STRATEGIC PLAN

2021-2025

BIOTECHNOLOGY WORKING FOR YOU!!!

Toward an empowered and prosperous upper middle income society by 2030

In his inaugural statement in 2017,
His Excellency, President Dr. E.D. Mnangagwa stressed
the importance of industrialization and modernization of
Zimbabwe's economy by embracing
advanced technologies.

1. FOREWORD

Prof. Florence Mtambanengwe

I am pleased to present to you this National Biotechnology Authority strategic plan for 2021-2025. The National Biotechnology Authority is an Agency of The Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development. The strategic plan, developed after wide consultations with the NBA Board, Ministry Senior Government Officials, Management, Staff and stakeholders, is designed to transform the NBA into an effective, efficient and relevant organisation geared to deliver on its mandate of regulating, monitoring and commercialising biotechnology in Zimbabwe. The pillars of the strategy are as follows:

1. Active biotechnology Research and Development that leads to the production of marketable goods and services.
2. The establishment of a vibrant bio-economy through the development of biotechnology business enterprises.
3. Good Corporate Governance and transparency.
4. Increased coverage and strengthened regulatory function of the authority.
5. Increased resource use efficiency and a green economy.

This Strategic Plan aims to restructure the NBA and bring in a strong team of leaders that work together for the successful implementation of the organisation's vision. New support departments namely; the Internal Audit, the Procurement Management Unit and the Corporate and Legal Affairs will be established to strengthen good corporate governance. This strategic plan will ensure that through the functions of the NBA, biotechnology will contribute meaningfully to national economic development by leading to the establishment of biotechnology industries that produces goods and services for the nation and beyond. Biotechnology will lead the industrialisation and modernisation of Zimbabwe. This strategic plan dovetails with the National Vision 2030.

Board Chairperson
Prof. Florence Mtambanengwe

CONTENTS

LIST OF ACRONYMS

1. **ABNE** - African Biosafety Network of Expertise
2. **AiBST**- African Institute of Biomedical Science and Technology
3. **ATTC**-Associated Tissue Culture Company
4. **BBI** - Bio-Bridge Initiative
5. **BCH** - Biosafety Clearing House
6. **COMESA** - Common Market for Eastern and Southern Africa
7. **EMA** - Environmental Management Agency
8. **EU** - European Union
9. **HRI** - Horticulture Research Institute
10. **ICGEB** - International Centre for Genetic Engineering and Biotechnology
11. **ICT**-Information and communication technology
12. **ISAAA** - International Service for the Acquisition of Agri-biotech Applications
13. **NDS 1**-National Development Strategy 1
14. **PRAZ**-Procurement Regulatory Authority of Zimbabwe
15. **SANBio** - Southern African Network for Biosciences
16. **SAZ** - Standards Association of Zimbabwe
17. **SPV**-Special Purpose Vehicles
18. **TSPRA** - Transitional Stabilization Programme Reforms Agenda
19. **ZEF**- Zim Earthworm Farms
20. **ZOPPA** - Zimbabwe Organic Promoters and Producers Association of Zimbabwe Trust

1. EXECUTIVE SUMMARY

Dr. Deckster Tonny Savadye

This strategy document makes reference to the National Development Strategy 1 (NDS 1) as the compass the for National Development to enable Zimbabwe to achieve Vision 2030, an empowered upper middle income economy by the year 2030 as pronounced by His Excellency, the President, Dr. Emmerson Dambudzo Mnangagwa. The strategy also considers the African Union (AU) Africa Agenda 2063; the Southern Africa Development Community (SADC) 2008 Science Protocol: SADC Industrialization Strategy and Roadmap 2015 - 2063; United Nations (UN) Multilateral Environmental Agreement, Social Development Goals (SDGs) and SADC/COMESA industrialization strategy. In his inaugural statement in 2017, His Excellency, President Dr. E.D. Mnangagwa stressed the importance of industrialization and modernization of Zimbabwe's economy by embracing advanced technologies.

In the context of the industrialization and modernization strategy, biotechnology is part of the growth trajectory that presents the fastest possible way to increase agricultural productivity, foster efficient use of natural resources and establish a heritage-based bio-economy.

The NBA is a statutory body mandated to regulate, support and manage biotechnology research, development and commercialisation. Biotechnology is the utilization of organisms, their biological processes, or systems to produce goods and services that improve human lives. The products of biotechnology are knowledge-based, tangible goods and services. Biotechnology is essential for human existence and socio-economic development. The Government of Zimbabwe has provided a conducive environment for the practice of biotechnology in Zimbabwe through the establishment of biotechnology programmes in academic institutions (Primary and Secondary Schools, Universities, Polytechnics, Colleges, Biotechnology research institutions (both public and private) and the development of the biotechnology regulatory framework in a bid to align with global advances and best practices in biotechnology.

The Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development is on the drive to cause industrialisation through a vibrant innovation Ecosystem dubbed Education 5.0. The Ministry is also supporting the National Biotechnology to lead the establishment of a vibrant bio-economy by producing biotechnology goods and services. This strategy is aligned with the National Development Strategy 1, the guiding policy for the period 2021 to 2025. This strategy will build on the achievement already made by the Transition Stabilisation Policy that ended on 31 December 2020.

This new strategy builds on the solid foundation of the achievements the Transitional Stabilization Programme Reforms Agenda (TSP) 2017-2020. In the Second Republic the NBA the will make the nation realise the full potential of biotechnology to create wealth, industry and national development. The achievements of the TSP have provided a strong base for the development of a robust biotechnology sector that delivers a vibrant bioeconomy. This strategy aims to achieve the following:

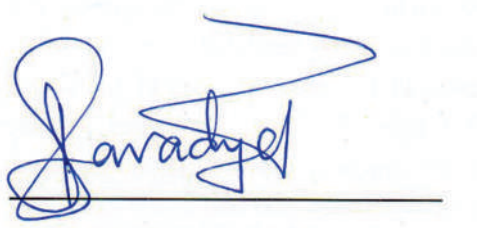
- Driving the socio-economic development of Zimbabwe through unlocking the full potential of biotechnology to produce goods and services which contribute to the National Gross Domestic Product (GDP).
- Promoting the safe use and application of biotechnology in all relevant sectors of the economy.
- Ensuring that Zimbabwe does not lag behind in embracing the gains of biotechnology;

To realise the above, the National Biotechnology Authority will use the following strategies:

1. Actively promote biotechnology research, development and innovation in key sectors of the economy which include agriculture, health, energy, industry and environment.
2. Restructure the organisation so that it is geared for the production of biotechnology goods and services by establishing the Business Enterprise Development Department.
3. Mainstreaming of biotechnology and related disciplines into the curricula for primary, secondary and tertiary institutions and actively participate in the innovation ecosystem as directed by Ministry of Higher and Tertiary Education, Innovation Science and Technology Development.
4. Strengthen the regulatory framework which enables the production of safe and quality biotechnology goods and services.
5. Mobilise resources through public and private partnerships with local, regional and international organisations and companies.

Through the Strategic Plan for 2021-2025 the National Biotechnology Authority is already a transforming organisation moving from concentrating on regulation to an organisation with 175 employees concentrating on research and development and the commercialisation of biotechnology goods and services. The strategy will be supported by a proposed output budget of ZWL 3,610,814,493 (USD41,986,215) assuming the current macroeconomic conditions in the country remain unchanged. During the implementation cycle of the plan there will be strict monitoring of the targets and whenever necessary responsive adaptation will be made to ensure success and delivery by 2025. By the end of this cycle of the strategy, the stimulated Bio-economy of Zimbabwe will be directly contributing USD 1.6 Billion to the GDP of the country.

Chief Executive Officer and Registrar
Dr. Deckster Tonny Savadye



3. INTRODUCTION AND BACKGROUND

The mandate of the NBA is to regulate, actively support and manage biotechnology research, development and application. As the national competent authority for all biotechnology and biosafety matters, the NBA ensures biosafety in the development and deployment of biotechnology. NBA advises Government on all aspects concerning the development, production, use, application and release of biotechnology products and ensures that such activities are done in accordance with the provisions of the National Biotechnology Authority Act.

Biotechnology, often abbreviated to biotech, is the area of biology that uses living processes, organisms or systems to manufacture products or technology intended to improve the quality of human life.The scope for biotechnology is very wide and includes agricultural biotechnology environmental biotechnology; industrial biotechnology and medical and pharmaceutical biotechnology. Thus, biotechnology is seen as one of the technologies with potential to empower people to attain household food and nutritional security, sustainable socioeconomic development and to reverse environmental degradation. Coupled with ICT, molecular biology and other emerging technologies, biotechnology will accelerate the transformation of Zimbabwe from a raw material-based to a knowledge-based economy with multiple value chains that produce goods and services.

The application of biotechnology has led to numerous advances and sustainable socioeconomic development in many countries which include South Africa, China, India, Argentina, Brazil and the United States of America. Unfortunately, this has not been the case in Zimbabwe. Well-funded biotechnology research can immensely contribute to the fiscus.Though the country put in place manpower training programmes, legal and institutional frameworks for harnessing biotechnology by as early as 1992, the full exploitation of biotechnologies is still to be realised in Zimbabwe.

3.1 NBA Achievements during the TSPRA (2019-20200

Significant strides have been made in the biotechnology field in Zimbabwe.During the period of the Transitional Stabilization Programme Reforms Agenda (TSP) 2017-2020, the NBA made a number of achievements to stimulate the biotechnology sector in Zimbabwe. The following achievements were made:

a) A new Board was appointed in 2018.

b) The new Board restructured the NBA from a purely regulatory agency to an agency that would lead advanced research and development in biotechnology and innovation to produce goods and services. A Research and Development and innovation was established and is now functional.The Department has produced 5 prototypes products that will be commercialised in this new strategy. A Business Enterprise Development Department was established to capture biotechnology research results and the innovations to create business ventures and industries. Thus, the commercialisation of biotechnology would lead to the creation of biotechnology industry. The Business Enterprise Development was established during this TSP and is now functional. The Business Enterprise Department has registered one company, the Associated Tissue Culture and is on the brink of completing a Mapfura/Marula Value-Addition Factory in Rutenga,Mwenezi District.

c) The restructuring improved good corporate governance and accountability of the

organisation which was lacking. The oversight function of the Board was restored, the Internal Audit and the Legal Affairs units were established to increase accountability. The inclusion of 3 Executive Directors in the organisational structure strengthened the functions of the management of the management.

d) The NBA initiated research projects on priority programmes for the nation namely: the establishment of the Genomics Centre starting with the National BioBank established at the University of Zimbabwe Innovation Hub, research on biopharmaceuticals and product development for vaccines and insulin.

e) The NBA has also during this period participated in the ease of doing business reform that entailed the simplification of export regulatory requirement of Statutory Instrument 157 to promote exports by Zimbabwean companies. The NBA therefore implemented reforms that contribute to the improved ease of doing business ranking by working with the business community.

f) The NBA has formed a joint venture with a Chinese Company and will be developing several biotechnology value chains with the initial focus being on the Irish Potato value chains. The project has started to bear fruit as technology-transfer from China has started.

