Republic of Zimbabwe

2025 Strategic Plan for Zimbabwe Centre for High Performance Computing (ZCHPC)

REVIEWED 2024 AT MTB.

SECTION A: Profile of the Zimbabwe Centre for High Performance Computing (ZCHPC)

Introduction:

The vision of Zimbabwe is to become a modernised and industrialised nation by 2030. Zimbabwe Centre for High Performance Computing (ZCHPC) shall contribute to this vision, through provision of supercomputing services to support the nation's Science, Technology, Innovation, Research and Development programmes. ZCHPC shall solve national problems and derive benefits from opportunities existing in the critical sectors of the economy such as; Agriculture, Mining, Health, Manufacturing, Energy, Engineering and Academia, among others.

ZCHPC is a research institute whose programmes and activities are derived from the Second Science, Technology and Innovation Policy of Zimbabwe (2012), Cabinet approved Government of Zimbabwe Priority Programmes on Innovation, Science and Technology Development, Ministry of Higher and Tertiary Education, Innovation Science and Technology Development (MoHTEISTD) Minister's five year plan, MoHTEISTD strategic plan, National Development Strategy 1 (NDS1) as well as Vision 2030.

ZCHPC programmes and activities are also anchored on Heritage-Based Education 5.0, the underlying principle being the education, science and technology system that produces goods and services for modernisation and industrialisation of Zimbabwe.

Background :

Zimbabwe Centre for High Performance Computing is a wholly owned government research institute established by the Statutory Instrument (SI) 168 of 2019 as read with section 69 of the Manpower Planning and Development Act [*Chapter 28:02*] and is under the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development. The research institute is mandated to provide training and supercomputing services to the nation as well as supporting national research, development and innovation for Modernisation and Industrialisation. High Performance Computing most generally refers to the practice of aggregating computing power in a way that delivers much higher performance than one could get out of a typical desktop computer or workstation in order to solve large problems in science, engineering, or business.

The ZCHPC programmes were strategically designed to address what the nation wants, guided by the National Priority Programmes. In order to meet its objectives, the Supercomputing Department of the research institute is conveniently divided into two (2) divisions namely Systems Support Division and Applications Division. The Systems Support Division is the one that looks after the health of the machine and the technology. The application Division is the one that specialises in different applications for modernisation and industrialisation of Zimbabwe. This Division is organised into four (4) sections; (1) Geospatial, Space and Earth Sciences Section, (2) Artificial Intelligence and Big Data Section, (3) Life

Sciences Section and (4) Engineering Section. The administrative matter of the Centre is catered through the following sections (1) Finance and Administration, (2) Human Resources and (3) Procurement Management Unit (4) Internal Audit Unit (5) Legal and Corporate Affairs Unit.

i) National Level Contribution:

a. National Vision: Towards a prosperous and empowered upper middle-income society by 2030

b. National Priorities the Agency is contributing to:

NPA 1	**Human Capital Development and Innovation**

c. National Key Result Areas the Agency is contributing to:

NKRA 1	**Innovation and knowledge driven economy**

d. National Outcomes the Agency is contributing to:

	Description of National Outcome
NOUC 1	**Specialised workforce**
NOUC 3	**Improved access and utilisation of advanced knowledge and technologies**
NOUC 4	**Increased innovation for industrialisation**

ii) Sectoral Level Contribution:

Sector: Education and Training

a. Sectoral Key Results Areas

SKRA 1	**Behavioural functional and skills-oriented education**	**N/A**
SKRA 2	**Innovation, industrialisation and skills-driven education**	**N/A**

b. Sectoral Outcomes

	Description of Sectoral Outcome Description
SOUC 4	**Improved research development and innovation throughput**
SOUC 5	**Improved innovation ecosystems**

1. **Zimbabwe Centre for High-Performance Computing (ZCHPC)**

2. **MDA Vote Number:**

3. ZCHPC Vision Statement:

World class supercomputing solutions for research, development, innovation and industrialisation by 2030.

4. ZCHPC Mission Statement:

To provide high performance computing infrastructure and integrated services that promote research, development and innovation.

5. Core Values:

Innovation: Better high performance computing solutions that meet new requirements in a changing world.

Collaboration: Working together with HPC stakeholders to achieve common goals.

Excellence: Provision of outstanding and quality supercomputing services.

Agility: Swift response to the HPC community.

Integrity: Ethical, moral, honest and honourable way of delivering HPC services.

6. Terms of Reference:

Manpower Planning and Development Act [*Chapter 28:02*]

Manpower Planning and Development (Zimbabwe Centre for High Performance Computing) Regulations, 2019 (Statutory Instrument 168 of 2019).

7. Overall Functions:

The functions of ZCHPC shall be to

i. Be the custodian of the national supercomputer and its systems;
ii. Provide high-performance computing services, resources and expertise to solve any computationally-intense research problems in science, policy, business and engineering disciplines;
iii. Provide advanced user support and human resources development in all aspects of high-performance computing;
iv. Provide training to HPC users for the educational and business purposes;
v. Provide system security, reliability and resilience of computing and networking systems;

vi. Provide incubation hub facilities for national computational research;

vii. Develop national scientific programmes in collaboration with other agencies, departments and institutions as appropriate, to improve the usage of cutting-edge technology at all levels of government, business and institutions of higher and tertiary education through;

a. Provision of short, mid to long-term basic applied research projects and programmes in line with high performance computing application;

b. Provision of research and development on, and demonstration of, technologies to advance the capacity and capabilities of high-end computing, storage, networking and related software programmes;

c. Provision of sustainable HPC access by the research community throughout Zimbabwe and beyond.

viii. Perform such other functions as may be assigned by the Committee from time to time for the achievement of the given mandate.

