KEYNOTE PAPER

FROM AMBITION TO DELIVERY: FORESIGHT, ECONOMIC AND POLICY EVIDENCE FOR THE GROW ZAMBIA AGENDA AND THE NATIONAL DEVELOPMENT PLAN

Prepared for

Zambia Higher Education Day

26 November 2026

Brian P. Mulenga,[1] Mick Mwala,[2] Patrick Okori[3] Musonda Chitah, K., [1] Fwasa Singogo1, and Stephen Kabwe[1]

Affiliation: IAPRI[1], University of Zambia[2], RUFORUM[3]

ABSTRACT

Zambia's Grow Zambia Agenda seeks to more than double the economy within five years through eight production targets. Drawing on foresight, growth accounting and policy analysis, the paper examines conditions for delivery. Doubling output requires annual growth of about 14.9%, well above projected rates of 5–7%, and no target is past halfway. Over the past decade, growth was driven almost entirely by physical capital accumulation and labour-force expansion, while total factor productivity (TFP) stagnated; agricultural TFP grew by only about 0.1% a year in 2011–2023, and agricultural labour productivity fell by almost half over two decades. Firm-level evidence shows weak growth, constrained by limited finance, unreliable electricity, informal competition, and low technology adoption. With constrained fiscal space, the targets can be met only through higher land, labour and total factor productivity, which depend on skills, research and innovation. Zambia's science base is thin and ageing: about 246 full-time-equivalent agricultural researchers, only 14% holding PhDs, and research spending well below the African Union benchmark. The paper proposes pairing each target with a research, innovation and skills plan, making research capacity measurable in the Ninth National Development Plan, workforce planning, independent annual monitoring, and designing for resilience and value addition.

Keywords: Grow Zambia Agenda; total factor productivity; labour productivity; agricultural research capacity; higher education; skills development; Ninth National Development Plan; Zambia

1. INTRODUCTION

National development agendas are tested by delivery: by whether an economy can mobilise resources, organise production, develop technologies, coordinate institutions and adapt to change. The Grow Zambia Agenda aims for rapid growth, higher production, more electricity and more jobs (ZNBC, 2026), and seeks to more than double the economy from US$28.88 billion (World Bank, 2026) to over US$60 billion within five years.

The set of eight production targets popularly summarised as "10-10-5-3-3-1-1-1", comprises 10 million tonnes of maize; 10,000 megawatts (MW) of electricity generation; 5 million tourist arrivals a year; 3 million tonnes of copper; 3 million tonnes of soya beans; 1 million tonnes of wheat; US$1 billion in beef exports; and 1 million tonnes of sugar.

These outcomes are connected but not interchangeable: more output does not automatically mean higher productivity, more exports do not mean stronger domestic linkages, and a larger workforce does not automatically become a demographic dividend. Two questions follow: how large is the gap between today's capacity and the targets, and what will close it?

Doubling real economic output in five years would require annual real growth of about 14.9%, well above current medium-term projections (Table 1). The electricity and copper targets require sustained investment in generation, mines and exploration, supported by reliable power, adequate infrastructure and an enabling policy environment. The crop targets depend on higher farm productivity, yet climate variability, limited irrigation, costly inputs and gaps in finance, technology, extension and markets constrain production.

Table1: Selected Grow Zambia targets and the pace of delivery

Measure	What the target requires	Recent performance or projection
Economy	Doubling real output in five years: about 14.9% growth a year	About 7% in Government's 2027–2029 budget plan
Electricity	10,000 MW by 2031: about 1,100 MW added a year	About 300 MW a year added over the last five years
Copper	Output growth of about 22% a year to 2031	8% growth in 2025

Source: ZambiaInvest (2026); Lusaka Times (2026) and Ecofin Agency (2026)

At 7% a year, the economy would need to grow by about 40% over five years; at 10%, by about 61%. The crop targets are even steeper. Maize must double, soya must rise almost sevenfold, and wheat must rise twelvefold. Across the eight targets, the latest levels (2023 to 2026) show none beyond half-way and three below one-fifth (see Figure 1).

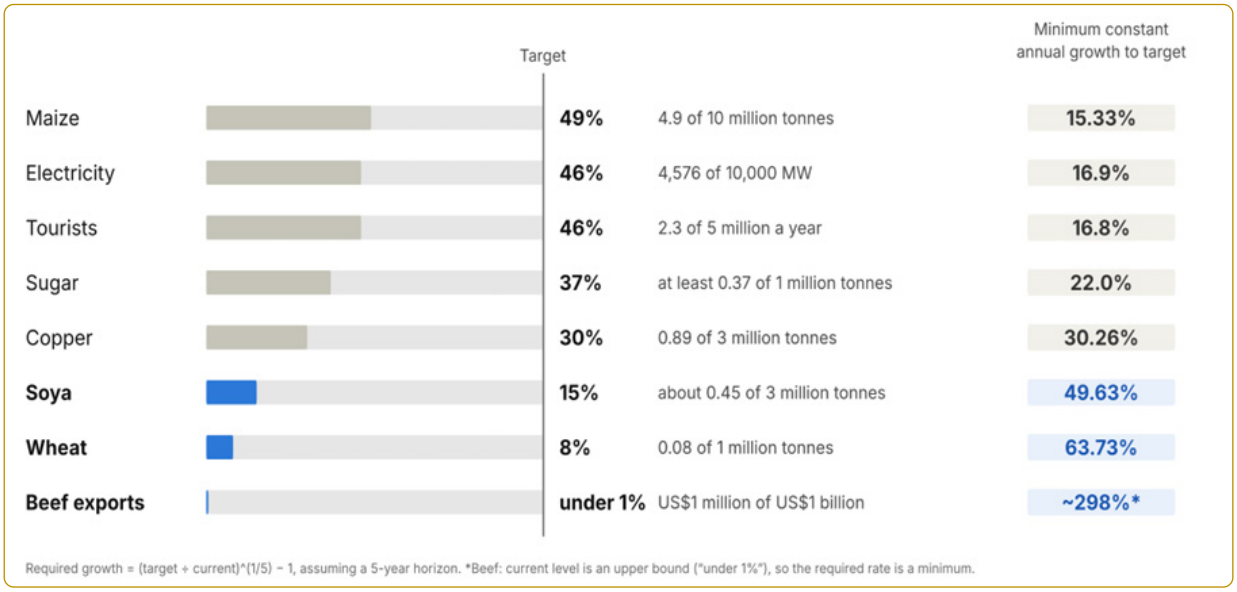


Figure 1: Share of each Grow Zambia target reached at the latest reported level
Source: Author's Computation from Zambian Government's presidential policy agenda (2026)

The targets are therefore more than aspirational figures: each implies complementary investments and capabilities. Expanding crop output requires improved seed, soil and water management, extension, affordable finance, reliable input markets, post-harvest infrastructure and buyers for the additional production. Expanding electricity generation requires transmission, engineers and maintenance capacity, project preparation, regulatory certainty and a financing model that remains viable under climate and fiscal constraints. In every sector, output targets ultimately depend on combining capital, labour, knowledge and institutions more productively.

Table 2 maps each target to the principal questions that a sector plan would need to answer; it indicates, rather than measures, the constraints.