This strategic plan document, created by the National Biotechnology Authority for the period 2021 to 2025, is designed to change the prevailing situation in Zimbabwe by implementing deliberate programmes that ensure biotechnology contributes tangible products and services that would enable Zimbabwe to attain the goal of being an industrialised upper middle-class economy by 2030. The strategy has been aligned with the National Development strategy 1 running from 2021 to 2025. A review and extension of the strategy will be done at the end of 2023. We recognises the important strides made in the previous strategic period to create a conducive environment for practicing biotechnology by laying a solid regulatory framework and infrastructure. The strategy emphasises that Zimbabwe should have a vibrant and strong biotechnology industry that solves national problems, adds value to our natural resources, exports finished goods and services, creates employment and makes a significant contribution to the national gross domestic product (GDP).

4. VISION

To be a hub for the development and safe application of biotechnology in all key socio-economic sectors by 2030.

5. MISSION:

To position biotechnology as a key pillar for national development, industrialization and modernization in agriculture, health, energy and mining by managing, regulating and advancing biotechnology research, development and innovation/application for the delivery of socioeconomic and environmental benefits.

6. VALUES:

1. Innovation - We champion the creation of new and safe biotechnology applications and products.
2. Responsiveness - We continuously and timeously adopt new and emerging biotechnologies and enable their commercialization.
3. Accountability:- We will timeously justify our actions to our various stakeholders1.
4. Excellence:- We endeavour to attain and uphold the highest level of quality at all times.
5. Integrity:- We adhere to moral and ethical principles in all our endeavours.
6. Fairness:- We ensure fair treatment of ourstakeholders2.

GOAL 1:

TO PROMOTE BIOTECHNOLOGY RESEARCH DEVELOPMENT AND INNOVATION IN KEY SECTORS OF THE ECONOMY.

7. THE DESCRIPTION OF THE STRATEGY

7.1 Strategic Objectives

This strategy will create a new and improved national biotechnology ecosystem for Zimbabwe. The use of biotechnology for economic development in Zimbabwe have so far been rudimentary, however, this strategy with change the situation and ensure that a vibrant bioeconomy is established and delivered by 2030. For the cycle 2021-2025.

OBJECTIVE 1:

To actively promote and undertake the development and utilization of biotechnology research & development results (products and services thereof).

The National Biotechnology Authority will lead the proof of concept and undertake 5 advanced research projects through its Research, Development and Innovation programme.

Strategies

i. Build research and development laboratories and the Genomics Centre.
ii. Equip the laboratories with additional state of the art research equipment.
iii. Improve skills level of the scientific and technical staff.
iv. Advertise and recruit 12 (PhD) qualified and skilled staff for all the positions indicated in the organogram. This is especially important for research staff and technologists in the Genomics Centre.
v. Recruitment of skilled scientists.
vi. Cause genetically modified (GM) crop trials (Cotton, Soybeans, Maize, Sweet potato).
vii. Collaborative research programmes with other research institutions and organisations
viii. Find more external organizations to work with.

OBJECTIVE 2.

To mainstream of biotechnology into curriculum all levels of the Zimbabwean Education System. This will transform Zimbabwe into a knowledge-based economy.

Strategies

i. Popularise biotechnology through public awareness workshops and courses.
ii. For a network of Biotechnology Clubs and Associations at schools, Higher and Tertiary education institution.
iii. Conduct scientific activities in collaboration with research and development organisation, schools and Higher and Tertiary education institution.
iv. Conduct and collaborate with communities and individuals with interest in biotechnology

OBJECTIVE 3.

Mobilisation of resources through public and private, partnerships with local, regional and international organisations.

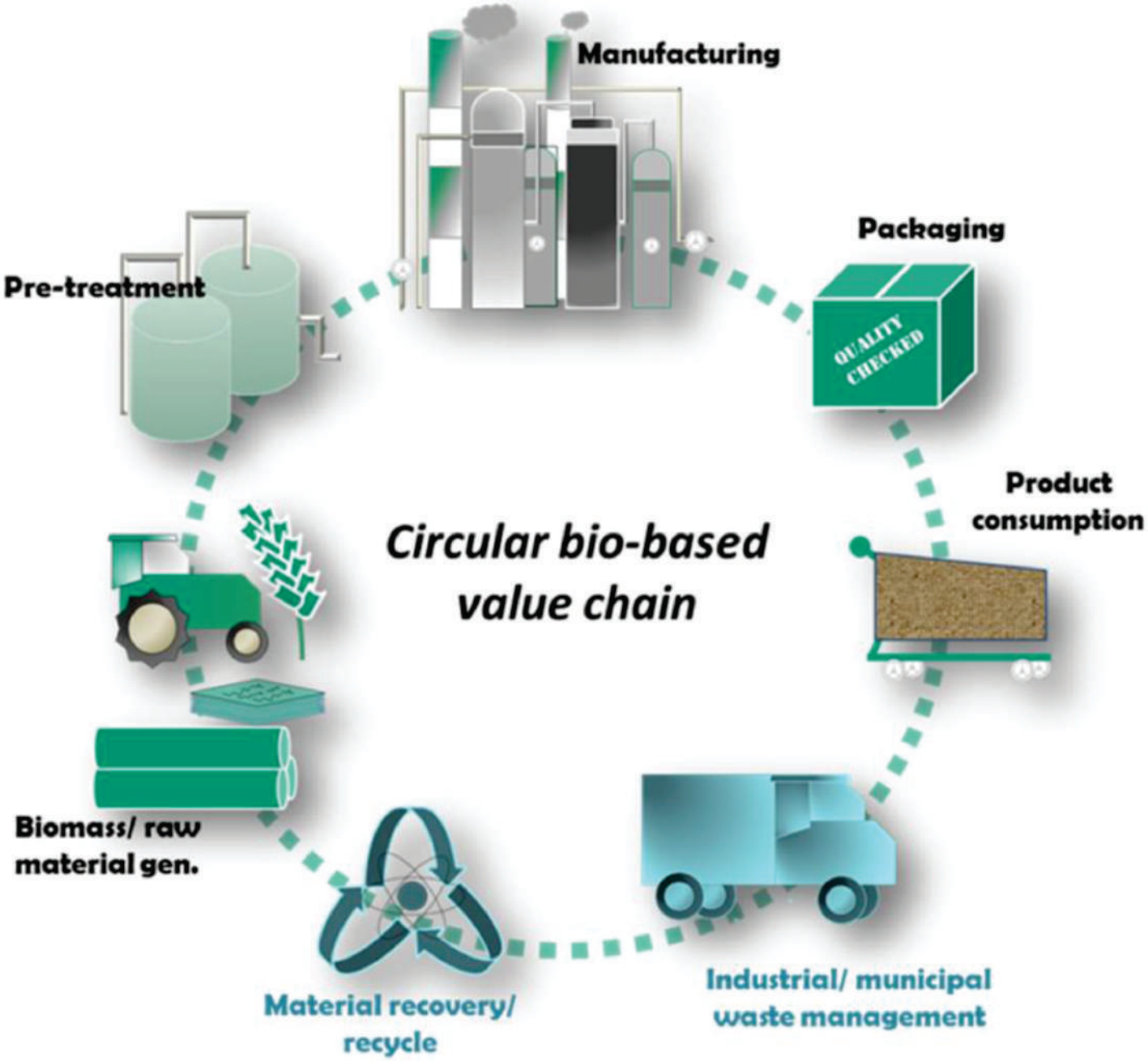
Strategies

i. Form regional and international strategic partnerships.
ii. Join and participate in regional and international biotechnology associations and bodies.
iii. Participate in regional and international expos and symposia.

OUTCOMES

" Increased biotechnology innovation research and development in Zimbabwe

BIOTECHNOLOGY VALUE CHAINS



GOAL 2:

TO MOBILIZE RESOURCES TOWARDS ROBUST BIOTECHNOLOGY VALUE CHAINS AND A VIBRANT BIO-ECONOMY.

7.2 Strategic Objectives

The National Biotechnology Authority will establish biotechnology industries that produce biotechnology goods and services and ensure practical application of biotechnology in Zimbabwe leads to national Development.

OBJECTIVE 1.

To create business activities through the establishment of Biotechnology Industries that generate wealth through value addition of natural resources and that offer modern biotechnology services.This will achieve the objective and of industrialisation and modernisation of the Zimbabwean economy.In this strategy cycle at least 3 biotechnology enterprises will be established.

Strategies

i. To establish five biotech-led strategic business units through commercializing research results.
i. Commercialise
ii. Establishment of JV Companies
iii. Establishment of Genomics centre
iv. Operationalise new MOUs/JVAs
v. Market penetration'
vi. Product development

OUTCOMES

" Increased economic activity and industrialization

GOAL 3:

TO REGULATE EFFECTIVELY AND EFFICIENTLY BIOTECHNOLOGY APPLICATIONS AND PRODUCTS IN THE COUNTRY.

7.3 Strategic Objectives

The regulatory arm of the National Biotechnology Authority is the most developed programme, however, it has only 56% coverage. In this strategic plan the regulatory coverage will be increase to 95% by opening new port offices and strengthening the Inspectorate unit to conduct more surveillance and inspections.

OBJECTIVE 1.