8. ZCHPC Departments and their functions:

8.1 Supercomputing Department

8.1.1 Applications Division

The functions of the Applications Divisions are to**;**

a. Be responsible for business development, customer relations, marketing, consultancy and research;

b. Facilitate specialised research and development projects and activities on ZCHPC application areas including geospatial and earth observation science, engineering, life sciences, artificial intelligence and big data analytics;

c. Carry out strategic planning, implementing monitoring and evaluation of operational functions specifically developing future plans for Centre systems, facilities and personnel;

d. Ensure effective communication between ZCHPC and HPC users and stakeholders;

e. Coordinate quality management systems;

f. Collaborate with HPC users to determine their needs, and translate them into business requirements to drive sales and improvements;

g. Direct the development of project strategy and budget in line with the ZCHPC constitution;

h. Facilitate HPC user training, workshops and conferences;

i. Be responsible for generating revenue;

j. Negotiate all agreements;

k. Identification future business needs and make recommendations;

l. Develop and promote human and institutional capacity strengthening in the field of High-Performance Computing in Zimbabwe.

8.1.2 Systems Support Division

The functions of the Systems Support Division are to;

a. be responsible for directing and overseeing the ZCHPC functions including security, design, development installation and maintenance of hardware and software according to stakeholder needs and the strategic vision;
b. lead, manage, mentor, and build an engineering team to deliver innovative advances in High-Performance Computing;
c. identifies and incorporate new technologies to High Performance as the new technology become available;
   carry out strategic planning of technical functions specifically developing future plans for Centre systems, facilities and personnel;
d. be responsible for the acquisition of infrastructure equipment and software.

8.2 Finance and Administration Department

The functions of the Finance and Administration Department are to;

a. developing business plans, timelines and budgets to perform financial projects;
b. developing and maintaining standard financial and administrative procedures;
c. monitoring and managing expenditures within allotted budget;
d. ensure the preparation and maintenance of all financial records; and
e. identify and resolve financial, human resources and administrative issues.

8.3 Procurement Management Unit

The functions of the Procurement Management Unit are to;

a. planning the procurement activities; and
b. securing the adoption of the appropriate method of procurement; and
c. preparing bidding documents for the design of contract specifications and the evaluation criteria; and
d. preparing bid notices and short-lists; and
e. managing bidding processes, including pre-bid meetings, clarifications and the receipt and opening of bids; and
f. managing the evaluation of bids and any post- qualification negotiations required; and
g. supervising its procurement evaluation committee and—
h. ensuring that the committee has carried out its duties; and

i. receiving evaluation reports from the committee and ensuring that they are correct and have been prepared in accordance with the Public Procurement and Disposal of Public Assets Act [*Chapter 22:23*]; and

j. preparing evaluation reports, including contract award recommendations, where the value of the procurement is less than the prescribed threshold; and

k. submitting all evaluations to its procuring ZCHPC's accounting officer; and

l. preparing contract documents and amendments; and

m. managing procurement contracts or overseeing their management; and

n. preparing such procurement reports.

8.4 Internal Audit Unit

The functions of Internal Audit are to;

a. provide assurance on the adequacy and effectiveness of the Centre's governance, risk management and internal control processes.

b. ensure appropriate audit work plans are developed and approved in line with the Centre's strategy.

c. implement the approved work plans and any special tasks as required by the Director or the Audit Committee.

d. evaluate the efficiency and effectiveness with which resources are employed.

e. implement ZCHPC Committee resolutions.

f. maintain a desired level of professional competence in internal auditing principles and practices.

8.5 Legal and Corporate Affairs

The functions of the Legal Division are to;

a. provide appropriate legal advice to ZCHPC staff, management, and committee on all legal matters related to ZCHPC Business.

b. advise on, and ensure that ZCHPC complies with all relevant statutory and regulatory compliance requirements.

c. liaise with external regulators/regulating authorities on specific compliance requirements.

d. investigate and take corrective action as may be necessary on observed areas of non-compliance.

e. identify and analyse legal risks within ZCHPC.

f. represent ZCHPC in all legal matters in concert with external legal counsel.

g. ensure that all the licences, agreements and permits of ZCHPC are valid and ensure the renewal of all legal contracts before lapse.

h. draft and review all legal documents for ZCHPC.

i. advise the ZCHPC Committee on all compliance and corporate governance issues.

j. prepare ZCHPC Committee and Subcommittee meetings. Prepare and circulate meeting packs for the aforementioned meetings. Prepare, circulate, and communicate minutes and resolutions from the aforesaid meetings to relevant authorities.

k. ensure that data protection procedures are adhered to in accordance with the national cyber security and data protection regulations.