Table 2: Delivery questions for each Grow Zambia target

Target	Delivery questions to resolve	Relevant evidence/capability needs
Maize: 10 million tonnes	1. What share is expected from higher yields versus area expansion? 2. Who will buy, store, process or export the additional crop, including in a regional surplus year?	• Yield and soil diagnostics • Climate and irrigation economics • Storage and processing capacity • Price, trade and export scenarios
Electricity: 10,000 MW	1. What is the verified starting capacity, annual build schedule and financing plan? 2. Can transmission, distribution and reliable supply keep pace?	• Generation mixes and hydrology stress tests • Grid and storage needs • Project economics • Engineering and maintenance workforce.
Tourism: 5 million annual arrivals	1. Which source markets, destinations and visitor segments drive the target? 2. Can access, accommodation, conservation, safety and services support demand?	• Market and visitor-spend analysis • Destination infrastructure • Skills • Digital marketing • Local supplier and community linkages.
Copper: 3 million tonnes	1. What production profile is feasible given mine investment, ore grades, power, water, logistics and global demand? 2. How will domestic suppliers participate?	• Mine pipeline and cost curves • Energy and water needs • Supplier capability • Skills transfer • Environmental and fiscal impacts.
Soya: 3 million tonnes	Can production and yields scale while processors and export markets absorb output at prices that reward farmers?	• Seed and agronomy research • Rotation and soil effects • Feed and crushing demand • Storage, quality and trade competitiveness.
Wheat: 1 million tonnes	1. What are the relative costs and risks of local production, irrigation, imports and climate exposure? 2. Is there reliable processing demand?	• Irrigation and energy costs • Variety trials • Water availability • Price comparisons • Mill demand and import parity.
Sugar: 1 million tonnes	1. What expansion is feasible given water, land, energy, processing capacity, environmental impacts and market access?	• Water and land assessment • Mill capacity • Production costs • Export and domestic demand • Environmental and competition analysis.
Beef: US$1 billion in exports	1. What volume, price and market access underpin the earnings target? 2. Can animal health, traceability, slaughter, cold chain and logistics meet standards?	• Herd productivity and veterinary services • Disease surveillance • Traceability • Abattoir and cold-chain capacity • Export-market requirements.

Source: Author's assessment (2026)

The central question for delivery is therefore not whether the targets are ambitious, but whether the assumptions connecting them are credible. Can investment, productivity and market demand grow quickly enough at the same time? Can infrastructure support new production? Can public and private finance fund the expansion? And can Zambia develop the technical capabilities, institutions and evidence needed to adjust when assumptions fail? This paper argues that the answer turns on productivity, of land, of labour and of the economy as a whole, and that productivity in turn depends on the people, research and knowledge that higher education supplies. It assesses these questions through foresight, economic evidence and policy alignment.

2. FORESIGHT: CONDITIONS FOR ZAMBIA

Foresight explores plausible futures to test whether today's policies will hold under different conditions. For Zambia, three forces are likely to shape delivery to 2031 and beyond: a fast-growing young population, climate risk, and the relationship between production growth and market absorption.

2.1 A growing youth population and the employment challenge

Zambia's population is projected to rise from about 23 million in 2026 to 26.7 million in 2031 and 39.9 million in 2047, and the working-age population will more than double between 2023 and 2047 (Zambia Statistics Agency, 2026; Figure 2). Skills decisions taken in this plan period will therefore shape the workforce of the 2040s.

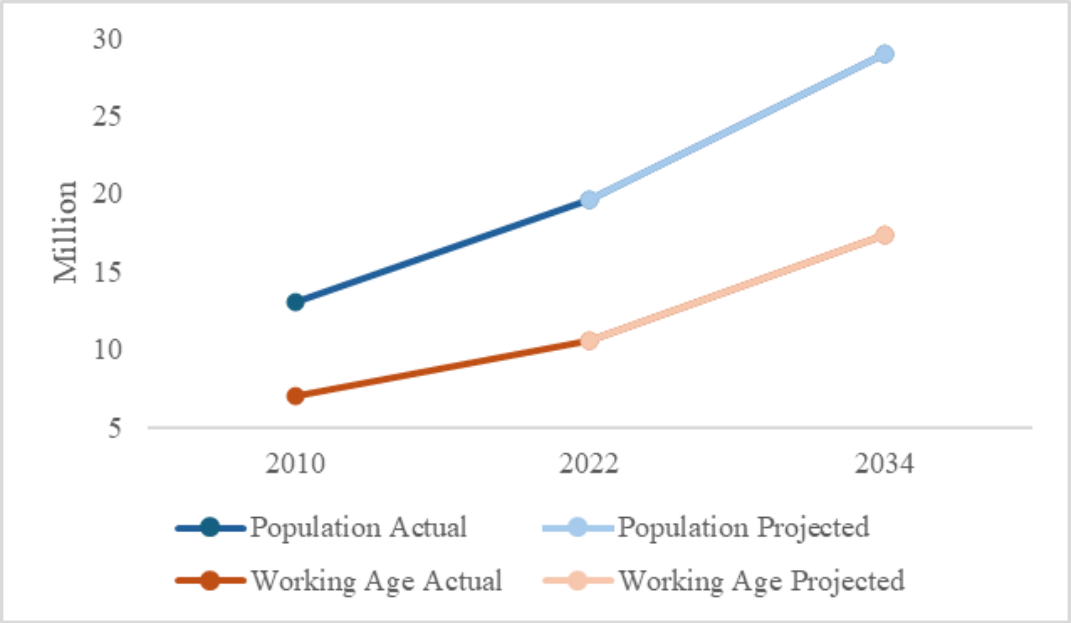


Figure 2: Zambian Population and Working Age 15+ years (2010 to 2034)
Source: ZamStats (2025; 2026)

This demographic transition creates an opportunity, but not an automatic dividend. A growing workforce becomes an economic asset only when workers find productive employment and have the capabilities that employers and enterprises demand; otherwise, population growth raises demand for education, housing and social protection without raising output per worker. The objective is therefore not employment numbers alone, but productive, fairly remunerated work and rising labour productivity in both formal and informal activities.

Labour force data indicate that unemployment among people aged 15–24 stands at 29.1%, while approximately 74% of employment is informal (Labour Force Survey, 2024). These conditions point to a structural challenge. Zambia

must expand the number of productive jobs while improving the productivity, security and earnings associated with existing work.

Policy Prioritisation through Value Chain (PPVC) modelling by the Indaba Agricultural Policy Research Institute (IAPRI) shows how modest the job gains from single value chains can be. Reforms in the beef sector were forecast to support about 309,000 jobs across the economy by 2035, and soybean reforms up to 52,000 (PPVC beef and soybean reports, 2025): together roughly 360,000 jobs, under one-fifth of the aspired two million. Within the soybean value chain the model shows up to 138,000 new jobs, but net gains are only 52,000, because labour moves between sectors. Labour supply and skills will limit how fast jobs can grow.

The ambition to create two million jobs should therefore be linked to a sector-by-sector account of where jobs will arise, what makes those activities commercially viable and which skills are binding constraints. Training more graduates will not create jobs if investment and demand remain weak; equally, investment will underperform if firms cannot recruit people with the necessary technical capabilities. Higher education and Technical and Vocational Education and Training (TVET) institutions must therefore equip graduates with relevant competencies, help the existing workforce adapt, and support enterprise through applied research, incubation and collaboration with industry. The question is not how many graduates Zambia produces, but whether the education system builds the capabilities the growth sectors need and whether the economy uses them productively.

2.2 Climate change as a development constraint

The 2024 drought demonstrated how climate shocks can disrupt Zambia's development trajectory. Hydropower availability fell sharply from 3,777 MW to 1,040 MW. Economic losses from the decline were estimated at US$1.3 billion, about 5% of the Gross Domestic Product (GDP) (Phiri & Clayton, 2024). Furthermore, the number of people facing food crisis was estimated to reach 5.6 million (IPC, 2024).

The implications extend beyond agriculture and energy. Electricity shortages raise production costs and constrain industry; agricultural losses reduce rural incomes, raise food prices and increase pressure on public spending. Climate resilience is therefore a macroeconomic and productivity issue, not a marginal environmental one. During the 2024 drought, maize production fell by about 56% and soybean production by about 78% (ZamStats, 2025), and below-average rains are again expected from October 2026 to May 2027 (FEWS NET, 2026b).

Expanding maize production without addressing rainfall variability would increase exposure to shocks: about 90% of cultivation is rain-fed, and between 55% and 72% of the rural population depends directly on rain-fed smallholder farming (ACAPS, 2025; FEWS NET, 2026a). Expanding generation without diversifying energy sources would leave the economy exposed to hydrology, and agro-processing investments will deliver less if unreliable electricity and transport undermine competitiveness.