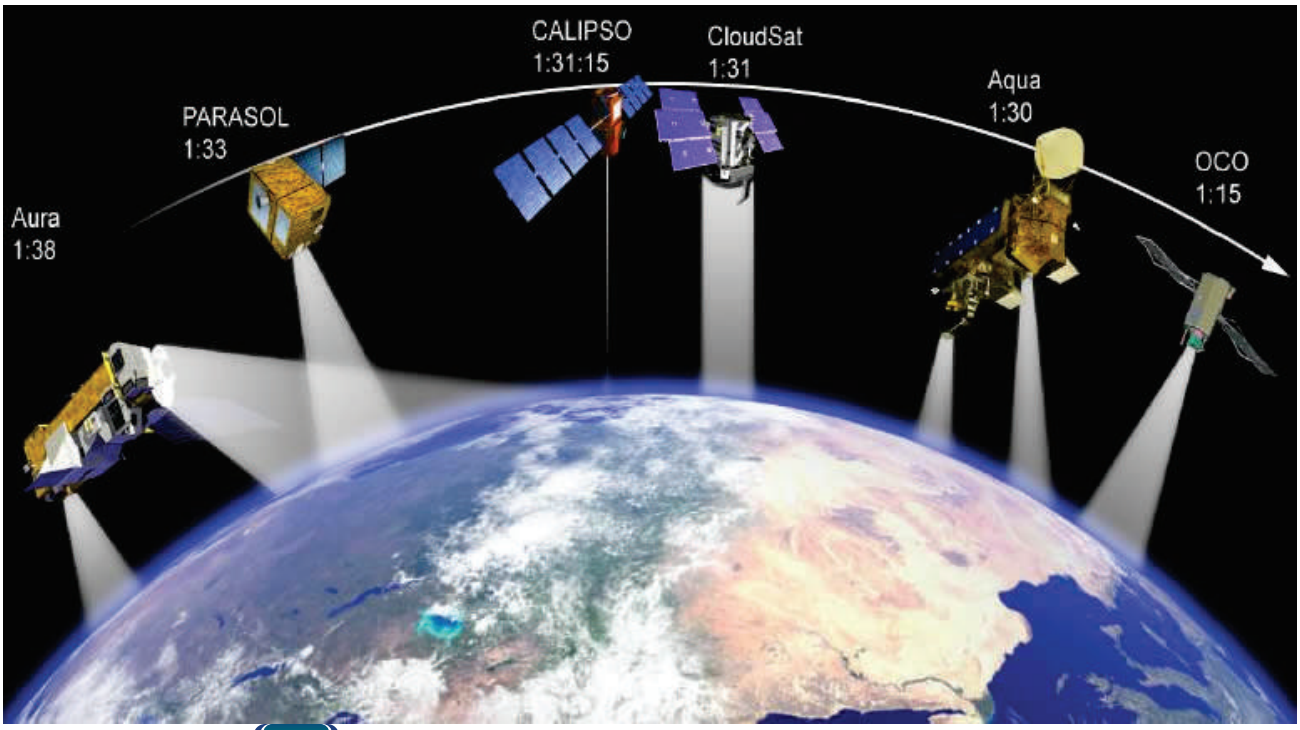
Strengthen the regulatory frame work which enables the production of safe and quality biotechnology products. Zimbabwe should be at par with all other countries in terms of biotechnology regulation.

STRATEGIES

i. To increase registration of facilities.
ii. To take on board new and emerging technologies through continual review of the NBA Act and Policy.
iii. To expedite permit issuance through an online application system.
iv. To improve GMO surveillance programmes by using GIS and remote sensing

OUTCOMES

Improved compliance to biotechnology regulations



GOAL 4:

TO INSTITUTE GOOD CORPORATE GOVERNANCE

NATIONAL BIOTECHNOLOGY AUTHORITY

7.4 Strategic Objectives

Good corporate governance is a pre-requisite for the development of the nation as it provides a strong foundation for a modern society that is free of corruption and that efficiently utilises its resources in a transparent manner. Increased checks and balances will lead to accountability at all levels of the organisation. To improve the corporate governance and visibility of the National Biotechnology Authority, this strategy will improve the functions of the Board, the Audit and Corporate Legal Affairs Department. The Public Relations Department will also be established to ensure the NBA has a good image and increased visibility.

OBJECTIVE 1.

To restructure and reorient the National Biotechnology Authority so that it is g
eared to produce or cause commercial biotechnology goods and services.

STRATEGIES

i. Restructure the NBA by adding new departments to increase separation of powers and introduce improved control systems.
ii. Corporate Affairs and Legal Services
iii. 3 Directors (Technical, Business, F&A)
iv. Audit
v. Procurement Management Unit
vi. Public Relations and Marketing
vii. Increase the functionality of the NBA Board by increased communication between management and the Board. Regular Board meetings

OUTCOMES

" Improved corporate governance, effectiveness, efficiency

PROGRAMMES AND PROJECTS

8. PROGRAMMES AND PROJECTS

The Strategic Plan comprises of 4 programmes and 8 sub-programmes

Number	Programme	Sub Programme	Department
1	Governance and Administration	Corporate Services	Board, CEO's Office, Legal, Internal Audit, Public Relations, Information Technology.
		Finance and Administration	Finance, Administration.
2	Biotechnology Regulatory Services	Registration and licensing services	Port Control and Inspectorate.
		Biotechnology compliance services	Port Control and Inspectorate.
3	Research and Development Innovation	Biotechnology Research and Development and Innovation	Research and Development and Innovation.
		Testing Services	
4	Biotechnology Business Development	Business Enterprise Development	Business Enterprise Development Department, Special Purpose Vehicles and Joint Venture, Research and Development and Innovation.
		Farm Unit	

8.1 Programme 1 Governance and Administration

The National Biotechnology Authority has a functional Board and a substantive Chief-Executive Officer. This middle-level management is already in place. The authority will strengthen the senior management level by the recruiting 2 additional Directors, namely, the Finance and Administration and The Technical Director. The Business Enterprise Director has already been recruited. The Legal Affairs and Internal Audit are already in place. The Procurement Management Unit (PMU) and the Public Relations and Marketing (PR) are constituted and functional.

8.2 Programme 2 Biotechnology Regulatory Services

The Ports Control and Inspectorate is already established with 9 port offices out of 21 ports of entry in Zimbabwe. It is also supported by 3 Statutory Instrument namely SI157, SI 159 and SI 160. During the current cycle of the strategic plan, 10 new port offices will be established to achieve 100% coverage. The Inspectorate will be given capacity to be able to conduct inspections and surveillance of biotechnology facilities and register new products. The regulatory departments will also participate in the Ease of Doing Business activities so as to contribute to the improvement of the ease of doing business ranking of Zimbabwe. New statutory instruments for the regulation of medical biologics, Genetically Modified Organisms (GMO) surveillance and General Release of GMOs will be enacted to improve the regulatory framework. The National Biotechnology Authority will also facilitate the conduction of research and trials of GM crops (Cotton, Soybeans, Maize, Sweet potato) together with those companies that are interested.

The target for this strategy is to undertake at least 3 trials during the period 2021 to 2025.

8.3 Programme 3- Research and Development and Innovation

The Research and Development and Innovation Programme is the highest priority programme for this strategy, hence it will be carrying out flagship national priority projects that produce a pipeline of prototypes for tangible biotechnology goods and services. This Department will also provide biotechnology support services to the stakeholders in the biotechnology research and innovation ecosystem. This will mean that the facilities like the Genomics, Research and Development Laboratories will be equipped with state-of the art equipment in biotechnology. Human capital development will be conducted to improve skills level by training staff in various biotechnology disciplines namely, Molecular biology and Genetic Engineering, Biotechnology Product Development and Process Engineering among others. The training will emphasise practical skills and on-the job-training as part of the education system.

The National Biotechnology Authority will undertake research on new products and services to ensure import substitution for Biopharmaceutical (vaccines, antibiotics, insulin, other hormones), Agricultural Biotechnology Products (Biofertilizers and Biopesticides). The research will also tape on the indigenous knowledge systems of our heritage in the production of complementary and alternative medicines, modernising traditional food production, heritage-based industrial biotechnology applications. This programme will undertake research on the bioeconomy and the production of a green-economy for Zimbabwe. The NBA will ensure that environmentally friendly products and technologies are applied to achieve a green-economy by 2030.

The NBA will establish a functional Genomics Centre to provide an advanced research and development infrastructure for biotechnology research in the country. Part of the Genomics Centre has already been established through the National BioBank and the Sequencing Centre with state of the art equipment. More advanced equipment will be procured during the course of the implantation of this strategy. The research and development and innovation programmes will promote collaboration and cooperation to conduct effective and impactful research by forming synergies with higher and tertiary institutions, public and private research institutions, individuals and communities.

8.4 Programme 4 Biotechnology Business Development

The Biotechnology Business Enterprise Development programme is already in the process of delivering the biotechnology industry to the nation by converting research results, prototypes and processes into business. In the last strategic period the NBA had already initiated the commercialisation of biotechnology goods and services as detailed in the Background section. In this current strategic period, the NBA will strengthen the existing commercial projects and continue to form additional special purpose vehicles to commercialise biotechnology and form businesses thereby establishing industries and facilities that produce goods and services throughout the country. Strides have already been made and the will be strengthened during the implementation of this strategy. The NBA is already operating several business partnerships, as follows:

	Business Area	Name of Enterprise/Facility	Partner
1	Mapfura/Marula Value Addition	Mwenezi Mapfura/Marula Value Addition Factory	-
2	Retail of NBA Biotechnology Products	National Biotech Shop	-
3	Sweet Potato and Irish Potato	Tissue Culture and Virus Elimination	Ministry of Lands, Agriculture, Fisheries, Water and Rural Development, Horticultural Research Institute, Near Marondera
4	Irish Potato Value Chain	Associated Tissue Culture Company	Jinxisen Zimbabwe. Chinese Company
5	National BioBank and Genomic Services	Genomics Centre	University of Zimbabwe African Institute of Biomedical Science and Technology

9. TERMS OF REFERENCE

1. Constitution of Zimbabwe, Amendment (No.20) Act 2013.
2. The National Biotechnology Authority Act [Chap 14.31] No.3 of 2006.
3. The National Biotechnology Policy of 2005.
4. National Development Strategy 1 (NDS1) 2021-2025.
5. The 2nd Science and Technology Innovation Policy of 2012.
6. The Cartagena Protocol on Biosafety to the Convention on Biological Diversity of 2003.
7. The Public Finance Management Act [Chap.22:19] of 2009.
8. National Biotechnology Authority (Food, Feed, Food and Feed Additives and Seed) (Import, Export and Transit) Regulations, Statutory Instrument 157 of 2018.
9. National Biotechnology Authority (Genetically Modified Food and Feed) (Labelling) Regulations, Statutory Instrument 159 of 2018.
10. National Biotechnology Authority (Agricultural Biotechnology Products) Regulations, Statutory Instrument 160 of 2018.
11. Any other relevant statutes.

10. MANDATE OF THE NATIONAL BIOTECHNOLOGY AUTHORITY

The general function of the Authority shall be to advise the Minister on all aspects concerning the development, production, use, application and release of products of biotechnology, and ensure that all activities with regard to such development, production, use, application and release are performed in accordance with the National Biotechnology Authority Act [Chap. 14:31].

