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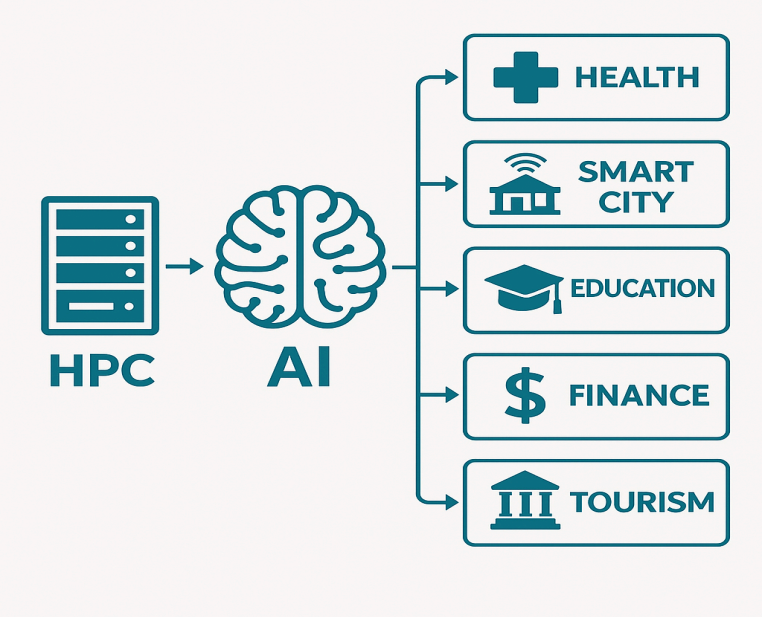
# Zimbabwe's Future in an AI Driven World




## Executive Summary

Zimbabwe stands at crossroads: with global AI markets set to top US $15 trillion by 2030, our nation risks being a passive observer instead of a front-runner. By building on the existing High Performance Computing (HPC) infrastructure in Zimbabwe and embedding Artificial Intelligence (AI) into our Vision 2030 and National Development Strategy 1 (NDS1), we can unlock breakthroughs in health, agriculture, governance, education and beyond. This brief presents three policy options, analyzes their trade-offs and recommends a hybrid model with six strategic pillars.

## 1. Why Now? Context & Imperative

- **Global Momentum:** World AI value projected at US $15T by 2030—Zimbabwe must invest today to compete tomorrow.

- **Existing Foundations:** Zimbabwe Centre for High Performance Computing (ZCHPC) and National Data Centre (NDC) already support key sectors (health analytics, precision agriculture, crime mapping).
- **National Mandates:** Vision 2030 and NDS1 call for digital transformation; AI & HPC policy will operationalize these goals.

## 2. Policy Vision and Objectives

**Vision:** Establish Zimbabwe as a regional powerhouse in AI driven innovation and supercomputing by 2030.
**Key Objectives:**

1. **Unified Governance:** Central coordination to break down silos.
2. **Talent Ecosystem:** Develop world-class AI skills from foundational education to industry deployment.
3. **Infrastructure Expansion:** Grow HPC capacity nationwide.
4. **Innovation Acceleration:** Stimulate start-ups and Research and Development (R&D).
5. **Ethics & Trust:** Ensure transparent, fair, human-centered AI.
6. **Data Stewardship:** Secure, sovereign data management.

## 3. Policy Options and Trade-off Analysis

| Option | Description | Advantages | Disadvantages/Risks |
|---|---|---|---|
| **A. Central Authority** | Empower National AI & HPC Council with budgetary control. | • Unified oversight<br>• Ethics enforcement | • Bureaucracy risk<br>• Slower regional rollout |
| **B. Federated Regional Hubs** | Provincial HPC nodes under a light national framework. | • Local tailoring<br>• Sparks innovation | • Data security variance<br>• Duplication risk |
| **C. Public–Private Partnership (PPP) Model** | Co-fund projects with the private sector; government co-invests. | • Leverages commercial capital<br>• Faster testing | • Profit bias risk<br>• Data-monopoly potential |

## 4. Six Pillars & Strategic Actions

| Pillar | Strategic Actions |
|---|---|
| 1. Governance & Regulation | • Create National AI & HPC Council under ICT Ministry<br>• Pass AI/Data Protection Acts (GDPR-aligned)<br>• Issue sectoral guidelines (health, agriculture, education) |
| 2. Infrastructure & Sovereignty | • Scale HPC grid to all provinces<br>• Link with National Data Centre ("Single Source of Truth")<br>• Establish sovereign-data vaults for sensitive datasets |
| 3. Skills & Capacity | • Integrate AI/HPC into university curricula<br>• Sponsor AI Fellowships & Centres of Excellence<br>• Launch continuous-learning programmes for public/private sectors |
| 4. Use Cases & Applications | • Health: Predictive analytics in Impilo EHR<br>• Agriculture: AI-driven precision farming<br>• Governance: Smart city dashboards, civil-registry insights<br>• Tourism: Mixed-reality heritage trails<br>• Education: VR labs, indigenous-language NLP tutoring |
| 5. Ethical AI & Inclusion | • Mandate bias audits & human-in-loop oversight<br>• Enshrine AI ethics code in law<br>• Prioritize solutions for rural and marginalized communities |
| 6. Innovation & Ecosystem | • Seed grants for AI/HPC start-ups<br>• Regulatory sandbox for pilot projects<br>• Leverage AfCFTA to attract regional investment |

## 5. Institutional Roles

- **HPC Centres**: Operate & expand HPC infrastructure; host training.
- **Ministry of ICT**: Lead policy development; oversee implementation.
- **Universities & Research Centres**: Educate talent; drive applied R&D.
- **Private Sector**: Invest in tech ventures; commercialize solutions.
- **Civil Society**: Advocate for transparency; ensure community needs.

## 6. Mitigating Risks

- **Cybersecurity:** Deploy AI-powered threat detection; explore blockchain for data integrity.
- **Ethical Missteps:** Quarterly ethics audits; public AI-project registry.
- **Digital Exclusion:** Roll out mobile/low-bandwidth AI tools; establish rural innovation hubs.

## 7. Recommendations

1. **Adopt** a Zimbabwe National AI & HPC Policy by Q4 2025.
2. **Commit** dedicated funding for infrastructure & R&D.
3. **Elevate** HPC centres as regional competence centers.
4. **Institutionalize** multi-stakeholder governance & sandboxes.
5. **Leverage** AfCFTA to position Zimbabwe as a SADC AI hub.

## 8. Conclusion

Zimbabwe already boasts critical assets—HPC infrastructure and a clear digital transformation mandate. A targeted, ethically grounded AI & HPC policy will accelerate inclusive growth, foster scientific discovery and secure our place on the global technology stage.

## References

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