A resilient strategy requires investment in irrigation, drought-tolerant varieties, climate information, soil and water management, renewable energy, storage and early-warning systems. It also requires research to establish which technologies and practices are economically viable under Zambia's different agroecological and energy conditions, what they cost farmers, utilities and firms to adopt, and where public support is justified. To reduce climate exposure, such findings need a route into procurement, extension, investment decisions, standards and operating practice.

2.3 Production growth and the limits of market absorption

A third challenge is whether markets can absorb the extra output. If maize production

reaches 10 million tonnes, more than 7 million tonnes would need to be stored, processed or exported after domestic use. Regional markets offer opportunities, but neighbouring countries have their own production cycles, trade policies and import requirements. Southern African Development Community (SADC) countries imported about 3.6 million tonnes in 2025 (Farm Future Africa, 2026); even if Zambia supplied all of it, regional imports would absorb only about half of the planned surplus.

Production that exceeds effective demand can depress farm-gate prices, weaken incentives for future production and push public institutions to buy and store surpluses at a time of constrained public finances. The cost of purchasing maize in 2026/27 was estimated at about ZMW17 billion (Food Reserve Agency, 2026), against ZMW2.1 billion budgeted, before transport, storage and interest on debt contracted at an average rate of 19%.

Holding costs accumulate quickly. On conservative assumptions informed by the World Bank (2021), storing an additional 1 million tonnes for six months at US$6 per tonne per month would cost about US$36 million, and a 5% storage loss (about 50,000 tonnes at US$260 per tonne) a further US$13 million: about US$49 million in all (IAPRI, 2026).

A similar pattern is observed for soybeans. Crushing capacity is estimated to be 1.3 million tonnes a year, but only about 49% is used (PPVC soybean report, 2025). In the model, higher yields alone push prices down. Farmers' margins fall even as yields rise, because demand stays the same. Margins recover only when processing, poultry feed demand and exports grow.

Beef, by contrast, has a clear price advantage but limited market capture. Farm-gate prices are estimated at US$2–2.5 a kilogram while retail prices in the DRC are US$4.82–7.72 a kilogram. Yet exports are only 2–3% of output, and most go informally to the DRC (PPVC beef report, 2025). Disease and weak traceability systems keep Zambian beef out of premium markets.

The objective is therefore not volume alone, but commercially viable production linked to competitive value chains: animal feed, milling, food processing, storage, transport, quality assurance and export logistics alongside primary production. The same logic applies to mining and energy, where output creates the largest domestic gains when it supports competitive local suppliers, skills, technology adoption and value addition. Research can help establish which products and markets are viable, what infrastructure is required, how trade policies affect competitiveness and where coordination failures deter private investment.

The World Bank's Country Climate and Development Report (April 2026) names skills for jobs in energy, agriculture and construction as one of four priorities (World Bank, 2026). The foresight evidence points the same way: the binding constraint is the capacity to adapt, and that capacity sits in people and research. Zambia must plan production, infrastructure, skills and market development as one system; expanding supply without the capacity to absorb and transform it risks weakening the very incentives the targets are meant to strengthen.

3. ECONOMIC EVIDENCE

Fiscal space is limited and public debt is high, so the targets can mainly be met through gains in productivity and value addition rather than through additional public spending or simple expansion of inputs.

3.1 Growth ambitions and calculated delivery

The Government has spoken of annual growth of 7% to 10% (Cabinet Office, 2026), while the International Monetary Fund (IMF) projects growth of 5.8% in 2026 and 6.0% in 2027, easing to 5.3% in 2031 (IMF, 2026; Figure 3). Both are well below the 14.9% a year required to double real output (Section 1). The ambition remains relevant, but it must be distinguished from a credible delivery pathway.

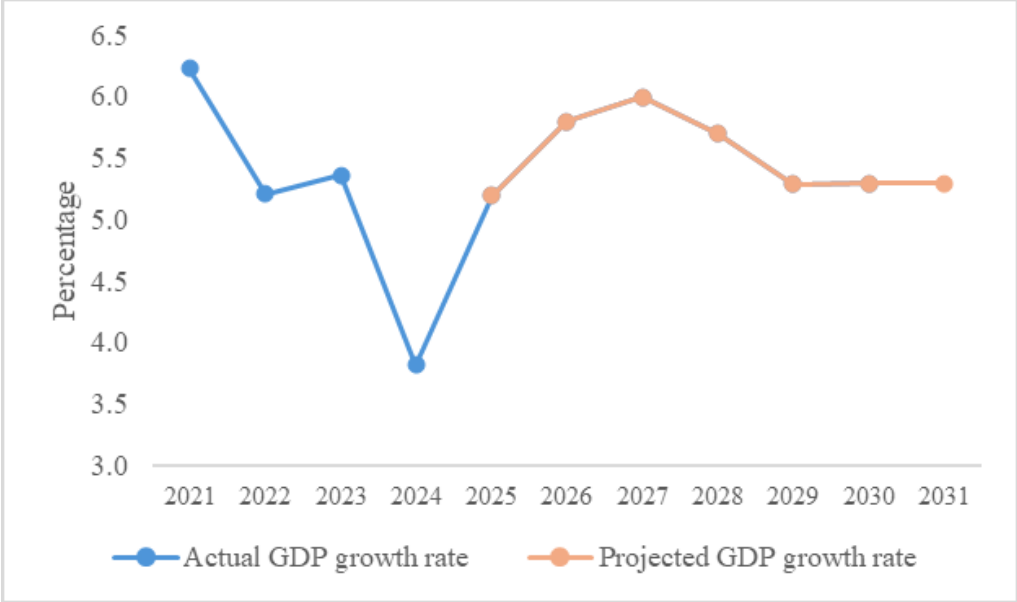


Figure 3: Zambia GDP growth rate, 2021-2031
Source: IMF (2026)

Policymakers should therefore distinguish the desired outcome from the baseline trajectory and from the additional productivity growth needed to close the gap. A credible delivery framework should identify which sectors can contribute most to growth, what productivity improvements are plausible within the period, which investments have the highest returns and what policy changes are needed to unlock them.

Recent experience illustrates the point. The World Bank's Country Economic Memorandum shows that GDP per worker rose by about 3.7% a year during the growth acceleration of the 2000s but fell by about 0.4% a year between 2011 and 2019, with labour-productivity growth positive in fewer than half of those years despite a public investment boom (World Bank, 2024). Growth accounting based on Penn World Table and Conference Board data indicates that GDP growth over the decade was driven almost entirely by factor accumulation, namely physical capital investment and labour-force growth of more than 3% a year, while the contribution of total factor productivity (TFP), the efficiency with which inputs are combined, turned flat to slightly negative. Public capital expenditure rose from 3.4% to 9.4% of GDP between 2011 and 2019 without a corresponding gain in productivity. Over the longer term, TFP accounted for only about 5.7% of growth in 1970–2013 (Mulungu & Ng'ombe, 2017).

Agriculture follows the same pattern. Estimates by the United States Department of Agriculture's Economic Research Service indicate trend agricultural TFP growth of only about 0.1% a year in 2011–2023, compared with about 1.0% globally and 0.9% in Southern Africa. Between 2001 and 2023, agricultural output grew by about 5.1% a year, but TFP accounted for only about one-fifth of that growth; the remainder came from expanded land, labour and purchased inputs, notably fertiliser (USDA ERS, 2026; authors' calculations). A shift to productivity-led growth is therefore required, and its principal sources, namely technology, management, skills, research, extension and functioning markets, are those that education and research systems supply.

Overall, the evidence above shows why higher education and research matter: these questions cannot be resolved by target setting alone, and they require economic modelling, sector studies, evaluation and continuous analysis of implementation.

3.2 Fiscal constraints and effective investment

Public spending alone cannot finance the transformation. Public debt was expected to fall to about 91.9% of GDP in 2025, but the IMF still rates Zambia at high risk of debt distress (IMF, 2026), and the power target alone is costed at about US$11 billion (Industrial Info, 2026).

The challenge is not simply to spend more, but to raise the economic and social return on every kwacha invested, through stronger project appraisal, cost-benefit analysis, procurement transparency and evaluation, and a clearer distinction between investments that build productive capacity and spending with short-lived gains. Universities and independent policy institutes can support better decisions on infrastructure sequencing, energy choices, agricultural support, industrial incentives and skills, and assess whether interventions reach their intended beneficiaries.