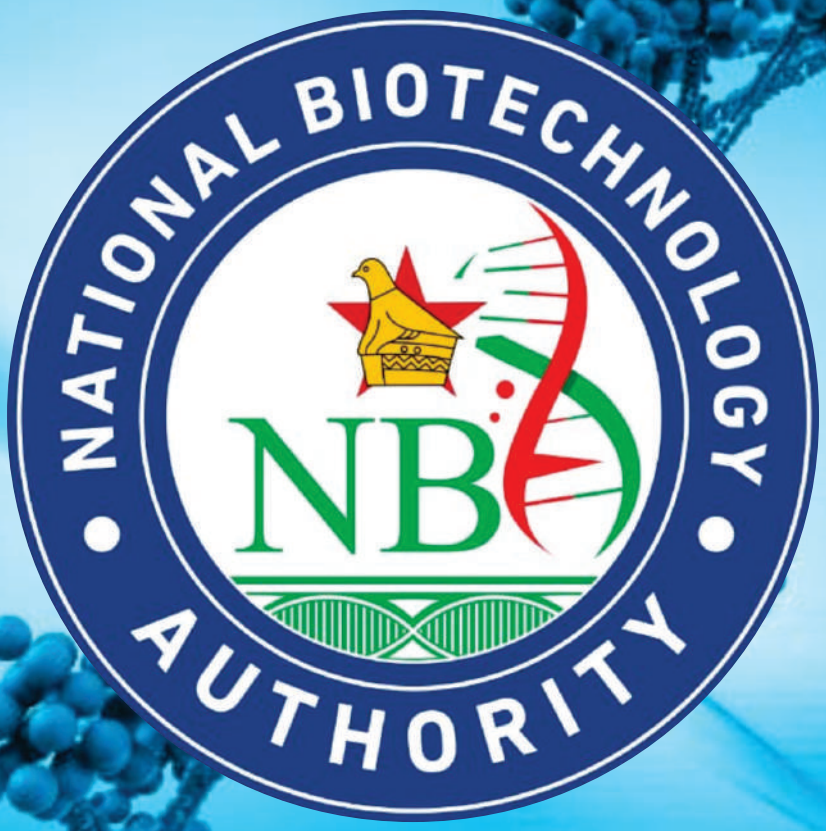
11. KEY FUNCTIONS OF THE NBA

The Authority shall have the following specific functions-

a) to evolve a long-term policy for safety in biotechnology in Zimbabwe;
b) to actively promote and spearhead biotechnology research, development and commercialisation in Zimbabwe;
c) conduct targeted research in areas of national priority in the following fields: agriculture, health, environment, energy and mining
d) to spearhead genome analysis, research and development, and services to the applied life sciences community;
e) to review project proposals concerning high risk category organisms and controlled experimental trials involving them, and make decisions on whether to approve, prohibit or restrict such trials;
f) to review reports of all ongoing approved projects and controlled experimental trials involving high risk category organisms;
g) to approve deliberate releases of properly evaluated products of biotechnology;
h) to approve the large-scale use of products of biotechnology in industrial production and application;
i) to assist in the clearance of applications for setting up industries based on the use of products of biotechnology;
j) to monitor and recommend best practices for the discharge of biological waste from laboratories, hospitals, industry, into the environment;
k) to ensure that biotechnology guidelines and standards are adhered to generally and in the execution of projects or controlled experimental trials involving high risk category organisms;
l) to conduct training programmes for biosafety officers, biotechnology scientists and industrialists;
m) to identify, prioritise and propose areas for standardisation of products of biotechnology to the Standards Association of Zimbabwe, the Medicines Control Authority of Zimbabwe, the Environmental Management Agency and other relevant bodies;
n) to approve the safety aspects of the import, export, manufacture, processing and selling of any products of biotechnology, including substances, foodstuffs and additives containing products of biotechnology;
o) to advise the customs authorities on the import and export of biologically active material and products of biotechnology;
p) to collect and disseminate information pertaining to safety procedures associated with work on or research into modern biotechnology;
q) to establish contact and maintain liaison with bodies in other countries and international organisations concerned with monitoring work on or research into biotechnology;
r) to perform such other functions as provided for in this Act.

For the better exercise of its functions, the Authority shall have the power, subject to this Act, to do or cause to be done, either by itself or through its agents, all or any of the things specified in the Schedule either absolutely or conditionally, and either solely or jointly with others.

APPENDICES



THE STRUCTURE

12. ORGANISATION OF THE NATIONAL BIOTECHNOLOGY AUTHORITY

To effectively implement the 2021 to 2025 strategic plan the current NBA organisational structure will be changed by creating 3 additional departments and introducing a layer of directors in the organogram. The new strategic plan will be supported by a new organisational structure shown in Figure 1. The structure depicted in Figure 1 is already being implemented and will achieve the intended objective of having clear departments and also align the NBA with the strategic plan for 2021-2025. Although Department have different Functions that are integrated in well-defined programmes articulated in the Appendices. All funding will be handles through a programme based budgeting system.

There is however an integral relationship between the Research & Development and the Business Enterprise Development departments since research output should translate into commercialisation of products and services under the Business Development Department. The main focus of the Business Development Department is the Genomic Centre. It is acknowledged that the NBA Research & Development Department is not the only source of business since NBA can form partner with other organisation to commercialise products and services. In this strategy the NBA will partner with Universities, Innovation and Incubation Hubs, Research Institutions, other Regulatory Agencies, Local Authorities, communities, individuals and the Private Sector to create and participate in a vibrant innovation ecosystem for Zimbabwe. Several models for partnerships will be used including but not limited to; Special Purpose Vehicles, Joint Venture companies in which NBA has shareholding and direct investment. It is also noted that before a product or service is commercialised there might be need to conduct some proof of concept or verification research hence the need for a strong Research and Development Department. As such most activities will appear in both the Business Enterprise Development and Research and Development departments at different stages. The NBA will pursue the Heritage-Based Education 5.0 as promoted by the parent Ministry of Higher and Tertiary Education, Innovation Science and Technology Development.

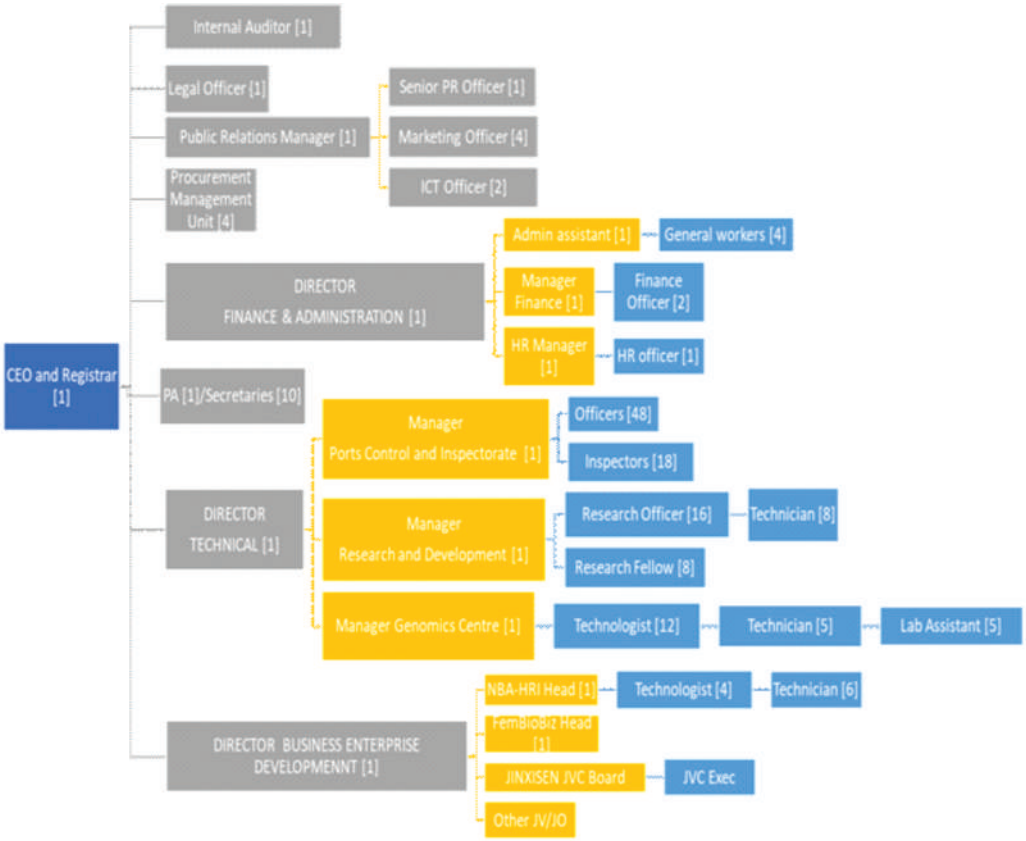


Figure 2. The new organisational structure of NBA aligned with the new strategic plan.

The organogram is made up of a workforce of 175 employees as indicated in [ ] in the organisational chart Figure 2. The various positions will be filled up over a period of five years such that in 2023 all the positions are occupied. The total number of employees in each section is summarised below.

Department	Programme	Number of employees
CEO's Office		16
Directors		3
Managers		6
Finance &Administration		8
Regulatory Affairs	Ports Control	48
	Inspectorate	18
	Research and Development	42
	Genomics Centre	22
Business Development	Business Units	11
TOTAL		**175**

12.1 CHIEF EXECUTIVE OFFICER'S OFFICE HAS THE FOLLOWING UNITS:

12.1.1 Corporate Affairs and Legal Services

- Corporate governance.
- Policy/legislation review and development.
- Drafting, reviewing, recommending and processing collaborative agreements.
- Ensuring compliance to obligations under treaties and conventions.
- Developing and reviewing guidelines and Standard Operating Procedures.
- Handling and processing appeals including litigation issues.

Fairness, Justice, Transparency and Compliance

12.1.2 Internal Audit

- Reporting directly to the Chairperson of the Audit Committee of the Board
- Reviewing of internal control systems.
- Conducting internal audits.
- Risk management.

12.1.3 Public Relations and Marketing

- Formulation and execution of the communication strategy.
- Interfacing with stakeholders on behalf of the Authority.
- Generation of organisational progress and annual reports.
- Marketing the Authority's services and products.
- Conducting public awareness, training and education on biotechnology and biosafety.
- Developing promotional materials.

12.1.4 Information, Communication and Technology (ICT)

- The Information, Communication and Communication department
- Develop ICT policies and strategies.
- Provide and support ICT infrastructure and information systems.
- Systems design and development.
- Design and production of promotional and other organizational materials.
- Design and maintenance of the website.
- Maintenance of ICT assets.

12.1.5 Procurement Management Unit

- An independent procurement unit that conducts all the purchasing processes for the NBA.
- Disposal of assets.
- Adherence to the provisions of Procurement Regulatory Authority of Zimbabwe (PRAZ)

12.2 TECHNICAL DEPARTMENTS:

12.2.1 Research, Development and Innovation

- Conducting research in crop improvement, medical, pharmaceutical, environmental and animal biotechnology.
- Conducting research including Biosafety research
- Setting up and running the National Biosafety Reference Laboratory.
- Registration of products with relevant authorities
- Administering the Biotechnology Fund.
- Responding to calls for grants and publications.

Plant Tissue Culture-applied agricultural biotechnology for elite planting materials and higher yields.

Advanced Biotechnology Fermentation Processes-Production of high value biopharmaceuticals and biomaterials

12.2.2 Genomics Centre

The initial focus of Genomic Centre shall be to:-

- Advance scientific and technological competencies in the design, development and application of genomics technologies including:
- Genome and gene sequencing
- Gene annotation, editing and expression
- Forensics and diagnostics and
- Bioinformatics
- Foster genomics research and service provision in life sciences including:
- Genetic purity test for seeds, crops and animals
- Developing digital Barcodes for regulatory purposes

- Provision of services to third parties e.g. determining genetic status of foods, allergenicity tests, paternity tests, Marker assisted breeding to increase the quality of the national herd, developing rapid test kits.