8.6 Operations Unit

The following are the functions of the Operations Unit:

a. Operational Planning: Develop and oversee the execution of operational plans to ensure alignment with ZCHPC's strategic objectives.
b. Cross-Departmental Coordination: Act as the liaison between the Director's Office, the Supercomputing Department, and the Finance and Administration Department to facilitate seamless operations.
c. Policy Enforcement: Ensure that all operational activities comply with established ZCHPC policies, procedures, and national regulations.
d. Resource Allocation: Manage the allocation of resources (human, financial, and material) to support the activities of all ZCHPC units and departments.
e. Operational Reporting: Compile and deliver operational reports, including status updates, risk assessments, and recommendations for improvement, to the Director's Office.
f. Logistics Management: Oversee logistical arrangements for events, meetings, and other ZCHPC activities, ensuring efficiency and cost-effectiveness.
g. Internal Collaboration: Collaborate with the Procurement Management Unit, Internal Audit, and Legal and Corporate Affairs to address operational needs and challenges.
h. Stakeholder Engagement: Serve as the primary operational contact for external stakeholders, ensuring the timely and effective execution of joint initiatives.
i. Project Monitoring: Support the Supercomputing Department's Applications and Systems Support Divisions in implementing high-performance computing projects, ensuring operational readiness and efficiency.
j. Service Quality Assurance: Work with the Finance and Administration Department to establish performance benchmarks for administrative and support services, driving continuous improvement.
k. Risk Mitigation: Identify operational risks and implement strategies to mitigate potential disruptions to ZCHPC activities.
l. Contingency Planning: Develop and execute contingency plans to manage operational crises effectively, ensuring minimal impact on ZCHPC services.
m. Efficiency Audits: Regularly assess operational workflows and propose innovations to improve efficiency and reduce costs.

n. Capacity Building: Identify training and development needs for operational staff and recommend professional development programmes.
o. Operational Compliance: Monitor adherence to ZCHPC's service delivery standards, policies, and external agreements.
p. Technology Integration: Promote and oversee the integration of technology solutions to streamline operational processes across the organisation.

9. State Enterprises and Parastatals, Statutory Bodies and Grant Aided Institutions under ZCHPC and their functions. N/A

KRA Ref	KRA Description	Weight	SKRA REF	NKRA REF	NPA REF
1.	**Provision of supercomputing services**	**70%**	**1&2**	**1**	**1**
2.	**Governance and Administration**	**30%**	**1&2**	**1**	**1**

10. Environmental Scan

10 a. PESTLEG Analysis

	ISSUE	POSITIVE	NEGATIVE
POLITICAL	Political will	● Political will to implement the mandate from the highest office in the country. ● Clear Mandate aligned to national vision ● Political stability.	● Sanctions affecting procurement of HPC infrastructure, software, utilities and exchange programmes. ● High Tech Infrastructure Restriction. ● Technical wars between original equipment manufacturers and competitors from the West. ● Geopolitical dynamics

ECONOMIC	Currency Stability Industry Capacity Utilisation	• Monthly salary grant disbursements. • Budgetary support from Treasury and ZIMDEF. • International goodwill complementing mandate. • Use of a multicurrency regime. • Youthful demographic dividend driving digital change. • Increased diaspora remittances. • Access to interns and resident innovators from academic institutions. • Reliance on open-source software without the need to pay software subscriptions. • Facility for apprentices paid by ITTTD. • Participation in research grant applications and tender bidding.	• Delay in release of operational and project funding. • No guarantee for local currency fuel purchases. • Limited access to foreign currency. • High Inflation rate. • Taxes and bank charges. • High electricity, fuel and internet costs. • Slow business development resulting in low income generation. • Inadequate compensation to motivate interns, graduate trainees and resident innovators.
SOCIAL	Culture	• Skills Development and Knowledge Sharing • Increased Research Capabilities • Youth Empowerment, engages the youthful population in cutting-edge digital and technological advancements. • Social Equity in Digital Access bridging computational resource gaps for under-resourced institutions and communities.	• Digital divide limited access to HPC services in rural or marginalised areas, increasing inequality. • Cultural resistance to technology • Lack of Awareness • Social Inequalities, high costs of education or training in HPC fields may exclude disadvantaged groups.

10 b

TECHNOLOGY	Techonology advancement	• High mobile penetration rate. • Enabling infrastructure of HPC services in place. • Increased storage capacity. • Increased demand for processing power. • Exemption from electricity load-shedding. • Two industrial electricity backup generators. • Protection of intellectual property rights.	• Slow uptake of the highly dynamic; ever-changing HPC technology. • Limited technical capacity-building. • Skills flight. • Limited local manufacturing of HPC equipment. • Frequent Internet outages. • Frequent electricity faults. • Absence of a third tier supply of electricity, e.g. solar.
LEGAL	Legistration and policies	• Enabling policy and legal framework on cyber security and data protection. • Existence of the Statutory Instrument specifying key ZCHPC mandates.	• Some procurement regulations are not flexible. • The procurement process is too long. • Regulations too restrictive on the manipulation of data, thus limiting innovation. • Absence of legal provisions for the autonomy of algorithms, e.g. imposing of penalties on traffic violators by algorithms.
ENVIRONMENT	Ecological	• Less prone to natural disasters. • Zimbabwe is a member to the climate organisations.	• Less green. • Affected by climatic changes. • HPC systems can be affected by excessive dust, corrosion and excessive temperatures e.t.c
GOVERNANCE	Accountability	• Corporate governance framework in place e.g., PECOGA and SI168 of 2019.	• A number of key policies are still to be reviewed.