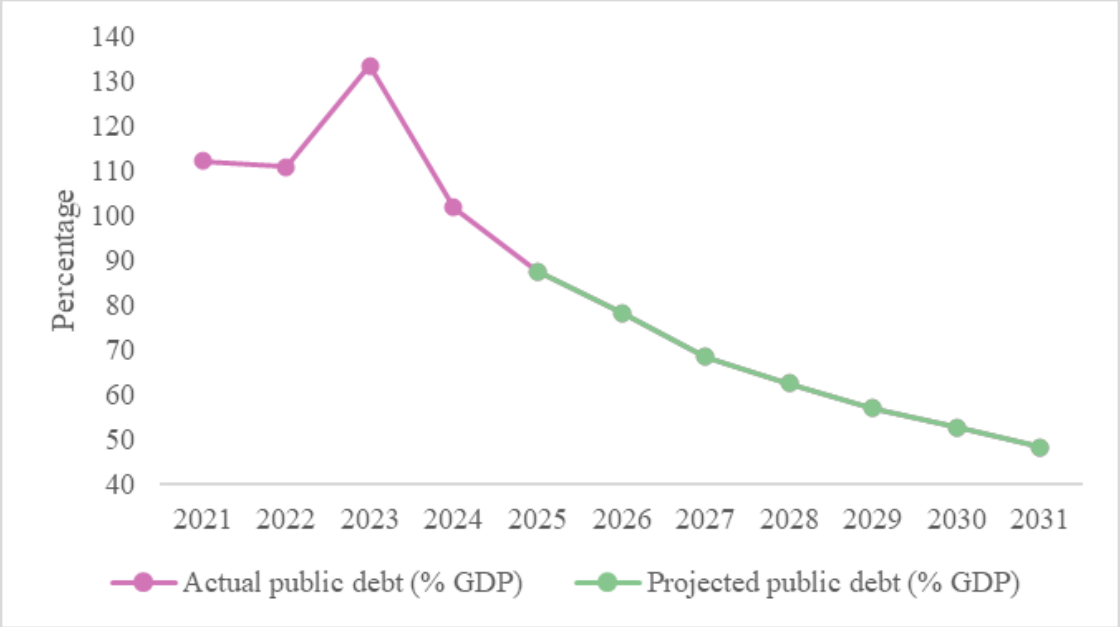


Figure 4: Zambia's Public Debt, 2021-2031
Source: IMF (2026)

Private investment will also be essential, and depends on predictable rules, credible institutions, infrastructure, finance and confidence in markets, especially for long-payback investments in energy, irrigation, manufacturing and research.

3.3 Agricultural productivity and structural transformation

Agriculture illustrates the difference between expanding production and improving productivity. Five-year average maize yields are about 1.95 tonnes per hectare (ZamStats), against a potential of 12.6 tonnes per hectare. Only 15% of arable land is cultivated, only 0.2% of smallholders own a tractor, and about 85% of agricultural finance goes to large commercial farms (Teschemacher, 2024). Realised productivity depends on soils, rainfall, seed quality, input access, management, labour, finance and market access.

It is useful to distinguish three measures of productivity, because each points to different policies. Land productivity (yield per hectare) responds to seed, soil fertility, water and agronomy. Labour productivity is weaker still: agriculture provides about 28% of employment but only about 4% of GDP (Labour Force Survey, 2024; ZambiaInvest, 2026), implying output per agricultural worker of roughly one-seventh of the national average; it rises with skills, mechanisation services and the movement of workers into higher-value activities. TFP rises with research,

extension, education, infrastructure and markets. Expanding the cultivated area or the number of farmers raises output, but not productivity.

World Bank analysis confirms the extent of the decline. Value added in agriculture, forestry and fishing did not grow between 2001 and 2022, unlike in every peer country, and value added per agricultural worker fell by almost 50% (World Bank, 2024). Maize yields rose from 1.38 tonnes per hectare in 2010 to 3 tonnes in 2014 but fell to 1.8 tonnes in 2022, despite wider use of fertiliser and improved seed; on degraded and acidified soils, an additional kilogram of fertiliser yields between zero and 7 kilograms of maize. Output growth has therefore relied on land expansion, accelerating deforestation, while more than 80% of the Ministry of Agriculture's budget has been allocated to the Farmer Input Subsidy Programme and the Food Reserve Agency rather than to research, extension, irrigation and soil management. Formal commercial farms are the exception: their labour productivity rose steadily between 2014 and 2021.

In terms of agricultural TFP, the TFP index generally increased over the 2016–2025 period, rising from 1.04 in 2016 to 1.09 in 2025 (Figure 5). The index recorded modest fluctuations over the period, with a gradual upward trend and a peak of 1.11 in 2024, before declining slightly in 2025. Overall, this suggests an improvement in agricultural productivity over the decade, although the slight decline in the final year indicates some moderation in productivity performance.

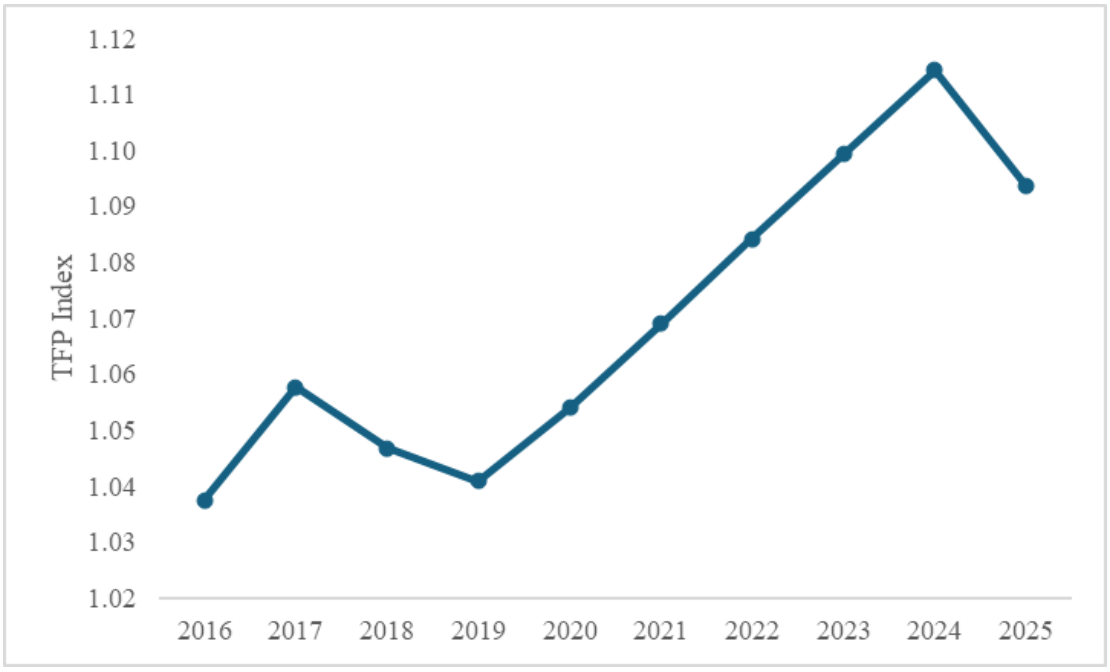


Figure 5: TFP Index (2016-2025)
Source: Mutale, B. (2026)

Agricultural output growth in Zambia averaged 4.73% a year over 2001-2025, with contributions from both input accumulation and improvements in TFP. Labour was the largest individual input contributor (1.06 percentage points), followed by fertiliser (0.85), animal feed (0.78), livestock (0.40) and land (0.35). Machinery made a relatively small contribution. TFP contributed 1.15 percentage points, about one-quarter of the total, highlighting the importance of productivity improvements beyond the increased use of conventional agricultural inputs (Figure 6).