- Facilitate training, education and human capital development of:
- Graduate students and technicians
- Researchers
- Extension personnel
- Health practitioners

- Facilitate research and innovation
- Tissue culture for root and tubers
- Potentiation of yields of target crops with specific focus on food crops (maize, sweet/Irish potato) and cash crops (cotton, soya beans),
- Bioremediation of contaminated sites
- Development of human and animal drugs, medicines and vaccines

- Promote industrial and commercial application of genomic technologies.
- Convert research results to goods and services on a commercial scale
- New and improved products that can be patented
- Adopting proven biotechnologies for commercial and industrial purposes

The success of the initial phase shall determine the pace at which the Centre will broaden the scope and extent of the developments in the biotechnology industry.

State-of-art equipment-Next Generation Sequencer-Delivering biotechnology services

12.2.3 Inspectorate and Ports Control

12.2.3.1 Inspectorate

- Conducting inspections of biotech facilities, processes and products.
- Reviewing of applications for trial and commercial release of biotechnology products.
- Monitoring and surveillance of biotechnology applications, processes and products.

12.2.3.2 Ports Control

- Monitoring biotechnology imports and exports at ports.
- Pre- and post-shipment inspections of imports and exports of biotechnology products.
- Rapid response to possible cases of bioterrorism breaches.
- Issuance of permits and certificates.
- Establishment of sub-offices at all ports of entry

12.3 BUSINESS ENTERPRISE DEVELOPMENT DEPARTMENT

The Business Enterprise Development will focus on formulating business strategies and projects out of biotechnology research outcomes including:

12.3.1 Biotechnology Enterprises

- Collaborating with biotechnology entrepreneurs in translating research results into products and services. Commercialisation of internally developed or adopted biotechnologies
- Establish and run strategic business units for the purposes of fostering further research and generating revenue.

12.3.2 Farm unit

The farm unit will be for both research and commercial farm. It is intended to achieve the following:

- Research Trials
- On crops (e.g. on new seed varieties, cotton and soya bean)
- On animals (e.g. Cattle breeds)
- On new foods/feed formulations
- On testing new drugs and vaccines

Heritage-based Biotechnology-Mapfura wine-a product of the National Biotechnology Authority

Producing Biotechnology goods: Mapfura oil- a product of the National Biotechnology Authority

Superior agricultural production-Biotechnology for food security and higher productivity

Creating and Building Biotechnology Industry for Zimbabwe: The newly constructed Mapfura/Marula Value-Addition Factory in Rutenga, Mwenezi District in Masvingo.

Biotechnology for import substitution-delivering a vibrant bio-economy

12.4 FINANCE AND ADMINISTRATION DEPARTMENT

The Finance and Administration Department has the following units:

12.4.1 Finance

- Resource mobilisation strategies:
- Generate income from operations (levies,fees) and commercialisation of our research outputs (target $1 million from regulation and $50 000 from Commercialisation of research outputs)
- Actively seek grants from relevant potential partners (annual target of $500 000)
- Austerity measures to contain expenditures
- Budget management
- Prepare revised forecast with each quarterly financial reports
- Strategy and Budget to be ready by beginning of September
- Financial reporting

- monthly management accounts by 7thof the following month
- Quarterly accounts within 14 days after quarter end.
- Half yearly accounts by end of July.
- Audited annual financial statements,3 months after year end
- Debtors and creditors management.
- Implementation of an effective working capital management

12.4.2 Human Resources

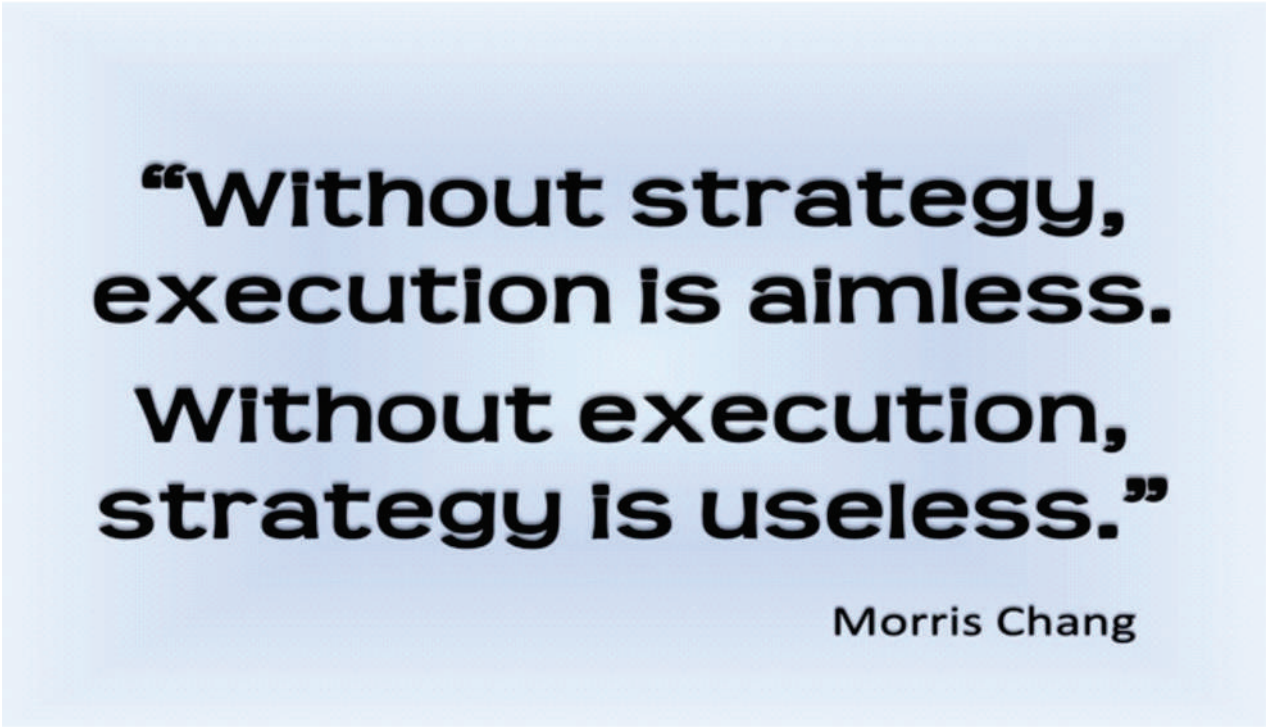
- Development and implementation of Human Resources policies.
- Staff recruitment and retention
- Re-grading,promotion and transfers
- Staff training and development.
- Managing the staff appraisal system.
- Ensuring health and safety

Our Human Capital-Section of the NBA Staff at the Head Quarters

Planning Together: Strategic Plan Review and Alignment Workshop
19-21 May 2021 at Kadoma Rainbow Hotel

LIST OF PARTICIPANTS

Prof. F. Mtambanengwe (NBA Board Chair).
Mr. E. Moyo (Vice NBA Board Chair).
Prof. M. Masocha (NBA Board Member).
Dr. F. Chatiza (NBA Board Member).
Mr. Z. Dhlamini (NBA Board Member).
Dr. D.T. Savadye (CEO and Registrar).
Dr. M. Nyoni (Manager Research and Development)
Mr. M. Mangami (Finance and Administration Manager).
Miss A. R. Takombwa (Manager Ports Control and Inspectorate).
Mrs. M. Maume (Manager Public Awareness and ICT).
Mr. E. Mupanehari (Manager Business Enterprise Development Department).
Ms. N. Mnkandla (Manager Human Resources Manager).
Ms. I. Cosma (Legal Advisor)
Mr. C. Mutyasira (Internal Auditor)
Minister of Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development
Officials of Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development
NBA Stakeholders and Clients


“Without strategy, execution is aimless.
Without execution, strategy is useless.”
Morris Chang

PROFILE OF THE AGENCY

SECTION A: Profile of the Ministry/Department /Agency (MDA)

i) National Level Contribution:

a. National Vision: Towards a Prosperous and Empowered Upper, Middle Income Society by 2030.

b. National Priorities the Ministry/ Agency is contributing to:

	Description of National Priority Area
NPA 1	Human Capital Development
NPA 2	Food and Nutrition Security
NPA 3	Health and Wellbeing
NPA 4	Environment

a. National Key Result Areas the Ministry/Agency is contributing to:

	Description of National Key Result Area
NKRA 1	Innovation and knowledge driven economy
NKRA 2	Food security
NKRA 3	Nutrition security
NKRA 4	Sustainable natural resource utilisation
NKRA 5	Public health and wellbeing

b. National Outcomes the Ministry/Agency is contributing to:

	Description of National Outcome
NOUC 1	Improved access and utilisation of advanced knowledge and technologies
NOUC 2	Increased innovation for industrialisation
NOUC 3	Improved food security
NOUC 4	Improved community livelihoods
NOUC 5	Improved quality of life

MDA refers to an institution with a separate budget vote

i) Sectoral Level Contribution:

Sector name: Education and Training

a. Sectoral Key Results Areas

	Descriptionof Sector Key Result Area
SKRA 1	Innovation and knowledge driven economy
SKRA 2	Public health and wellbeing
SKRA 3	Food security
SKRA 4	Sustainable natural resource utilisation
SKRA 5	

a. **Sectoral Outcomes**

	Description of Sectoral Outcome Description
SOUC 1	Improved innovation ecosystems
SOUC 2	Improved research and development
SOUC 3	Improved access to availability of essential medicines
SOUC 4	
SOUC 5	

9. **State Enterprises and Parastatals, Statutory Bodies and Grant Aided Institutions under the MDA and their functions.**

KRA Ref	KRA Description	Weight (%)	SKRA REF	NKRA REF	NPA REF
1	Research development and innovation	30	1	1	1
2	Business enterprise development	25	1	1	1, 2,3,4
3	Governance and visibility of NBA	15	1,2,3,4	1,2,3,4,5	1,2,3,4
4	Regulation of biotechnology	10	2	5	3
5	Employee resourcing	15	1,2,3,4	1,2,3,4,5	1,2,3,4
6	Sustainable use of available resources	5	1,2,3,4	1,2,3,4,5	1,2,3,4

14. Environmental Scan

10 a. PESTLEG Analysis

Political	· Stable political environment. · Improved international relations. · Political support. · Clear vision. · Policy shifts. · Sanctions. · Overlapping of roles for biotechnology regulation.
Economical	· Availability of foreign currency. · High interest rates. · Improved economic performance. · Low disposable income. · Exchange rate fluctuations. · Three tier pricing system. · Delayed operationalization of the Biotech Fund.
Social	· Limited understanding of biotechnology by the public. · Corrupt tendencies. · Inferiority complex to indigenous products. · Global pandemics and endemics. · Natural disasters. · Brain drain and gain.
Technological	· Digital systems. · Inadequate infrastructure. · High data costs. · Inadequate information systems. · High cost of technology transfer. · New and emerging technologies.
Legal	· Clear legislation. · Outdated legislation.
Ecological	· Climate change e.g. increase in drought occurrences.
Governance	· Substantive Board and Chief Executive Officer and Registrar. · Recruitment of Internal Auditor and Legal Advisor. · Clear framework for corporate governance. · Ease of Doing Business.