SWOT Analysis

STRENGTHS	WEAKNESSES
• Fully constituted Committee; • Existence of a base HPC infrastructure; • Financial and material support from government; • Improved storage capacity (2.5 PB); • Energetic and skilled human capital; • Collaboration from partners.	• Ageing HPC Phase 1 Infrastructure; • Limited software licences for some software demanded by industry; • Limited access to local datasets for researchers; and • Limited visibility on the market
OPPORTUNITIES	**THREATS**
• High mobile and internet penetration rate; • Growing number of emerging technologies; • Increased demand for cloud storage by the industry and researchers; • Demand for data sets for research; • Youthful techno-savvy population; • Society demand for innovative Heritage-Based education; • Demand for multimedia production facilities.	• Sanctions affecting procurement of HPC infrastructure, software, utilities and exchange programmes; • Technical wars between original equipment manufacturers and competitors from the West; • Limited access to foreign currency; • High Inflation rate; • Stiff competition from global HPC service providers; • Social misconception about ZCHPC operations; • Restrictive regulatory frameworks; • Health pandemics; • Limited funds to implement strategy.

11. Agency Programmes and Outcomes									
Prog. Ref	**Programme Name**	**Programme Outcome/s**	**Weight**	**Responsible Department**	**Contributing MDAs/ Other Partners**	**Type of Contribution**	**Sector Outcome Ref.**	**National Outcome Ref**	**SDG Ref**
1.	Governance and Administration	1. Improved organisational performance	30 %	Finance and Administration, Human Resources, Procurement, Audit Legal and Corporate Systems Support/Applica	MoHTEISTD Auditor General's Office PRAZ, ZIMDEF, NSSA, OPC (CGU, EGTU), Ministry of Finance and Investment Promotion	Policy guidance, budgetary support, regulatory advice Auditing services, Policy and guidance on public procurement Processes Funding Social Security and Pension. Policy and guidance on Public Entities Corporate Governance and performance appraisals, e-Governance facilitation.	1,2,3,4&5	1,2&3	4,9

				tions	Ministry of Energy and Power Development	funding, Power supply			
2.	Science, Technology and Innovation for Industrialisation	1. Improved research development and innovation throughput	50%	Systems Support/Applications Internal Audit Systems Support/Applications Internal Audit	MoHTEISTD, TelOne, PowerTel, NetOne, ZRP MoHTEISTD, POTRAZ, ZETDC, Ministry of Home Affairs and Cultural Heritage	Funding, policy Internet bandwidth, Connectivity Security, Project collaboration Funding Regulatory Power Security	1,2,3,4&5 1,2,3,4&5	1,2&3 1,2&3	4 4,9

		2. Improved Science, Technology and Innovation Ecosystem	20%	Systems Support/Applications Internal Audit/Legal	MoHTEISTD, TelOne, PowerTel, NetOne, ZETDC, ZRP POTRAZ	Funding, Transport Internet connectivity Power Security Cyber security	1,2,3,4&5	1,2&3	4,9

12. Policies Applicable for the MDA:

	External Policy	Programme Ref	Internal Policy	Programme Ref
1.	Constitution of Zimbabwe	1&2	HPC Usage policy	2
2.	Vision 2030	1&2	Accounting Manual	1
3.	NDS1 (2021-2025)	1&2	Human Resources Manual	1
4.	Ministry of Higher and Tertiary Education Innovation Science and Technology Development Strategic Plan 2021-2025	1&2	Administration Manual	1
5.	Second Science and Technology Development Policy	1&2	Procurement Manual	1
6.	Zimbabwe Manpower Development Act Chapter 28:02	1&2	IP Policy	2

7.	SI168 of 2019	1&2	Change Management Policy	1&2
8	Public Finance and Management Act [*Chapter 22:19*]	1	Applications Policy Manual	2
9.	Public Procurement and Disposal of Public Assets Act [*Chapter 22:23*]	1	Systems Support Policy Manual	2
10	Public Entities Corporate Governance Act [*Chapter 10:31*]	1	Policy on policies	1
11	Labour Act [*Chapter 28:01*]	1	HR Manual	1
12	National Gender Policy	1	HR Manual	1
13	Public Debt Management Act [*Chapter 22:21*]	1	Finance and Administration Manual	1
14	National Corporate Governance Framework	1	Finance and Administration Manual	1
15	COMESA Policy on Infrastructure	2	Finance and Administration Manual	1
16	SADC Infrastructure Master Plan of 2013	2	Finance and Administration Manual	1
17	National Disability Policy	1	HR Manual	1

13. CLIENT NEEDS/PROBLEMS ANALYSIS:

Direct Clients	**Needs/Problems**	**Extent** ***(Magnitude/seriousness)***
1. Researchers and Students	**NEEDS** ● Algorithm Development ● Reliable infrastructure and software ● Remote access to infrastructure ● Data Security ● Data analysis services ● Scalable computing power ● Capacity building	 ● High ● High ● Medium ● High ● High ● Medium ● Medium

	PROBLEMS ● Lack of affordable Data Storage Services ● Failure to Integrate systems **CAUSES** ● High storage costs ● Lack of knowledge	● Medium ● High
2. Industry and Commerce	**NEEDS** ● Data integration and information sharing among industry players ● Data Analysis services ● Reliable Data security ● Business intelligence ● Uninterrupted power supply ● Storage space ● 24/7 technical support ● Training on specialised professional courses ● Disaster Recovery (DR) Sites **PROBLEMS** ● Lack of Informed decisions ● Limited Algorithm Development skills ● Lack of business intelligence ● Limited skill in specialised areas ● Timeous resolution of their tasks ● Reliable fault handling system ● Limited supercomputing power	● High ● High ● High ● High ● High ● Medium ● High ● Medium ● High ● Medium ● Medium ● Medium ● Medium ● Medium ● High ● Medium