Overall, the results suggest that Zambia's

agricultural growth has been driven mainly by increased input use, with TFP contributing about one-quarter of output growth. This is broadly consistent with the USDA ERS finding that TFP accounted for about one-fifth of growth; the two series differ in period and method, so their TFP trends are not directly comparable.

The policy response is to identify the constraints that most limit productivity in each farming system and to develop solutions that farmers can adopt profitably: adaptive research, stronger extension, better seed and input markets, mechanisation services, irrigation, soil management, affordable finance and links to processors. Distribution also matters: if gains accrue mainly to larger producers, output may rise without broad-based improvements in rural incomes and employment. The opportunity, therefore, is to transform agriculture into a more productive, commercially connected and knowledge-intensive sector, raising output per worker on the farm while developing processing, logistics, input supply and agricultural services beyond it.

3.4 Research, innovation and the skills constraint

Zambia's capacity to deliver its production targets depends on the scale and quality of its knowledge system: the relevance of research questions, the strength of university–industry partnerships, technical infrastructure, the ability to translate findings into practice and policy, and the money committed to research.

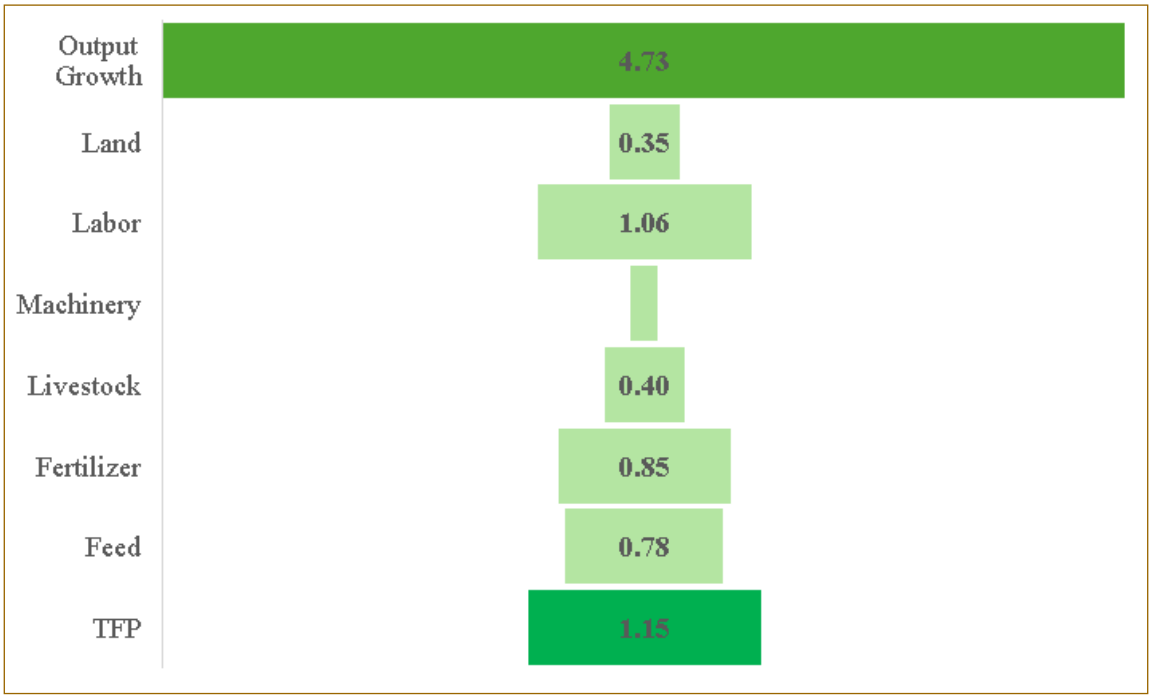


Figure 6: Input Contributions to Agricultural Output Growth (Annual Average %, 2001–2025)
Source: Mutale B. (2026)

The evidence points to a thin and ageing science base. In 2014, the latest year for which comparable data are available, Zambia had about 246 full-time equivalent (FTE) agricultural researchers, fewer than Mozambique (308) and more than Zimbabwe (209) and Malawi (158) (ASTI, 2016). Only 14% (about 35 FTEs) held a PhD, and more than 40% of PhD-qualified researchers were in their 50s and 60s. The Zambia Agriculture Research Institute (ZARI) employed about 60% of all FTEs, while universities accounted for only 51 FTEs (21%) but held most of the PhDs (22, against 9 at ZARI). Women made up 28% of researchers. Spending grew by 70% between 2008 and 2014, but mainly through a World Bank loan and donor funding while government support declined, and stood at 0.51% of agricultural GDP, half the African Union's 1% minimum (ASTI, 2016).

By 2025, agricultural research expenditure as a proportion of GDP is estimated to have declined to less than 0.1% (AgIncentives, 2026).

Relative to population, this amounts to roughly 16 FTE agricultural researchers per million people in 2014, and closer to 11 per million today if numbers have not grown. A science base of this size is insufficient to generate the varieties, animal-health systems, irrigation solutions and market evidence that the production targets require (see Proposition 2).

Education links to productivity through three channels. Better-educated workers are more productive in their current jobs; they adopt new technologies faster, which raises TFP; and the education system supplies the scientists, engineers and technicians who generate and adapt those technologies. The pipeline is weak at every stage: tertiary enrolment was 20.4% in 2022, only 9.7% of pupils reached minimum reading proficiency at the end of primary school in 2023, and about 18% of employed people hold a tertiary qualification (Association for the Development of Education in Africa, 2025). Education policies and investments should therefore be judged by their contribution to labour productivity and to the economy's capacity to absorb technology and should be connected in one skills strategy from foundational learning through universities, TVET, workplace training and continuing professional development.

The Grow Zambia targets should be translated into occupational requirements: electrical engineers, technicians and grid and renewable-energy specialists for power; agronomists, veterinarians, irrigation specialists, agricultural economists and food scientists for agriculture; and engineering, quality-assurance, logistics and management skills for industry.

3.5 From output to domestic value creation

Zambia's agro-industrial base is large within manufacturing but small in the economy, and it has grown with the economy rather than ahead of it. Manufacturing contributed 8.75% of GDP in 2025, and food, beverages and tobacco accounted for 36.2% of it (ZMW 22.95bn), which grew 7.7% in real terms (ZambiaInvest, 2026, drawing on ZamStats national accounts). That share is similar to a decade earlier, when food, beverages and tobacco made up 32–37% of manufacturing value added in 2012–15 (UNIDO, 2019). Manufacturing's share of GDP has also barely moved: it was 7.1% in 2010 (Developing Value Chains with Local Content Utilisation, n.d.), against an official ambition of 15% by 2027 (ITC, n.d.). Real growth has been uneven: manufacturing grew 13.1% in 2021, 4.7% in 2022, 4.5% in 2023 and 2.3% in 2024 (ZamStats, 2025). The potential therefore lies less in the size of the base than in whether it can grow faster than the economy.

The growth that has occurred sits in a narrow set of chains built on domestic crops. Zambia has revealed comparative advantage in cereals and milling products, soy products, animal feed, tobacco, non-alcoholic beverages and sugar (Chitonge, 2024). The clearest growth pole is the soybean–maize–feed–poultry complex. The poultry industry tripled in five years, driven by a growing middle class, urbanisation and protective policy, with the feed industry growing in response (IAPRI, 2017). More recently, soybean and oilcake exports have overtaken sugar exports (Nsomba & Roberts, 2023). This chain is the best candidate for targeting because growth is led by domestic demand, and local firms already operate at several stages.

Growth in that chain can still leak abroad. Oilcake is a lightly processed export, and the same study identifies poultry, fish and vegetable oil as the products where import dependence could be reduced (Nsomba & Roberts, 2023). This is where retention becomes the question.

Higher production does not guarantee that the benefits of growth stay in Zambia. Who owns milling, storage, seed and logistics assets (Farm Future Africa, 2026), who supplies inputs and services, and where processing takes place decide how much of the growth is retained. Value

addition is a capability question as much as an investment question.