Strengths	Weaknesses
1. NBA Act and statutory instruments currently in place. 2. Permanent premises for the head office. 3. Network of port offices. 4. Substantive Board. 5. Skilled human capital. 6. Developed ICT systems.	1. Outdated legal framework. 2. Limited resources and infrastructure. 3. Low remuneration to retain skilled human capital.
Opportunities	**Threats**
1. Political support. 2. To grow through commercialization and industrialization of biotechnology. 3. Growth through research and development. 4. Increase sphere of influence as a regulatory body. 5. Existence of collaboration opportunities. 6. Harmonization of biotech research in Zimbabwe to reduce duplication of efforts. 7. Promote synergies between NBA and other entities that carry out biotech research. 8. Existence of biotechnology products for adoption and application. 9. Biotech Fund to translate research results into products and services through supporting startups.	1. Interagency overlaps in roles. 2. Availability of foreign currency 3. High interest rates

15. MDA Programmes and Outcomes:

Programme Ref	Programme Name	Programme Outcome/s	Weight	Responsible Department	Contributing MDAs / Other Partners	Types of Contribution	Sector Outcome Ref	National Outcome Ref	SDG Ref
	Policy and Administration	Enhanced organisational performance	20	a. Finance b. HR c. Procurement Unit d. ICT e. PR and Marketing f. Audit g. Corporate Affairs and Legal Services h. Administration	MHTEISTD PRAZ Auditor General Attorney General Ministry of Agriculture NHPC	Policy direction and guidance Financial resources External audit services Agricultural policy IT infrastructure			
	Research Development and Innovation	1. Increased prototypes capable of producing new products and services. 2. Increased uptake of clean technology products.		Research, Development and Innovation Genomics Centre	MHTEISTD AiBST Tobacco Research Board University of Zimbabwe	Policy guidance Resources Infrastructure Expertise	1	1	9
	Business Enterprise	1. Increased revenue generation	25	Business Enterprise	MHTEITD	Infrastructure Land Expertise	1	1	9
	Biotechnology Regulatory Services	1. Improved compliance to regulations 2.Improved policies on biotechnology and biosafety	25	Ports Control and Inspectorate	MHTEISTD Relevant Government Ministries and Departments	Effective regulation of biotechnology research, development andapplication. Harmonization of regulations	2	5	16

16. Policies Applicable for the MDA:

	External Policy	Programme Ref	Internal Policy	Programme Ref
1.	National Biotechnology Authority Act [*Chap.14:31*] of 2006	1,2,3,4	National Biotechnology Policy of 2005	
2.	Labour Act [Chap 28.01] (as amended 01-02-2006)	1	Guidelines and Procedure Documents	1,2,3,4
3.	Second Science, Technology and Innovation Policy of 2012	2,3,4	Human Resources Policies	1
4.	National Environment Policy of 2003	4	ICT Policy	1,2,3,4
5.	The Environmental Management Act [Chap. 20:27] of 2002.	1,2,3,4	Finance and Admin Policies	1,2,3,4
6.	The Public Health Act [Chap. 19] of 1924.	1,2,3,4	National Biotechnology Authority (Food, Feed, Food and Feed Additives and Seed) (Import, Export and Transit) Regulations, Statutory Instrument 157 of 2018.	1,2,3,4
7.	Animal Health Act [Chap. 19:01] of 1960.	1,2,3,4	National Biotechnology Authority (Genetically Modified Food and Feed) (Labelling) Regulations, Statutory Instrument 159 of 2018.	1,2,3,4
8.	The Prevention of Cruelty to Animals Act [Chap. 19:09] of 1960	1,2,3,4	National Biotechnology Authority (Agricultural Biotechnology Products) Regulations, 2018, Statutory Instrument 160 of 2018.	1,2,3,4

	External Policy	Programme Ref	Internal Policy	Programme Ref
9	The Food and Nutrition Security Policy of 2013.	1,2,3,4	National Biotechnology Policy of 2005	1,2,3,4
10	National Development Strategy 1	1,2,3,4		
11	The Public Finance Management Act [Chap. 22:19] of 2009.	1,2,3,4		
12	Health Professions Act [Chap. 27:19] of 2000.	1,2,3,4		
13	Medicine and Allied Substances Control Act [Chap. 15:03]	1,2,3,4		
14	Food and Food Standards Act [Chap 15:04] of 1995	1,2,3,4		
15	State Enterprises Restructuring Agency	1,2,3,4		
16	Public Procurement and Disposal of Public Assets Act [Chap. 22:23]	1,2,3,4		
17	Joint Venture Act [Chap. 22:22]	1,2,3,4		
18	Zimbabwe National Industrialization Policy -2018 -2020	1,2,3,4		
	INTERNATIONAL POLICIES			
19	Cartagena Protocol on Biosafety to the Convention on Biological Diversity of 2003	1,2,3,4		
20	World Trade Organisation – Sanitary and Phytosanitary Agreement of 1995	1,2,3,4		
21	Sustainable Development Goals of 2015	1,2,3,4		
22	African Union, Agenda 2063	1,2,3,4		

13 CLIENT NEEDS/PROBLEMS ANALYSIS:

Direct Clients	Needs/Problems	Extent
1. Minister	Needs 1. Advice on biotechnology and biosafety 2. Accountability 3. Products and services	1. 30% 2. 20% 3. 50%
2. Parliamentary Portfolio Committee on Higher and Tertiary, Education, Innovation, Science and Technology Development	Needs 1. Advice on biotechnology and biosafety 2. Accountability 3. Products and services Problems	1. 30% 2. 20% 3. 50%
4. Consumers	**Needs:** 1. Food and nutrition security 2. Environmentally friendly products. 3. Safety assurance on biotechnology products **Problems:** 1. The market is full of products with chemical residues. 2. Limited availability of information on safety of biotechnology products.	1. 30% 2. 50% 3. 30%
5. Researchers	**Needs:** 1. Infrastructure 2. Capacity Building 3. Funding 4. Registration 5. Networking 6. Accreditation 7. IPR Protection **Problems** 1. High cost of registration Limited research funding	1. 50% 2. 50% 3. 85% 4. 50% 5. 50% 6. 90% 7. 80%
6. Industrialists	**Needs:** 1. Review of the GM policies. 2. Partnerships and Joint Ventures. 3. Certification. 4. Variety approval/release.	1. 80% 2. 50% 3. 50% 4. 80% 5. 50% 6. 50%

7. Farmers	**Needs:** 1. Improved seeds and breeds. 2. High quality inputs i.e. fertilizers and pesticides. 3. Market. 4. Capacity development 5. Protection from uncertified biotechnology products **Problems** 1. Few communication platforms for biotechnology and bio	1. 50% 2. 50% 3. 80% 4. 50% 5. 50%
8. Institutions of Higher Learning	Needs: 1. Infrastructure 2. Curriculum review 3. Laboratory Certification 4. Internships and job opportunities 5. Human capital development **Problems:** 1. Limited resources for research 2. Few organisations offering biotechnology internship places	1. 70% 2. 50% 3. 80% 4. 50% 5. 50%
9 Importers	**Needs**: 1. Permits 2. Registration 3. Decentralisation of the permit office. Problems: 1. Lengthy turnaround time. 2. Sometimes technical glitches are experienced during the online application process.	1. 20% 2. 20% 3. 50%
10 Exporters	**Needs:** 1. Permits 2. Registration 3. GMO testing 4. GMO declarations **Problems:** 1. Sometimes permits are not issued within the stipulated time of 24hrs. 2. Sometimes technical glitches are experienced during the online application process.	1. 20% 2. 20% 3. 50% 4. 20%
11. Suppliers	**Needs:** 1. Offering services to NBA	1. 40% 2. 30%

12. Suppliers	**Needs:** 1. Offering services to NBA 2. Payment of services 3. Registration **Problems:** 1. High competition in securing tenders. 2. Late payments.	1. 40% 2. 30% 3. 20%
13. NBA Employees	**Needs:** 1. Remuneration 2. Human capital development 3. Job security 4. Conduciveworking environment **Problems:** 1. Low remuneration 2. Limited internal capacity building 3. Limited staff accommodation	1. 40% 2. 50% 3. 80% 4. 40%

23. STAKEHOLDERS ANALYSIS

Direct Stakeholders	Demands/ Expectations	Extent (Magnitude/seriousness)
1. Ministry of Higher andTertiary Education, Innovation, Science and Technology Development	1. Accountability of functions and services offered to fulfil mandate 2. Accountability of allocated resources (Public funds hence need for Audit Reports) 3. Advice on biotechnology and biosafety matters	1. 5% 2. 0% 3. 0%
2. Other Government (Ministries e.g. Ministry of Health and Child Care; Ministry of Lands, Agriculture and Rural Resettlement; Ministry of Environment, Tourism and Hospitality Industry; Ministry of Finance and Economic Planning	1. Complementarity of functions to other Ministries and Parastatals 2. Accountability of allocated resources 3.Advice on biotechnology and biosafety matters e.g. adoption of biotech in industry; technical information on risks and benefits to agriculture production and animal health, biodiversity conservation, risks and benefits to food safety and public health.	1. 10% 2. 0% 3. 3%
3. Parliament	1. Information on biotechnology and biosafety 2. Advice on biotechnology and biosafety matters	1. 40% 2. 40%
4. Partners	1. Transparency 2. Accountability 3. NBA expertise	1. 0% 2. 0% 3. 25%
5. Auditor General	1. Meeting statutory deadlines. 2. Compliance to standards.	1. 5% 2. 5%