3. Government and Agencies	**NEEDS** ● Data integration and information sharing ● Data Analysis services ● Training on specialised professional courses ● Business intelligence ● Data Security ● High Performance Computational power **PROBLEMS** ● Limited Algorithm Development skills ● Lack of Reliable fault handling systems ● Timeous resolution of their tasks	 ● High ● High ● Medium ● Medium ● High ● Medium ● Medium ● High ● Medium
4. Financial Institutions	**NEEDS** ● Data integration and information sharing ● Disaster Recovery Solutions ● Reliable fault handling system ● Data security **PROBLEMS** ● Data Analysis services ● Supercomputing power ● Delayed resolution of their tasks ● Unreliable Data recovery solutions	 ● High ● High ● High ● High ● Medium ● Medium ● Medium ● High

5. Health Service Providers	**NEEDS** • Algorithm Development • Data integration and information sharing • Information security • Reliable fault handling system • Data Analysis **PROBLEMS** • Delayed resolution of client tasks • Inadequate information security systems • Lack of Data driven decisions • Scalable Computing power	 • Medium • High • High • High • Medium • Medium • High • Medium • Medium
Research Institutions	**NEEDS** • Storage as a service • Data Security • Training on specialised professional courses • High Performance Computational Power • Specialized equipment **PROBLEMS** • Limited Algorithm Development skills • Lack of Reliable fault handling systems • Timeous resolution of their tasks	 • Medium • Medium • Medium • Medium • Medium • Medium • Medium • Medium

14. STAKEHOLDERS ANALYSIS

Direct Stakeholders	Demands/ Expectations	Extent *(Magnitude/seriousness)*

1. MoHTEISTD	**Demand** ● Information ● Accountability ● Reporting ● Compliance and performance ● Policy formulation **Expectation** ● Implementation of projects	● High ● High ● High ● High
2. Parliament	**Demand** ● Information ● Accountability ● Compliance	● Low ● Low ● Low
3. Tripartite (OPC, MoFEDIP and PSC)	**Demand** ● Compliance to NAtional Vision and Policy regulations	● High ● High ● High
4. Auditor General, CGU, Accountant General, PRAZ, PPC	**Demand** ● Compliance with statutory obligations. ● Compliance Public Finance Management Regulations ● Program based budgeting and implementation ● Collaborative linkages	● High
5. Ministry of Finance	**Demand** ● Compliance Public Finance Management Regulations ● Program based budgeting and implementation	● High
6. POTRAZ	**Demand** ● Compliance with ICT and Telecommunications Regulations	● High

	Expectations ● Implementation of projects	● High
7. MoHCC	**Expectations** ● Cloud Services ● Uninterrupted Power Supply ● Data Security	● High
8. ZRP	**Expectations** ● Software Development ● Data Security	● High
9. ZINGSA	**Expectations** ● Storage As a Service	● High
10. The Biotech Institute	**Demand** Access to cutting edge technology and resources Sustained infrastructure support Ethical and compliance standards Expectations Training and capacity building Collaboration in data-intensive research	● High
11. ZIMRA	**Expectations** ● Compliance with Tax Regulations	● High

Key:

High = 75-100%

Medium = 50-74%

Low = Below 50%

15. 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	Mitigations
Programme 1: Governance and Administration				
Outcome: Improved organisational performance				
Budget Year **2024**	● Review of Grades	● Authorisation of the proposed grades.	● Budgetary constraints.	● Seeking alternative revenue sources outside the treasury.
	● Review Organogram & Restructuring	● Authorisation of the proposed restructuring.	● Budgetary constraints.	● Seeking alternative revenue sources outside the treasury.
	● Establish Skills Development and Capacitation program	● Timeous disbursement of funds. ● Availability of qualified trainers.	● Brain drain	● implementing staff retention strategies.
	● Implement Policies and SOPs	● Approved policies and SOPs	● Ignorance of extant policies and SOPs	● regular conscientization of staff members on existing members. ● Assigning champions for each policy
	● Implement timeous Performance based Contracts	● All employees appreciate and understand ZCHPC Strategic Plan.	● Lack of resources.	● Find alternative sources of funding outside the treasury.
	● Enhance compliance with Statutory Obligations	● Members of the ZCHPC have awareness of Statutory Obligations.	● Extenuating circumstances. ●	● Continuous stakeholder engagement.
	● Renew authority to procure.	● Approved PMU in the ZCHPC organogram.	● Failure to satisfy procurement requirements.	● Familiarisation with all prerequisites for the grant of authority to procure.
	● Adopt green technologies	● Buy in from the key	● Change in priorities	● Continuous engagement with

		stakeholders ● Availability of funding.		stakeholders
2025	● Intensify Skills Development and Capacitation programme ● Accreditate ZCHPC degree programmes	● Availability of qualified trainers. ● Competitive remuneration for trainers	● Failure to retain skilled trainers	● implementing trainers retention strategies.
	● Continuous upgrade of infrastructure	● Timeous disbursement of funds ● Timeous delivery of procured hardware and software services	● Late disbursement of funds delaying upgrading and upscaling of infrastructure ● Procurement delays	● Finding alternatives sources of funds ● Finding alternative suppliers
	● Upscale revenue generation	● Availability of projects which enables the centre to generate revenue.	● negative changes in the economy ● Absence of required skills for specific projects ● Failure to complete projects on time	● Casting the net wider outside Zimbabwe ● Prepare progress reports to measure progression. ● Outsourcing project specific specialised skills
	● Adopt green technologies	● Buy in from the key stakeholders. ● Availability of funds.	● Change in priorities.	● Continuous engagement with stakeholders.