For agricultural commodities, high transport and storage costs or limited processing capacity can lower producer prices and make domestic processing uncompetitive. In mining, higher output may raise export earnings without building domestic supply chains unless local firms can meet price, quality and scale requirements; in tourism, more arrivals spread gains more widely when Zambian enterprises supply accommodation, food, transport and services competitively.

Local value addition must be commercially viable and competitive; poorly designed localisation rules can raise costs without building lasting capabilities. The objective should be to identify where Zambia has, or could realistically develop, a competitive advantage and to remove the infrastructure, skills, finance, regulatory and technological constraints that keep domestic firms out. Research can estimate market size, unit costs, supplier readiness and the distribution of benefits, and so separate opportunities with a credible path to competitiveness from those that would need permanent protection. In the soybean–feed–poultry chain, the priority estimates are the cost gap between local and imported poultry and vegetable oil, crushing and feed capacity, and who owns each stage.

3.6 Firm growth, labour productivity and total factor productivity

Firm dynamics are central to the relationship between labour productivity and TFP, because labour productivity rises not only through capital deepening, skills and efficiency within firms but also as workers move into more productive firms. In Zambia these mechanisms are weak. Enterprise Survey data show stagnant median real sales growth among formal firms in 2007–2013 and widespread declines in 2013–2019, with productivity gains arising mainly within sectors rather than from structural reallocation (Gurara, 2025). Tax records for more than 5,000 formal firms show that labour productivity fell between 2014 and 2021, driven by declines within firms in manufacturing, construction, trade, transport and financial services, while real wages outside agriculture fell by 40–50% (World Bank, 2024). Firm growth is constrained by limited access to finance (only about 10% of formal firms hold a loan or line of credit), unreliable electricity and informal competition: access to an overdraft is associated with annual sales growth about 4.4 percentage points higher, and each additional monthly power outage with growth about 0.18 points lower (Gurara, 2025). New-firm entry is also low, at about 1.6 formal registrations per 1,000 working-age adults a year, against five to seven in upper-middle- and high-income economies.

Weak firm capabilities provide the most direct link to higher education. Only about 10% of formal firms use technology licensed from foreign companies, compared with 21% in Zimbabwe; few hold internationally recognised quality certification; in-service training is limited; and, according to the Human Capital Index, workers reach only about 60% of their potential productivity (World Bank, 2024). Universities and TVET institutions can therefore contribute to TFP growth not only through research but by supplying managers, technicians and entrepreneurs able to adopt technology and meet quality standards, by incubating growth-oriented enterprises, and by connecting those enterprises to finance and markets. These contributions complement, rather than substitute for, reforms in finance, electricity supply and business regulation.

4. POLICY COHERENCE

Zambia's development frameworks broadly emphasise economic transformation, employment, human capital, sustainability and technological advancement, but none yet sets research, or skills targets to match the production targets. Tables 3 to 5 include education policies alongside development plans because the quality of the workforce they produce shapes labour productivity and the economy's capacity to absorb new technology.

Table 3: National frameworks links to higher education and research

Framework	Period	What it commits to	Link to higher education and research
A. National frameworks			
Grow Zambia Agenda	2026–2031	Eight production targets; more than doubling the economy; decentralization	Deeper investment in education and skills is pledged, with no stated research or skills target
Vision 2030	2006–2030	Long-term goal: a prosperous middle-income nation by 2030, delivered through successive five-year national development plans	Aims for lifelong education and training for all, and science and technology that drive growth; names weak technical training and very low research spending (about 0.02% of GDP in 1990–2003) as problems
Eighth National Development Plan[1]	2022–2026	Four pillars: economic transformation and job creation; human and social development; environmental sustainability; good governance environment	Names weak education outcomes and youth unemployment as problems to solve
Comprehensive Agriculture Transformation Support Programme (CATSP)	2024-2033	It aims to transform Zambia's agricultural sector, accelerate economic growth, create jobs, boost exports, and end hunger and malnutrition	Among its seven pillars is "Research and Production Support", a strategic priority to upgrade infrastructure and increase public-private funding for scientific innovation.
A. Regional Frameworks			
Agenda 2063 (African Union)	2013–2063; current 10-year plan 2024–2033	Africa's 50-year development plan, delivered through 10-year implementation plans	Calls for well-educated citizens and a skills revolution built on science, technology and innovation
Science, Technology and Innovation Strategy for Africa (STISA-2034)	To 2034	Six priority sectors, including agriculture, energy and ICT; research spending of 1–2% of GDP; a US$6.8 billion implementation plan	Must be written into national plans and budgets to take effect

[1] The Ninth National Development Plan (9NDP), which succeeds the 8NDP is currently in preparation. It commits to the final medium-term plan under Vision 2030; themes include diversification, the youthful population and technological advancement. Consultations ran through 2026, with approval by Parliament expected later in the year.

Continental Education Strategy for Africa	2025–2034	A decade of accelerated education and skills development	Strategic Area 4: Higher Education and TVET, which focuses on expanding quality access, strengthening industry linkages, and strongly incentivizing research and innovation—particularly in STEAM (Science, Technology, Engineering, Arts, and Mathematics) fields
CAADP Kampala Declaration	2026–2035	Agrifood output up 45%; post-harvest loss halved; intra-African agrifood trade tripled; US$100 billion mobilised; 10% of public spending	Calls for inclusive agricultural research and extension
C. Global Frameworks			
Sustainable Development Goal 4 (UN 2030 Agenda)	2015–2030	Inclusive, quality education and lifelong learning for all	Target 4.3 calls for equal access to affordable technical, vocational and university education; target 4.b calls for more scholarships

Source (Author's Compilation, 2026)

4.1 The Eighth National Development Plan

The Eighth National Development Plan (2022–2026) set out four pillars: economic transformation and job creation, human and social development, environmental sustainability, and good governance. The transition to the Ninth National Development Plan (9NDP) is an opportunity to assess which interventions produced measurable results and why others did not, distinguishing failures of design, financing, implementation capacity, external shocks and unrealistic assumptions, and to scale up programmes that worked rather than start new ones.

4.2 The Ninth National Development Plan and the Grow Zambia Agenda

The Grow Zambia Agenda sets priority outcomes for 2026–2031; the 9NDP should set out the policy instruments, financing, institutional responsibilities, human capital requirements and monitoring systems needed to achieve them.

For each major target, the 9NDP should identify the principal constraints, required investments, research priorities, skills needs, implementation agencies and measurable indicators, costed and assigned to accountable institutions, so that planning moves from a list of desired outcomes to an integrated delivery framework.

4.3 Comprehensive Agriculture Transformation Support Programme

The Comprehensive Agriculture Transformation Support Programme (CATSP, 2024–2033) aims to move Zambia's agriculture from subsistence to a high-yield, commercial and resilient sector. For each crop, livestock or fishery target, the higher education and research sectors could identify the principal scientific constraints, laboratory investments, research priorities and skills needs, the agencies to work with and measurable indicators.

4.3 Comprehensive Agriculture Transformation Support Programme

The Comprehensive Agriculture Transformation Support Programme (CATSP, 2024–2033) aims to move Zambia's agriculture from subsistence to a high-yield, commercial and resilient sector. For each crop, livestock or fishery target, the higher education and research sectors could identify the principal scientific constraints, laboratory investments, research priorities and skills needs, the agencies to work with and measurable indicators.

4.4 Continental commitments on agriculture, science and innovation

At continental level, the CAADP Kampala Declaration sets commitments on agrifood production, post-harvest losses, intra-African trade, investment and public spending; STISA-2034 emphasises research and innovation; and the continental education and TVET strategies link skills to productive employment.

These commitments provide a useful basis, but alignment on paper does not guarantee delivery. Continental objectives must be translated into Zambia-specific priorities, realistic financing, institutional responsibilities and measurable results, including domestic investment in agricultural research, extension, market infrastructure and value addition. The test is whether these priorities shape national budgets, institutional mandates and implementation decisions.

4.5 Closing the research and skills gap in development planning

The trajectory for research and skills should be evidence-based, fiscally credible and transparently measured, and the frameworks should state how research will enter policy and commercial decisions: through competitive research funding, joint projects with industry, innovation grants, technology-adoption programmes and regular dialogue between researchers and implementing agencies.