24. STRATEGIES, ASSUMPTIONS, RISKS AND MITIGATIONS

Strategies: Game plan to achieve the targets

Assumptions: Positive factors that can assist in the achievement of the targets

Risks: Factors which militate against the achievement of results

Mitigation: Interventions to reduce the gravity or intensity of the damage

Period	Strategies	Assumptions	Risks	
Programme 1: GOVERNANCE AND ADMINISTRATION				
Outcome: Improved corporate governance , effectiveness and efficiency				
Budget Year 2021	Restructure the NBA to increase efficiency and effectiveness by filling vacant posts on the organogram.	The new organisati onal structure functions more effectively than the previous structure Resources to implement the new organisational structure are available	Failure to attract competent qualified staff	Offer competitive remuneration
2-3 years	To increase efficiency and effectiveness by filling vacant posts on the organogram.	Resources to implement the new organisational structure are available	Failure to attract competent qualified staff	Offer competitive remuneration
	Engage strategic local and international partners for staff training and development	Existence of partners interested in offering training in biotechnology research, development and innovation.	Unfavourable conditions linked to funding	Identify alternat ive low cost training opportunities
	To increase visibility by engaging in vigorous publicity campaigns	Availability of resources for the programmes	Polarization of public views	Educate young scientists
	To be self -sustainable as an organization through commercialization, cost recovery and efficient use of resources	Stable economic environment	Poof performance by commercial entities	Sound financial assessments done before investing resources
4-5 years	To increase efficiency and effectiveness by filling vacant posts on the organogram.	Resources to implement the new organisational structure are available	Failure to attract competent qualified staff	Offer competitive remuneration
	Engage strategic local a nd international partners for staff training and development	Existence of partners interested in offering training in biotechnology research, development and innovation.	Unfavourable conditions linked to funding	Identify alternative low cost training opportunities
Period	Strategies	Assumptions	Risks	Mitigations
Programme 2: BIOTECHNOLOGY REGULATORY SERVICES				
Outcome: Improved compliance to biotechnology regulations				
Budget Year 2021	To increase registration of facilities.	The statutory instrument on facility registration will be gazetted.	Ignorance of the registration regulations by institutions	Increase public awareness of NBA and its regulations.
	To establish mini laboratories at ports of entry	SADC and COMESA approves project requests	Delays in funding	Mobilize other resources to fund the project
	To improve online permit systems	Availability of expertise	Cyber attack	Use of advanced ICT security systems
	Improve skill and knowledge of officers	Successful implementation of skills learnt during training programmes	Loss of trained manpower through brain drain	Improve working conditions of the officers
2-3 years	To establish offices at new ports of entry	Availability of office and residential accommodation for officers	Inadequate financial resources	Increase resource mobilization
	Ensure adequate office and residential accommodation for established port offices	Houses will be built on NBA's residentia l stands and space for putting up mobile offices will be provided	Space to erect mobile offices may not be provided.	Active involvement in all port agency meetings to increase visibility

	Deploy more biosafety officers at ports of entry and inspectors for inspections	Resources for employment will be made available	Recruitment freezes may be enforced	Lobby Treasury to provide resources for expansion
	To ensure adequate regulation of new and emerging technologies through continual review of the NBA Act and Policy and gazetting of Statutory Instruments.	Support from the parent Ministry	Rapid advancements in new and emerging technologies	Have stakeholder awareness workshops to foster knowledge on new and emerging technologies
	To improve surveillance programmes	Vehicles for surveillance and equipment are readily available	Financial incapacitation to purchase vehicles and equipment	Mobilize and lobby enough resources for the work
	To conduct clients' training and consultative workshops	Active participation from clients	Highly polarized views of modern biotechnology	Ensure that all categories of clients are represented during consultative workshops to avoid biased conclusions
4-5 years	Intensify monitoring and surveillance activities	Availability of vehicles and equipment dedicated for the exercise	Resistance from clients	Increase awareness of NBA's regulatory functions
Period	Strategies	Assumptions	Risks	Mitigations
Programme 3: BIOTECHNOLOGY BUSINESS DEVELOPMENT				
Outcome: Increased Biotechnology Innovation, Research and Development in Zimbabwe.				
Budget Year 2021	1. Improve research capacity by acquiring advanced equipment and recruiting highly skilled manpower. 2. Identify key research priority areas and gaps then engage research partners. 3. Commercialize research results through establishing three biotech-led strategic business units • Establish the Mapfura value addition plant. • NBA-HRI-renewal • Establishment of Joint Venture Companies	Budgetary support from the Ministry Human expertise is secured Strong local and external linkages and synergies Acquisition of farmland with adequate water resources Availability of potential investors.	Inflation Exchange variations Sanctions Poor investor confidence. New entrants Over utilization of indigenous resources	Rapid utilisation of funds Extension of revenue streams through provision of new services and products Outsource services needing advanced equipment Establishment of plantations Extensive market research Developing new value added products. Investing in promotional and advertising materials Continued research
2-3 years	1. Diversify by undertaking research on new products and services 2. Identify and collaborate with research partners. 3. Increase research resources by collecting levies for the Biotech Fund. 4. Expand by establishing new strategic business units.	Favourable relations with national industries and international community. Availability of partners All projects are self-sustainable Availability of a market for the products	Lack of keenness of industries to support local research New entrants	Provision of a wide range, of quality, innovative products and services Extensive market research

	5. To increase the base revenue by creation of independent subsidiary companies			
4-5 years	1. Diversify by undertaking research on new products and services 2. Identify and collaborate with research partners. 3. To keep abreast with developments in technology by continuous capacity building programmes of staff members. 4. Increase the revenue base by identifying export markets.	Availability of land, laboratory infrastructure and equipment. Strong local external linkages and synergies Favourable relations with national industries and international community Demand for products on the international market	Brain drain Unpredictable treasury disbursements Lack of competitive advantage due to technological advancements	Extension of revenue streams through provision of new products and services Offer competitive remuneration Continual improvement through adoption of new technologies

1. Programme Performance Framework

16.a Outcome Performance Framework

Ref	Outcome Description	KPI:	Measurement Criterion (time;$; rate;etc)	Baseline		TARGETS									
						2021		2022		2023		2024		2025	
				Year	Value	T	ALV	T	ALV	T	ALV	T	ALV	T	ALV
		Key performance indicator													
	Improved corporate governance, effectiveness, efficiency	Corporate Governance unit ranking	%	2020	40%	100%	+/- 5%	100%	+/- 5%	100%	+/- 5%	100%	+/- 5%	100%	+/- 5%
	Improved compliance to biotechnology regulations	Compliance rate = Number of compliantenties/Number of enties monitored x 100	%	2020	95%	100%	+/-5	100%	+/-5	100%	+/-5	100%	+/-5	100%	+/-5
	Increased biotechnology innovation, research and development in Zimbabwe	Innovation rate = number of innovations /number of registered products *100	%	2020	0%	40%	+/-5	50%	+/-5	60%	+/-5	60%	+/-5	70%	+/-5

No. & Prog. Code	Outputs	5 year target	Baseline		Previous Year			Current Year			Targets					
					2021			2022			2023		2024		2025	
			Value	Year	T	A	AV	T		ALV	T	ALV	T	ALV	T	ALV
Programme 1: Governance and Administration																
OUC 1 Improved corporate governance, effectiveness, efficiency																
0P 1.1	Strategic Plan produced and approved	1	0	2020	1		0	0	0	0	0	0	0	0	1	0
0P 1.2	Audited reports produced	5	1	2020	1		0	1		0	1	0	1	0	1	0
0P 1.3	Internal audits conducted	50	5	2020	10		+/- 2	10		+/-2	10	+/- 2	10	+/- 2	10	+/- 2
0P 1.4	Board meetings held	20	4	2020	4		0	4		0	4	0	4	0	4	0
0P 1.5	Biotechnology Policies produced and approved	4	0	2020	0		0	1		0	1	0	1	0	1	0
0P 1.5	Annual general meeting held	5	0	2020	1		0	1		0	1	0	1	0	1	0
0P 1.6	Agreements signed	30	1	2020	10		+/- 2	5		+/- 2	5	+/-2	5	+/- 2	5	+/- 5
0P 1.7	Financial and management reports produced	80	16	2020	16		0	16		0	16	0	16	0	16	0
0P 1.8	Inventory and asset records produced	5	1	2020	1		0	1		1	1	0	1	0	1	0
0P 1.9	Skilled personnel recruited	88	25	2020	26		+/-2	26		+/-2	26	+/-2	5	+/-2	5	+/-2
0P 1.10	Staff development training workshops conducted	40	6	2020	8		+/-2	8		+/-2	8	+/-2	8	+/-2	8	+/-2
0P 1.11	Exhibitions and awareness programmes conducted	46	8	2020	6	+/- 2		10		+/- 2	10	+/- 2	10	+/- 2	10	+/- 2
0P 1.12	Goods and services procured		78%	2020	100%		+/- 5%	100%		+/- 5%	100%	+/- 5%	100%	+/- 5%	100%	+/- 5%
0P 1.13	Buildings maintained		1	2020	1		0	1		0	1	0	1	0	1	0
0P 1.14	Software upgraded		3	2020	5		+/-1	7		+/-1	7	+/-1	7	+/-1	7	+/-1
0P 1.15	Equipment and assets serviced		20	2020	30		+/-5	40		+/-5	50	+/-5	60	+/-5	70	+/-5
Programme 2: Biotechnology Regulatory Services																
OUC 2 Improved compliance to biotechnology regulations																

OP 2.1	Registered companies	3280	596	2020	620		+/-5	650		+/-5	660	+/-5	670	+/-5	680	+/-5
OP 2.2	Permits issued	227000	45236	2020	45300		+/-10	45350		+/-10	45400	+/-10	45450	+/-10	45500	+/-10
OP 2.3	Products and services registered	325	52	2020	55		+/-5	60		+/-5	65	+/-5	70	+/-5	75	+/-5
OP 2.4	Policies and programmes conducted	24	2	2020	2		+/-1	3		+/-1	4	+/-1	5	+/-1	6	+/-1
OP 2.5	Monitoring and surveillance conducted	900	168	2020	170		+/-5	175		+/-5	180	+/-5	185	+/-5	190	+/-5
OP 2.6	Biotechnology facilities audited	100	2	2020	10		+/-5	15		+/-5	20	+/-5	25	+/-5	30	+/-5
OUC 3 Biotechnology Business Development																
Increased biotechnology, innovation, research and development in Zimbabwe																
OP 3.1	New prototypes produced	50	3	2020	10		+/-2	10		+/-2	10	+/-2	10	+/-2	10	+/-2
OP 3.2	New products registered	25	0	2020	5		+/-1	5		+/-1	5	+/-1	5	+/-1	5	+/-1
OP 3.3	Patents and publications produced	23	1	2020	3		+/-1	5		+/-1	5	+/-1	5	+/-1	5	+/-1
OP 3.4	New business enterprises established and maintained	6	1	2020	2		+/-1	1		+/-1	1	+/-1	1	+/-1	1	+/-1
OP 3.5	Revenue generated from business enterprises		ZWL 70 255 US$850	2020	US$11 000		+/- 20%	US$25 000		+/-20%	US$75000	+/-20%	US$150 000	+/-20%	US$200 000	+/-20%
OP 3.6	Business enterprises supported		0	2020	0		0	5		+/-1	5	+/-1	5	+/-1	5	+/-1