Period	**Strategies**	**Assumptions**	**Risks**	**Mitigations**
Programme 2: Science, Technology and Innovation for Industrialisation				
Improved research, development and innovation throughput				
Budget year 2024	● Establish of HPC Business Kiosks	● Availability of funds and space.	● Connectivity, content and staff.	● Get into business partnerships and work with researchers from institutions.
	● Develop hardware	● Availability of expertise and customers.	● Limited funding	● Business partnerships and marketing.

	• Develop Software, Datasets and Content	• Availability of developers and consumers	• Limited awareness of ZCHPC products and services by the market	• Increased marketing
	• Deploy HPC system online	• Increase in demand for HPC services. • Online security protocols established.	• Online services depend on network connectivity. • Uploading big data through the online platform maybe expensive.	• Continuous engagement with service providers. • Strategic partnerships with the service providers
	• Establish SOPs to increase capacity utilisation	• Adequate understanding of the HPC Sector and usage by different domains.	• Lack of buy-in from stakeholders.	• Continuous engagement with stakeholders. • Creation of relevant content required by the stakeholders
	• Review of Intellectual Property Policy to govern Research Data and Algorithms	• Adequate understanding of the HPC domain and client needs.	• Lack of buy-in from stakeholders.	• Awareness programs
	• Evaluate the HPC system for delivery capacity	• Software availability for testing. • Availability of benchmarks.	• Some of the testing tool kits may not be exhaustive •	• Continuous engagement with the infrastructure supplier.
	• Review of current Professional certification in HPC and related domain specific courses	• Participation by relevant stakeholders. • Consultative curriculum development workshops successful	• Low uptake of the training programmes	• Awareness programmes promotions
	• Improve ADD-ONS compatible cluster for latest applications	• Availability of System Blueprint.	• Shortage of funds to buy licences	• Use of open source licences • Finding alternative sources funds to buy commercial software licences

	● Offer Skills Development Programmes	● Stakeholder uptake of programs	● Lack of confidence in the certifications	● Maintaining high standards and awareness of the programs
	● Design and implement of algorithms to address identified problems in the following domains: ● Engineering ● Life Sciences ● Geospatial and Earth Sciences ● Big data and Artificial Intelligence	● Active participation and buy in from relevant stakeholders. ● Normal working and travel conditions.	● Late disbursements of funds. ● Lack of access to foreign currency.	● Continuous engagement of the development partners. ● Strict monitoring and evaluation on projects.
2025	● Upscale research, develop and innovate HPC related products through cloud services, robotics and coding, Software Development, digital health platform, Virtual and Augmented Reality).	● Funding availability. ● Stakeholder collaboration	● Late disbursements of funds. ● Intellectual property disputes	● Seek alternative sources of funding. ● Signing of MOUs and NDAs
	● Intensify HPC awareness programs (ZITF, Symposium, trainings, hackathons and workshops.)	● Availability of trainers ● Stakeholder collaboration ● Funding availability.	● Late disbursements of funds.	● Seek alternative sources of funding.
	● Assess system and specify development for Computing power upgrade	● Availability of technical skill set	● Unavailability of funds	● Continuous engagement with stakeholders. ● Inhouse funds generation

	• Improve HPC Data Centre related science, technology and innovation ecosystem through integration of e-governance services	• New innovations • Stakeholder collaboration • Adequate storage and connectivity resources	• Lack of HPC and cloud knowledge. • Lack of cooperation from potential clients • Technical Faults	• Continuous engagement with stakeholders. • HPC awareness program. • Data backup
• **Improved Science, Technology and Innovation Ecosystem**				
Budget Year 2024	• Integrate key national services	• Approval by partner organisations	• Differing priorities	• Expand from expandable pilot projects
	• Provide consultancy Services	• Availability of industry needs	• Little reference of previous projects	• Work out business partnerships and engage qualified and experienced personnel
	• Partnerships	• Stakeholder buy-in	• Contract breaches	• Continuous engagement with stakeholders
	• Startups	• Availability of market gaps	• Lack of funding	• Strategic partnerships with industry

SECTION B: PERFORMANCE FRAMEWORK FOR THE AGENCY

16. **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	A	AV	T	ALV	T	ALV

Program 1: Governace And Adminstration																
1.	Improved Governance and administration	Client satisfaction level	%	**2021**	**60**	**60**	**+/-5**	**62**	**+/-5**	**65**	**74**	**+9**	**75**	**+/-7**	**80**	**+/-8**
		Statutory compliance level	%	**2021**	**100**	**100**	**0**	**100**	**0**	**100**	**70**	**0**	**100**	**0**	**100**	**0**
		Employee Satisfaction Index	%	**2023**	**-**	**-**	**-**	**-**	**-**	**80%**	**67.5 %**	**+/-8**	**65%**	**+/-6**	**70%**	+/- 7
Program 2: Science, Technology and Innovation for Industrialisation																
2.	Improved research development and innovation throughput	Capacity utilisation	%	**2024**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**50**	**+/-5**	**60**	**+/-6**
		Revenue growth from the commercialised goods and services	% change in revenue	**2024**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**5**	**-**	**+50%**	**+/-5**
3	Improved Science, Technology, and Innovation Ecosystem.	System uptime	%	**2025**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**95%**	**+/-9**
		Data Protection Level	%	**2025**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**60%**	**+/-6**
		Internet Bandwidth	% change in bandwidth	**2025**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**+50%**	**+/-5**