5. WHAT HIGHER EDUCATION MUST DELIVER

If productivity is central to the Grow Zambia Agenda, higher education should be judged by its contribution to the three measures of productivity set out in Section 3.3, land productivity, labour productivity and total factor productivity, as well as to innovation and public problem-solving. Six contributions are particularly important.

5.1 Develop skills linked to actual economic requirements

Universities and TVET institutions should work with government, employers and industry associations to translate the Grow Zambia targets into competency requirements, through labour-market assessments, curriculum review, practical training and stronger graduate placement, while retaining their academic independence.

5.2 Plan the workforce targets need

Government, universities and TVET institutions should count the skills needed (e.g., the number of agronomists, veterinarians, engineers and technicians the targets require by 2031) and commission universities and TVET institutes to supply them.

5.3 Produce research that resolves implementation constraints

Research priorities should be informed by the constraints that threaten delivery. These may include crop productivity, irrigation economics, climate-resilient farming, energy-system reliability, industrial competitiveness, export-market access, logistics, financing constraints and the employment effects of policy interventions.

Research programmes should specify the problem, the intended users, the evidence required and the route by which findings will influence decisions or practice, strengthening the link to national priorities without reducing universities to short-term consultancy.

5.4 Strengthen innovation and technology adoption

Research creates value when it is translated into improved products, processes, policies and services. Universities and research institutes should therefore work with firms, farmers' organisations, public agencies and entrepreneurs at every stage of innovation: generating knowledge, testing and adapting technologies, financing adoption and bringing viable products to market.

5.5 Improve the use of evidence in public policy

Government needs timely, credible and independent evidence to make decisions. Research institutions can help by assessing policy options, identifying distributional consequences, evaluating programme effectiveness and monitoring whether implementation is producing intended outcomes.

A particular opportunity is an annual evidence review of the Grow Zambia Agenda, prepared by universities and research institutes with transparent indicators, documenting both progress and implementation constraints.

5.6 Strengthen accountability for results

Higher education institutions should be partners in measuring delivery, not only participants in consultations. An independent monitoring system could track the eight production targets alongside yields, productivity, value addition, employment, research investment, skills supply and climate resilience.

Counting training programmes or publications does not show that productivity has improved. Monitoring should examine whether research is used, whether graduates enter relevant occupations, whether technologies are adopted and whether yields, output per worker and TFP are rising, giving government, researchers, the private sector and development partners a shared factual basis for annual policy adjustment.

6. FROM AMBITION TO DELIVERY: PROPOSITIONS FOR ACTION

The analysis points to five propositions that connect Zambia's production ambitions with the research, skills, financing and institutional capabilities needed to realise them, alongside the markets, resilience measures and independent monitoring needed to sustain progress.

Proposition 1: Pair every major production target with a research, innovation and skills plan.

Each target should have an assessment of the technologies, skills, infrastructure, markets and institutions required to deliver it, starting with soya, wheat and beef, where the gap is widest, subject to verification of their baselines.

Proposition 2: Make research investment a measurable component of the 9NDP.

Zambia should establish a current national baseline for research and development expenditure and research capacity, including the number, qualifications and age profile of FTE researchers, and adopt a costed financing pathway towards its continental commitments, with targets to increase FTE researchers and double the share holding PhDs. Progress should be measured not only by spending, but also by research quality, use and outcomes, including productivity growth.

Proposition 3: Plan the workforce required by the economy Zambia intends to build.

Government should commission a forward-looking skills assessment of the priority sectors and occupations implied by the Grow Zambia targets, and judge education investments by their contribution to labour productivity. Universities, TVET institutions, employers and professional bodies should use this assessment to inform enrolment planning, curricula, technical training and workplace partnerships.

Proposition 4: Establish independent annual monitoring of the Grow Zambia Agenda.
Universities and research institutes should explore a collaborative annual progress review based on transparent methods, published data and clearly defined indicators. The review should assess both production targets and the productivity, employment, market and research capabilities underpinning them.

Proposition 5: Design for resilience and value addition from the outset.
Production programmes should build in climate-risk management, storage, processing, energy reliability, trade and market development from the start, so that output is not raised without viable markets or protection against climate shocks. This includes stable trade rules: ad hoc export bans can erase the gains from other reforms (PPVC soybean report, 2025).

The propositions reinforce one another: research without financing will not scale, skills without opportunities go unused, production without markets undermines incentives, and targets without monitoring cannot be corrected.

7. CONCLUSION

The Grow Zambia Agenda sets a demanding direction for Zambia's economy. Its success will depend on the capabilities Zambia builds, the quality of its institutions and the effectiveness with which public and private investment is translated into measurable outcomes.

Foresight shows that demographic change, climate risk and market constraints will shape the country's development trajectory. Economic analysis shows that the required pace of growth cannot come from adding inputs alone: with limited fiscal space, it must come from higher land, labour and total factor productivity, which in turn depend on skills, research and a stronger science base. Policy analysis reveals broad alignment across national and continental frameworks, but no research or skills targets to match the production targets.

The main economic risk is that the targets will be treated as separate ambitions rather than as a connected system. Production requires power, skills, finance and buyers; investment requires predictable rules and credible returns; and the gains from growth depend on productivity, employment and domestic participation in value chains. These dependencies should shape sequencing and public investment decisions.

Universities and TVET institutions can develop the workforce, generate knowledge, test technologies, analyse markets and evaluate policy, but they cannot on their own resolve weak demand, poor infrastructure, inadequate finance or unclear accountability. The 9NDP offers a timely opportunity to make research and skills essential components of economic delivery, with clear targets, financing, responsibilities and accountability.
The ultimate test of the Grow Zambia Agenda is not whether Zambia can state ambitious targets, but whether it can build the capabilities to achieve them, adapt when conditions change and turn growth into productive employment, stronger domestic enterprises and better living standards. Moving from ambition to delivery means investing in the people, knowledge, institutions and evidence that raise productivity.

REFERENCES

ACAPS. (2025, January 16). Zambia: Update on the impact of drought. https://www.acaps.org/fileadmin/Data_Product/Main_media/20250116_ACAPS_Zambia_-_Update_on_the_impact_of_drought_.pdf

African Union Commission. (2015). Agenda 2063: The Africa we want (Framework document). African Union. https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf

ASTI / IFPRI and Zambia Agriculture Research Institute (2016). Zambia: ASTI–ZARI Country Factsheet; agricultural research spending data refer to 2014. https://www.asti.cgiar.org/publications/zambia-factsheet-2017

Cabinet Office (2026, October 13). SC Demands Results as Government Eyes 7 to 10 Percent Annual Growth Rate. https://www.cabinet.gov.zm/?p=11839

Chitonge, H. (2024). Agro-processing industries in the Zambian economy (PRISM Working Paper 2024/1). University of Cape Town. https://commerce.uct.ac.za/sites/default/files/media/documents/commerce_uct_ac_za/869/prism-working-paper-2024-1-chitonge.pdf

Commonwealth of Learning. (2026, July). Open TVET and flexible skills systems: Lessons from Zambia. https://www.col.org/news/open-tvet-and-flexible-skills-systems-lessons-from-zambia/

Developing Value Chains with Local Content Utilisation (n.d.). https://www.academia.edu/84781086/Developing_Value_Chains_with_Local_Content_Utilisation

Farm Future Africa. (6 October 2026). Zambia's 10 million-tonne maize dream and the battle for value. https://farmfutureafrica.co.zw/zambias-10-million-tonne-maize-dream-and-the-battle-for-value/

FEWS NET. (2026a, May 28). Zambia context report. Famine Early Warning Systems Network. https://fews.net/southern-africa/zambia/special-report/may-2026

FEWS NET. (2026b, June). Stressed (IPC Phase 2) expected in the south and west due to below-average harvest: Zambia food security outlook, June 2026–January 2027. Famine Early Warning Systems Network. https://fews.net/southern-africa/zambia/food-security-outlook/june-2026

Government of the Republic of Zambia. (2006). Vision 2030: A prosperous middle-income nation by 2030. Ministry of Finance and National Planning. https://www.mofnp.gov.zm/?wpdmpro=the-vision-2030

Gurara, D. (2025). Firm growth in Zambia. IMF Selected Issues Paper SIP/2025/126. Washington, DC: International Monetary Fund.