T = Target A = Actual AV = Actual Variance ALV = Allowable Variance

18. Programme Budget

Programme	Column1	Programme Outputs	Budget Last Year	Budget Current Year	Budget Year 1	Budget Year 2	Budget Year 3	Budget Year 4	Budget Year 5
			2019	2020	2021	2022	2023	2024	2025
			ZWL	ZWL	ZWL	ZWL	ZWL	ZWL	ZWL
	Sub-Prog 1.	Strategic plan produced and approved	97,259	279,051.52	1,753,400.00	5,260,200.00	6,312,240.00	7,574,688.00	9,089,626.00
Programme 1	Corporate Services	Audited reports produced	48,629	139,525.76	876,700.00	2,630,100.00	3,156,120.00	3,787,344.00	4,544,813.00
Governance and Administration		Internal audits conducted	11,709,983	279,051.52	1,753,400.00	5,260,200.00	6,312,240.00	7,574,688.00	9,089,626.00
		Board meetings held	97,259	279,051.52	1,753,400.00	5,260,200.00	6,312,240.00	7,574,688.00	9,089,626.00
		Biotechnology polies produced and approved	48,629	139,525.76	876,700.00	2,630,100.00	3,156,120.00	3,787,344.00	4,544,813.00
		Annual general meetings held	38,904	111,620.60	701,360.00	2,104,080.00	2,524,896.00	3,029,875.00	3,635,850.00
		Agreements signed	24,315	69,762.86	438,350.00	1,315,050.00	1,578,060.00	1,893,672.00	2,272,406.00

	Finance and Administration	Inventory and asset records recruited	97,259	279,051.52	1,753,400.00	5,260,200.00	6,312,240.00	7,574,688.00	9,089,626.00
		Skilled personnel recruited	121,574	348,814.38	2,191,750.00	6,575,250.00	7,890,300.00	9,468,360.00	11,362,032.00
		Staff Development training workshops conducted	145,888	418,577.25	2,630,100.00	7,890,300.00	9,468,360.00	11,362,032.00	13,634,438.00
		Exhibitions and awareness programmes conducted	218,833	627,865.90	3,945,150.00	11,835,450.00	14,202,540.00	17,043,048.00	20,451,658.00
		NBA products and services sold	145,888	418,577.25	2,630,100.00	7,890,300.00	9,468,360.00	11,362,032.00	13,634,438.00
		Buildings maintained	72,944	209,288.62	1,315,050.00	3,945,150.00	4,734,180.00	5,681,016.00	6,817,219.00
		Software upgraded	97,259	279,051.52	1,753,400.00	5,260,200.00	6,312,240.00	7,574,688.00	9,089,626.00
		Equipment and assets serviced	97,259	279,051.52	1,753,400.00	5,260,200.00	6,312,240.00	7,574,688.00	9,089,626.00
Total Programme Budget			**284,235**	**815,515.11**	**26,564,010**	**26,564,010**	**26,564,010**	**26,564,010**	**26,564,010**
Programme 2	**Sub-Prog 1.**	**Registered companies**	121,574	348,814.38	2,191,750.00	6,575,250.00	7,890,300.00	9,468,360.00	11,362,032.00
Biotechnology Regulatory Services	**Registration and licensing services**	**Permits issued**	145,888	418,577.25	2,630,100.00	7,890,300.00	9,468,360.00	11,362,032.00	13,634,438.00
		Products and services registered	194,518	558,103.01	3,506,800.00	10,520,400.00	12,624,480.00	15,149,376.00	18,179,251.00
	Sub-Prog 2	**Policies and programmes conducted**	97,259	279,051.52	1,753,400.00	5,260,200.00	6,312,240.00	7,574,688.00	9,089,626.00
	Biotechnology compliance services	**Monitoring and surveillance conducted**	72,944	209,288.62	1,315,050.00	3,945,150.00	4,734,180.00	5,681,016.00	6,817,219.00
		Biotechnology facilities audited	121,574	348,814.38	2,191,750.00	6,575,250.00	7,890,300.00	9,468,360.00	11,362,032.00
Total Programme Budget			**753,757**	**2,162,649.16**	**13,588,850**	**40,766,550**	**48,919,860**	**58,703,832**	**70,444,598.00**
Programme 3	**Sub-Prog 1.**	**New prototypes produced**	486,295	1,395,257.53	8,767,000.00	26,301,000.00	31,561,200.00	37,873,440.00	45,448,128.00
Biotechnology Business Development	**Innovation, Research and Development**	**New products developed**	972,590	2,790,515.06	17,534,000.00	52,602,000.00	63,122,400.00	75,746,880.00	90,896,256.00
		Patents and publications produced	729,442	2,092,886.29	13,150,500.00	39,451,500.00	47,341,800.00	56,810,160.00	68,172,192.00
	Sub-Prog 2	**New business enterprises established and maintained**	1,945,180	5,581,030.12	35,068,000.00	105,204,000	126,244,800	151,493,760	181,792,512.00
	Business Enterprise Development	**Revenue generated from business enterprises**	2,431,475	6,976,287.65	43,835,000.00	131,505,000	157,806,000	189,367,200	227,240,640.00
		Business enterprises supported	2,917,770	8,371,545.18	52,602,0000	157,806,000	189,367,200	227,240,640	272,688,768
Total Programme Budget			**5,487,704**	**15,745,093.65**	**170,956,500**	**512,869,500**	**512,869,500**	**512,869,500**	**512,869,500.00**
TOTAL MDA BUDGET			**11,709,983**	**33,597,801.31**	**211,109,360**	**633,328,080**	**759,993,696**	**911,992,435**	**1,094,390,922**

19. Human Resources for the Strategic Period.

Human Resources for the Strategic Period.

No.	Category	Programme 1 (Governance and Admin)	Programme 2 (Biotechnology Regulatory Services)	Programme 3 (Biotech Business Development)	Ministry Total Personnel Requirements By Category
1	Top Management	2	1	1	4
2	Middle Management	8	2	3	13
3	Supervisory Management	3	10	15	28
4	Operational and Support staff	27	55	48	130
5	Total	40	68	67	175

20. Other Resources

I. Materials, Equipment and ICTs

Materials/ Equipment /ICT	2021		2022		2023		2024		2025	
	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
Motor Vehicles	2	US$85,000	10	U$350000	5	US$200,000	5	US$200,000	5	US$200,000
Plant machinery	1	US$78,000	1	US$200,000	1	US$350,000	1	US$500,000	1	US$700,000
Laboratory equipment	11	US$400,000	15	US$600,000	10	US$500,000	10	US$500,000	10	US$500,000
ICT equipment i.e. laptops, printers	60	US$200,000	32	US$100,000	32	US$100,000	10	US$10,000	10	US$10,000

II. Space Requirements

Location	2021		2022		2023		2024		2025	
	Quantity (m2)	Cost	Quantity (m2)	Cost	Quantity (m2)	Cost	Quantity (m2)	Cost	Quantity (m2)	Cost
Head Office										
Beitbridge			1600	US$100,000						
Chirundu			1800	US$50,000						
Nyamapanda			1000	US$50,000						
Forbes					1000	US$50,000				
Kariba					1000	US$50,000				
Plumtree					1000	US$50,000				
Victoria Falls					1000	US$50,000				
Kazungula					1000	US$50,000				

STRATEGIC PLAN

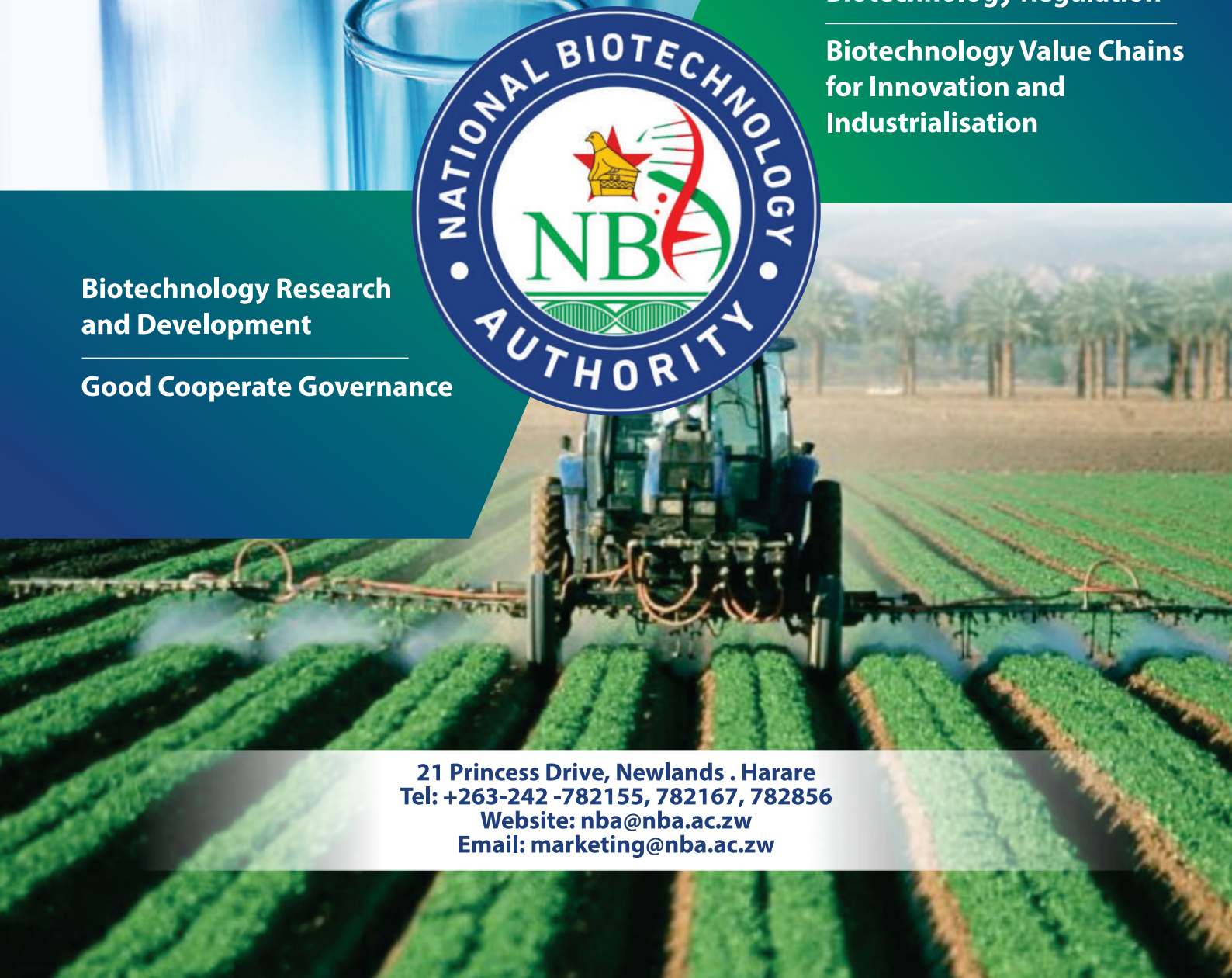
2021-2025

Biotechnology Regulation

Biotechnology Value Chains for Innovation and Industrialisation

Biotechnology Research and Development

Good Cooperate Governance



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