | TCH | 296.25 | 461.44 | 233.69 | |
| | Mill Numbers | 15 | 2 | 7 | |
| | TCD - operational | 85,810.59 | 18,042.48 | 40320.00 | |
| | TCD- designed/installed | 106,650.00 | 22,148.88 | 50,400.00 | |
| | Cane crushed (TCY) | 21,156,562 | 423,1784.00 | 13,023,360.00 | |
| | Sugar produced | 2,402,763.00 | 512,372.00 | 1,432,569.60 | |
| | Capacity Utilization | 80.46 | 81.46 | 80.0 | |
| **Separation efficiency** | R/extraction % | 98 | 96.68 | 96.63 | |
| | Rendement | 11.36 | 12.11 | 11.00 | |
| | ERC % sucrose in cane | 86.05 | 86.48 | 86.25 | |
| | Undetermined losses | 1.92 | 3.14 | 2.00 | |

# ANNEX V: ANNUAL TARGETS MONITORING INDICATORS

## Firm/Farm Annual Targets

| **Objective: To raise local sugar production to attain self sufficiency** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Outcome: Increase of Cane area** | | | | | | | | | | | | |
| **Outcome Indicator: Area under cane** | | | | | | | | | | | | |
| **Outcome** | **Indicator** | **Unit** | **Base Year** | **Base Value** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| | Area Under Cane | Ha | 2012 | | | | | | | | | |
| | SSCL | Ha | | | | | | | | | | |
| | JSC | Ha | | | | | | | | | | |
| | Golden Sug Coy | Ha | | | | | | | | | | |
| | Ibaji Sugar Coy | Ha | | | | | | | | | | |
| | **Others** | **Ha** | | | | | | | | | | |
| | | | | | | | | | | | | |

| **Objective: To raise local sugar production to attain self sufficiency** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Outcome: Tonnes cane harvested and delivered to the mill** | | | | | | | | | | | |
| **Outcome Indicator: Tonnes of cane** | | | | | | | | | | | |
| **Outcome** | **Indicator** | **Unit** | **Base Year** | **Base Value** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2010** |
| | Tonnes of cane delivered to the mill | Tonnes | **2012** | | | | | | | | | |
| | SSCL | | | | | | | | | | | |
| | JSC | | | | | | | | | | | |
| | Golden Sug Comp | | | | | | | | | | | |
| | Others | | | | | | | | | | | |

| **Objective: To raise local sugar production to attain self sufficiency** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Outcome: Tonnes Sugar Produced** | | | | | | | | | | | | |
| **Outcome Indicator: Tonnes sugar** | | | | | | | | | | | | |
| **Outcome** | **Indicator** | **Unit** | **Base Year** | **Base Value** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| | Area Under Cane | Tonnes Sugar | 2012 | | | | | | | | | |
| | SSCL | | | | | | | | | | | |
| | JSC | | | | | | | | | | | |
| | Golden Sug Comp | | | | | | | | | | | |
| | Others | | | | | | | | | | | |

| Objective: To stem the tide of unbridled importation | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outcome: Import Quota Allocation (Refined or Raw) | | | | | | | | | | | | |
| Outcome Indicator: Tonnes Sugar | | | | | | | | | | | | |
| **Outcome** | **Indicator** | **Unit** | **Base Year** | **Base Value** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| | Capacity Utilization | TS | 2012 | | | | | | | | | |
| | DSR | TS | | | | | | | | | | |
| | BUA | TS | | | | | | | | | | |
| | Golden Sug Comp | TS | | | | | | | | | | |
| | Others | | | | | | | | | | | |

| Objective: To stem the tide of unbridled importation | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outcome: Raw sugar imported and refined | | | | | | | | | | | | |
| Outcome Indicator: Tonnes Sugar | | | | | | | | | | | | |
| **Outcome** | **Indicator** | **Unit** | **Base Year** | **Base Value** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| | Capacity Utilization | TS | 2012 | | | | | | | | | |
| | DSR | TS | | | | | | | | | | |
| | BUA | TS | | | | | | | | | | |
| | Golden Sug Comp | TS | | | | | | | | | | |
| | Others | | | | | | | | | | | |

| Objective: To stem the tide of unbridled importation | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outcome: Raw sugar imported and refined | | | | | | | | | | | | |
| Outcome Indicator: Tonnes Sugar | | | | | | | | | | | | |
| **Outcome** | **Indicator** | **Unit** | **Base Year** | **Base Value** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| | Capacity Utilization | TS | 2012 | | | | | | | | | |
| | DSR | TS | | | | | | | | | | |
| | BUA | TS | | | | | | | | | | |
| | Golden Sug Comp | | | | | | | | | | | |
| | Others | TS | | | | | | | | | | |

| Objective: Create huge job opportunities | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outcome Labour employed | | | | | | | | | | | | |
| Outcome Indicator: Number of labour employed | | | | | | | | | | | | |
| **Outcome** | **Indicator** | **Unit** | **Base Year** | **Base Value** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| | Number employed | No. | 2012 | | | | | | | | | |
| | DSR | No. | | | | | | | | | | |
| | BUA | No. | | | | | | | | | | |
| | Golden Sug Comp | No. | | | | | | | | | | |

| Objective: Create huge job opportunities | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Outcome: Enlargement of value chain players | | | | | | | | | | | | |
| Outcome Indicator: | | | | | | | | | | | | |
| **Outcome** | **Indicator** | **Unit** | **Base Year** | **Base Value** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| | Capacity Utilization | No. | 2012 | | | | | | | | | |
| | DSR | No. | | | | | | | | | | |
| | BUA | No. | | | | | | | | | | |
| | Golden Sug Comp | No. | | | | | | | | | | |

# ANNEX VI: PLAN INDICATOR TRACKING EVALUATION TEMPLATE

| | YEAR | | | | | | CUMMULATIVE | |
|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Target** | **Achieved** | **Variance** | **Scorecard** | **Comments** | **Improvement Action** | **Achievement to Date** | **MeanScore Card** |
| | | | | | | | | |
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| Score card | Rating | Target achievement level % |
|---|---|---|
| 5 | Very Good | >85 |
| 4 | Good | 69-84 |
| 3 | Satisfactory | 53-68 |
| 2 | Fair | 37-52 |
| 1 | Poor | 0-36 |