Higher Education Act, 2013 (Zambia). https://www.parliament.gov.zm/sites/default/files/documents/acts/The%20Higher%20Education%20Act%2C%202013.pdf

Higher Education Loans and Scholarships Act, No. 31 of 2016 (Zambia). https://www.zambialaws.com/h/758-higher-education-loans-and-scholarships-act

Higher Education (Amendment) Act of 2021 (Zambia). https://www.zambialaws.com/consolidated-statutes/principal-legislation/higher-education-act

Indaba Agricultural Policy Research Institute (IAPRI) (2017). Analysis of the animal feed to poultry value chain in Zambia (WIDER Working Paper 2017/59). UNU-WIDER. https://www.wider.unu.edu/sites/default/files/wp2017-59.pdf

Indaba Agricultural Policy Research Institute (IAPRI) (2026 March), Policy Brief. Maize Market Performance in the 2025/2026 Season and Lessons for the Future.

Indaba Agricultural Policy Research Institute (IAPRI), Africa Network of Agricultural Policy Research Institutes (ANAPRI), Bureau for Food and Agricultural Policy (BFAP), and International Food Policy Research Institute (IFPRI). (2025). Prioritizing Policies for Driving Inclusive Agricultural Transformation: A Case of Zambia Beef Deep Dive Value Chain. Draft Report. Africa Network of Agricultural Policy Research Institutes (ANAPRI). Lusaka, Zambia.

Indaba Agricultural Policy Research Institute (IAPRI), Africa Network of Agricultural Policy Research Institutes (ANAPRI), Bureau for Food and Agricultural Policy (BFAP), and International Food Policy Research Institute (IFPRI). (2025). Prioritizing Policies for Driving Inclusive Agricultural

Transformation: A Case of Zambia's Soybean Value Chain. Africa Network of Agricultural Policy Research Institutes (ANAPRI). Lusaka, Zambia.

Integrated Food Security Phase Classification (IPC). (2024, October 2). Zambia: Acute food insecurity situation for April–September 2024 and projection for October 2024–March 2025.https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1157977/?iso3=ZMB

International Monetary Fund (IMF), African Department. (2026). Zambia: Sixth review under the Extended Credit Facility arrangement, request for a waiver of nonobservance of a quantitative performance criterion, and financing assurances review—Press release; staff report; and statement by the Executive Director for Zambia. IMF Staff Country Reports, 2026(021). https://doi.org/10.5089/9798229034838.002.A001

International Monetary Fund (IMF), Zambia country data / World Economic Outlook (2026, April). https://www.imf.org/external/datamapper/profile/ZMB

International Monetary Fund (IMF) (2026, January 27). Executive Board Completes Sixth Review Under the Extended Credit Facility with Zambia. https://www.imf.org/en/news/articles/2026/01/27/pr-26024-zambia-imf-executive-board-completes-sixth-review-under-the-extended-credit-facility

ITC (n.d.). Zambia manufacturing value chain brief. https://intracen.org/fr/media/10887

Lusaka Times. (2026, May 30). Launch of the 2025 National Education Policy. https://www.lusakatimes.com/?p=518533

Ministry of Technology and Science. (2019). National higher education policy. Government of the Republic of Zambia. https://www.mots.gov.zm/wp-content/uploads/2022/06/NATIONAL-HIGHER-EDUCATION-POLICY.pdf

Ministry of Technology and Science. (2025, September). Launch of the revised TEVETA Strategic Plan (2025–2027). https://www.mots.gov.zm/?p=6062

Mulungu, K., & Ng'ombe, J. N. (2017). Sources of economic growth in Zambia, 1970–2013: A growth accounting approach. Economies. 5(2), 15. https://doi.org/10.3390/economies5020015

Mutale, B. (2026). Agricultural total factor productivity growth in Southern Africa: Decomposition, determinants and pathways to food security. ResearchGate. https://www.researchgate.net/publication/413846859_Agricultural_total_factor_productivity_growth_in_Southern_Africa_decomposition_determinants_and_pathways_to_food_security

National Science and Technology Council. (2025, July 21). Transformative Science, Technology and Innovation (STI) policy and implementation plan launched. https://nstc.org.zm/index.php/2025/07/21/transformative-science-technology-and-innovation-sti-policy-and-implementation-plan-launched/

Nsomba, G., & Roberts, S. (2023). Building competitive agricultural markets for Zambia: Unlocking export potential. International Growth Centre. https://www.theigc.org/sites/default/files/2023-11/Nsomba%20and%20Roberts%20Final%20report%20November%202023.pdf

Optimist Daily. (2026, June 19). A new law in Zambia makes free education much harder for future governments to take away. https://www.optimistdaily.com/2026/06/a-new-law-in-zambia-makes-free-education-much-harder-for-future-governments-to-take-away/

Phiri, K., & Clayton, F. (2024, November 21). As drought shrivels hydro, this African nation pivots to solar. Yale Environment 360. https://e360.yale.edu/features/zambia-drought-hydro-solar-power

State House of Zambia (2026, October 9). HH Outlines 'Grow Zambia' Agenda: Targets

Double GDP Growth after $1.36b Eurobond Buyback. https://www.sh.gov.zm/hh-outlines-grow-zambia-agenda-targets-double-gdp-growth-after-1-36b-eurobond-buyback/

TechAfrica News. (2026, May 20). Zambia advances National Apprenticeship Programme to boost youth skills and employment. https://techafricanews.com/2026/05/20/zambia-advances-national-apprenticeship-programme-to-boost-youth-skills-and-employment/

Tembo, P., & Du Plessis, A. (2025). Strategies for sustained collaboration between Zambian TEVET institutions and industry: Policy recommendations. South African Journal of Higher Education, 39(6), 297–314. https://doi.org/10.20853/39-6-5975

Teschemacher, C. (2024, January 17). How to unlock Zambia's agricultural potential. International Growth Centre. https://www.theigc.org/blogs/how-unlock-zambias-agricultural-potential

United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development (A/RES/70/1). https://sdgs.un.org/2030agenda

United Nations Industrial Development Organization (UNIDO) (2019). Competitive Industrial Performance database, accessed via IndexMundi: https://www.indexmundi.com/facts/zambia/value-added-in-manufacturing

United States Department of Agriculture, Economic Research Service (USDA ERS). (2026). International agricultural productivity: TFP indices and components for countries, regions and the world, 1961–2023. Washington, DC: USDA ERS. https://www.ers.usda.gov/data-products/international-agricultural-productivity

World Bank Group. (2021). The role of strategic grain reserves in enhancing food security in Zambia and Zimbabwe. Washington DC: World Bank.

World Bank. (2024). Zambia Country Economic Memorandum: Unlocking productivity and economic transformation for better jobs. Washington, DC: World Bank.

Zambia Statistics Agency (2025). The Monthly, Vol. 270, September 2025. https://www.zamstats.gov.zm/wp-content/uploads/2025/09/Vol-270-of-2025-The-Monthly-September.pdf

Zambia Statistics Agency. (2025). 2022 Census national analytical report. Lusaka, Zambia: Zambia Statistics Agency.

Zambia Statistics Agency. (2026). 2022 Census of Population and Housing: Population and demographic projections, 2023–2047: National report. Lusaka, Zambia: Zambia Statistics Agency. https://www.zamstats.gov.zm/wp-content/uploads/2026/04/National-Projections-2023-2047-1.pdf

Zambia National Broadcasting Corporation (ZNBC) (2026, September 1). HH Unveils Grow Zambia Agenda Development Programme. https://znbc.co.zm/?p=15271

ZambiaInvest. (2026). Zambia agriculture – GDP, crops, livestock 2026. https://www.zambiainvest.com/agriculture/

ZambiaInvest (2026). Zambia manufacturing sector 2026. https://www.zambiainvest.com/industry/