T = Target; ALV = Allowable Variance

16(b). Outputs Performance Framework

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	A	AV	T	ALV	T	ALV
Programme 1: Governance and Administration																	

OUC 1 Improved corporate governance																	
OP 1.1	Statutory reports produced	**71**			**-**	**-**	**-**	**1**	**0**	**1**	**1**	**0**	**32**	**0**	**36**	**0**
OP 1.2	Mandatory reports produced	**46**			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**20**	**0**	**20**	**0**
OP 1.3	Staff development programmes conducted	**52**	**-**		**-**	**-**	**-**	**20**	**+-3**	**15**	**15**	**0**	**6**	**0**	**7**	**0**
OP 1.4	Positions filed	**23**	**18**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**23 filed**	**+/-2**
OP 1.5	Audit Observations resolved												**70**	**+/-7**	**90**	**+/-9**
Programme 2: Science, Technology and Innovation for Industrialisation																
OUC 2 Improved research development and innovation throughput																
OP 2.1	Intellectual Property Rights filed	**4**	**2**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**0**	**2**	**0**
OP 2.2	Publications produced	**16**	**6**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**6**	**0**	**10**	**+/-1**
OP 2.3	Robots developed	**10**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**10**	**+/-1**

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**	**A**	**AV**	**T**	**ALV**	**T**	**ALV**
OUC3 Improved Science, Technology, and Innovation Ecosystem.																
OP 2.4	RAM added (GB)	18432	**18000**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**300**	**+/-30**
OP 2.5	Students graduated	260			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**200**	**+/-20**
OP 2.6	HPC users capacitated	1260	**60**	**2021**	**-60**	**60**	**;+/-6**	**200**	**;+/-20**	**250**	**-**	**;+/-25**	**-**	**-**	**750**	**+/-75**

OP 2.7	Solar systems installed (kW)	280	-		-	-	-	-	-	-	-	-	-	-	**280**	**+/-28**
OP 2.8	Resellers accredited	10	-		-	-	-	-	-	-	-	-	-	-	**10**	**+/-1**

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

17. Programme Budget

Programme		Programme Outputs	Budget Last Year 2022	Budget Current Year 2022	Budget Year 1 2023	Budget Year 2 2024	Budget Year 3 2025 ZWG
Programme 1 Governance and Administration	**Sub-Prog 1. Committee and Director's Office**	Strategic Plan developed		**$6,800,000.00**	$10,200,000.00	$43,000,000.00	$510 000.00
		Policies formulated		**$2,500,000.00**	$3,750,000.00	$45,000,000.00	$530 000.00
		Policies reviewed.		**$3,000,000.00**	$4,500,000.00	$35,000,000.00	$410 000.00
	Sub-Prog 2 Finance and Admin	Annual budget produced		**$200,000.00**	$600,000.00	$92,625,000.00	$500 000.00
		Financial statements produced		**$400,000.00**	$750,000.00	$57,000,000.00	$300 000.00
		Audit reports produced		**$500,000.00**	$750,000.00	$10,500,000.00	$150 000.00
		Vacancies filled		**$13,000,000.00**	$19,500,000.00	$36,875,000.00	$435 000.00
		Staff development programs conducted		**$5,000,000.00**	$7,500,000.00	$180,000,000.00	$2 100 000.00
		Goods and services procured		**$480,000,000.00**	$720,000,000.00	$500,000,000.00	$5 850 000.00
Total Programme Budget						**$1 000 000 000.00**	**$10 785 000.00**
Science, Technology and Innovation for	**Sub-Prog 1 Improved research development and**	Capacity Utilisation		$18,000,000.00	$27,000,000.00	$200,000,000.00	$2 300 000.00
		System Security Level		$90,000,000.00	$135,000,000.00	$600,000,000.00	$7 000 000.00

Industrialisation	**innovation throughput**	Project Novelty		$22,500,000.00	$33,750,000.00	$125,000,000.00	$1 450 000.00
		Experimental projects undertaken		$5,550,000.00	$8,325,000.00	$500,000,000.00	$5 900 000.00
		High-impact projects commissioned		$4,500,000.00	$6,750,000.00	$400,000,000.00	$5 000 000.00
		IPRs Filled		$18,000,000.00	$27,000,000.00	$100,000,000.00	$1 200 000.00
		Publications produced		$90,000,000.00	$135,000,000.00	$75,000,000.00	$900 000.00
	Sub-Prog 2 **Improved Science, Technology, and Innovation Ecosystem**	Partnerships concluded		$90,000,000.00	$135,000,000.00	$200,000,000.00	$2 350 000.00
		Startups registered		$90,000,000.00	$135,000,000.00	$125,000,000.00	$1 450 000.00
		Solar Installed					$9 600 000.00
		Students graduated		$22,000 000.00	$145,000.000.00	$72,500.000.00	$900 000.00
		HPC users capacitated		$19,500,000.00	$29,250,000.00	$502,500,000.00	$5 800 000.00
		ZCHPC Resellers Accredited					
Total Programme Budget						**$4,000,000,000.00**	**$43 850 000.00**
TOTAL Agency BUDGET						**$5,000,000,000.00**	**$54 635 000.00**

18. Human Resources for the Strategic Period.

No.	Category	Programme 1	Programme 2	ZCHPC Total Personnel Requirements by Category
1	Top Management	**1**	**3**	**4**
2	Middle Management	**4**	**3**	**7**

3	Supervisory Management	**1**	**-**	**1**
4	Operational and Support staff	**6**	**8**	**14**
5	**Total**	**12**	**14**	**26**

19. Other Resources

I. Materials, Equipment and ICT

Materials/ Equipment /ICT	**2021**		**2022**		**2023**		**2024**		**2025**	
	Quantity	**Cost**	**Quantity**	**Cost**	**Quantity**	**Cost**	**Quantity**	**Cost**	**Quantity**	**Cost ZWG**
Motor Vehicle	4	24369685.00	Nil	nil	4	54000000.00	5	10 325 000 000.00	4	$7 650 000.00
Laptops	10	1775520.00	5	1762500.00	5	2643750.00	60	6 750 000 000.00	31	$2 325 000.00
Furniture	25	2848693.88	15	7800000.00	10	14800000.00	27	951 300 000.00	41	$1 450 000.00
Computer equipment	15	2037318.00	10	6400000.00	15	9700000.00	20	389 075 000.00	35	$800 000.00

II. Space Requirements

Location	**2021**		**2022**		**2023**		**2024**		**2025**	
	Quantity (m2)	**Cost**	**Quantity (m2)**	**Cost**	**Quantity (m2)**	**Cost**	**Quantity (m2)**	**Cost**	**Quantity (m2)**	**Cost**
e.g Head Office										

ADDENDUM

1. Client Satisfaction Level.

   A percentage of positive/neutral responses calculated from total responses from clients during client satisfaction surveys.

2. Statutory Compliance Level.

   The ZCHPC is a law-abiding entity and at all times strives to meet all its statutory obligations. The level of compliance is calculated as the percentage of statutory obligations met over all the entity's Statutory Obligations.

3. Audit Observations Resolved.

   The resolved internal audit observations calculated as a percentage of all the internal audit observations within the period in review.

4. Employee Satisfication Index

   A percentage measure of employee satisfaction based on work environment, rewards and recognition, and safety measures.

5. Capacity Utilisation.

   The HPC Cloud System automatically computes and displays the capacity utilisation of all its CPUs at each specific time.

6. Revenue Generated from Commercialised Goods and Services

   Indicates a percentage increase in the financial income generated by ZCHPC from business development initiatives as compared to the same period in the previous year.

7. System Uptime

Refers to the amount of time that ZCHPC's data centre is powered on. Higher system uptime means fewer interruptions, which is critical for providing reliable services to clients. The output is read from software that tracks system uptime.

8. Data Protection Level

   ZCHPC is a Data Controller with a Data Protection Officer (DPO) who ensures that the organisation complies with the requirements and guidelines by the Data Protection Authority (POTRAZ). A data protection checklist enables the DPO to determine the level of data protection (including data security and privacy) as a percentage.

9. Internet Bandwidth

   Internet is used by ZCHPC staff, stakeholders and researchers working onsite or remotely. It is also used during system backup/recovery operations. Increased bandwidth will improve the efficiency of connectivity. Change in bandwidth is measured in terms of megabits per second (mbps) added as a percentage of the previous speed.

10. Statutory Reports Produced.

    This refers to reports ZCHPC is mandated to produce and submit as provided under various statutes. The reports include the Annual Report, Financial Statements (monthly, quarterly, and yearly), monthly procurement returns, strategic plan review workshop report, and annual budget.

11. Mandatory Reports Produced.

Mandatory Reports are those reports produced within the ZCHPC in accordance with its internal Policies. The following reports are to be produced, monthly administration reports and quarterly internal audit and compliance reports.

12. Staff Development Programmes Conducted

    These are organised training sessions, workshops, or educational programs aimed at improving the skills and knowledge of ZCHPC employees.

13. Positions Filed

    This refers to the positions within ZCHPC occupied by substantive staff, ensuring that all necessary roles are occupied.

14. Intellectual Property Rights Filed

    These are Intellectual Property Rights (IPRs) filed for registration. They include patents and copyrights of unique products/services and it gives provisional protection of the intellectual property as no one else can file the same ideas. This is done to protect ideas generated by the researchers. The IPRs may be industrialised or commercialised later. The planned products/services to be patented include: 1)Precision Agriculture System, 2) Intelligent Traffic Control System.

15. Publications Produced

    These include journal and conference research papers published. This is for the purpose of proving the authenticity of research ideas through reviews and sharing them within the body of knowledge to assist other researchers.

Publication result from numerous experimental projects run throughout the year. They should be published in high impact journals/conferences.

16. Robots Developed

    Different types of robots: software, hardware or hybrid are developed at ZCHPC using different materials; new or recycled. The robots may be for commercial purposes, depending on their levels of sophistication and professionalism. The robots may be in different forms: humanoid, vehicular, flying, arms, entertainment,etc

17. RAM Added

    This is the total primary memory added on ZCHPC systems. RAM contributes to the processing speed of the systems as it provides working storage.

18. Students Graduated

    This indicates the number of students who have successfully completed their educational courses associated with ZCHPC and received their certificates.

19. HPC Users Capacitated

    This refers to the process of training and equipping users with the skills and knowledge necessary to effectively use high-performance computing resources provided by ZCHPC. The names of the trainees should be recorded on the online or physical attendance register.

20. Solar Systems Installed

This refers to the installation of solar energy systems at ZCHPC, aimed at generating renewable energy for its operations.

21. Resellers Accredited

Number of organisations or individuals officially selling products and services on behalf of ZCHPC.

Review Participants

Name	Organization	Designation	Contact Details
Lovemore Mbombo	Public Service Commission	Principal Training Officer	0774195658

- ZCHPC Staff and Committee.