

**NAMIBIA**

# **NATIONAL POLICY INTERVENTIONS**

**A RAPID COST-BENEFIT ASSESSMENT**



Republic of Namibia  
**National Planning Commission**



**COPENHAGEN  
CONSENSUS  
CENTER**

# A NEW APPROACH TO PRIORITIZING FOR NAMIBIA

No nation, however rich, has enough resources to do everything. Hard choices must be made. Ultimately, the trade-off is the defining characteristic of politics: deciding where to spend extra resources first.

But some policies deliver large benefits for low costs, whereas others deliver little for high costs. Knowing which policies are most cost-effective can be incredibly helpful for more informed decision making.

Together with the National Planning Commission the Copenhagen Consensus think tank has done a rapid cost-benefit assessment of a number of key policy considerations for Namibia. These have been chosen from the Fifth National Development Plan (NDP 5) by the National Planning Commission.

Our analysis helps by showing which interventions would deliver the most social and economic benefits for every Namibian Dollar (NAD) spent. Although value-for-money is not the only relevant measure, it certainly is one important measure. Here, we report each intervention's likely economic and social return on investment and the benefit-cost ratio (BCR). A BCR of 15 would mean that a given intervention will deliver NAD 15 worth of social, economic, and environmental benefits for every NAD spent.

It highlights **EXCELLENT** (BCR over 15) or **GOOD** (BCR = 5 to 15) interventions with dark and light green. **FAIR** interventions deliver moderate returns (BCR = 1 to 5), and **POOR** interventions (BCR below 1) will likely generate fewer benefits than the cost, meaning cost recovery will not be possible within the national development strategy.

This Rapid Assessment is not a conclusion but rather an aid to begin an even more informed conversation of future priorities for Namibia.

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## KEY MESSAGES

Namibia, a southwestern African nation, has diverse landscapes, a rich cultural heritage, and a unique economic profile with a relatively stable and developed economy compared to many African counterparts. The country's economic landscape is characterized by a mix of traditional sectors such as agriculture, mining, and fishing and a growing focus on manufacturing, tourism, and services. One of Namibia's key economic pillars is the mining sector, particularly the extraction and export of minerals, including diamonds, uranium, and zinc. These resources have been significant drivers of economic growth and foreign exchange earnings for the country.

In addition to mining, Namibia has also emerged as a competitive player in the tourism industry. Its breathtaking landscapes, including the famous Namib Desert and Etosha National Park, enable the tourism sector to contribute significantly to the country's gross domestic product (GDP) and provide employment opportunities.

Namibia is characterized by a diverse population of ethnic groups, languages, and cultures, with an estimated population of around 2.5 million. Namibia is home to numerous ethnic groups, with the Ovambo, Herero, and Damara being some of the largest. Its population is known for its youthful composition, with a substantial percentage under 25 years old. While Namibia has made notable progress in improving human development indicators, such as education and healthcare, in recent years, disparities in access to quality education, healthcare, and economic opportunities persist, particularly between urban and rural areas.

Addressing inequalities and ensuring equitable development across all regions remains a key challenge on Namibia's path to greater prosperity and the well-being of its citizens. Our analysis helps by showing which interventions would deliver the most social and economic benefits for every Namibian Dollar (NAD) spent. Although value-for-money is not the only relevant measure, it certainly is one important measure. Here, we report each intervention's economic and social return on investment and the benefit-cost ratio (BCR). A BCR of 15 would mean that a given intervention will deliver NAD 15 worth of social, economic, and environmental benefits for every NAD spent.

We highlight **EXCELLENT** (BCR over 15) or **GOOD** (BCR = 5 to 15) interventions with dark and light green. **FAIR** interventions deliver moderate returns (BCR between 1 to 5), and

**POOR** interventions represent a waste of resources (BCR below 1) within the national development strategy document.

An overview of the intervention ratings is provided in Annex A-1, with a more detailed analysis of each intervention proposed in the Budget Strategy Framework following (see Annex A-2). Annex A-3 presents back-of-the-envelope estimates for five specific interventions in Namibia. An outline of the methodology behind the analysis is presented in Annex B.

It is important to note that these ratings were made following the rapid cost-benefit assessment methodology over approximately three months. Ratings were conducted at the intervention level based on academic evidence, economic theory, and previous cost-benefit literature. This exercise aims to highlight interventions that are likely highly cost-effective for prioritization. There was insufficient time to incorporate information from previous years' program evaluations. However, we argue that this should not change the ratings much because the variance in efficiency is much greater at the intervention level than at the implementation level. For example, in previous Copenhagen Consensus Center projects, the difference between the top 10% of interventions vs the median is around two orders of magnitude (100x), whereas variance in implementation efficiency for a given intervention might plausibly be +/- 50%.

Some policies not listed in the framework could be **EXCELLENT** for Namibia:

- **Increase the number of basic management units and active case finders for tuberculosis.**

The incidence of tuberculosis in Namibia was 457 cases per 100,000 people in 2021, with a case notification rate (CNR) of 487 per 100,000 and 60 people per 100,000 dying from the disease. Namibia was ranked fifth among countries with the highest global tuberculosis (TB) burden by the World Health Organisation (Amkongo et al. 2023). Globally, Laxminarayan et al. (2009) find that the benefit-cost ratio of a sustained, directly observed short treatment course strategy is 92 in 22 high TB-burden countries worldwide. Pretorius et al. (2023) undertook a cost-benefit analysis of increased spending on TB using impacts and costs drawn from the Global Plan to End Tuberculosis, 2023–2030. The analysis indicates that the return on TB spending is substantial, with a centrally estimated benefit-cost ratio (BCR) of 46, meaning every US\$ 1 invested in TB yields US\$ 46 in benefits. Alternative specifications using different baselines, interventions, cost profiles, and discount rates still yield robustly high BCRs from 28 to 84. This report also shows that TB investment would avert substantial mortality, estimated at 27.3 million

averted deaths over the 28 years between 2023 and 2050 inclusive: almost 1 million averted deaths per year on average. Interventions to address TB represent exceptional value-for-money.

The main costs are the costs of diagnosis and treatment, while the main benefits are reduced lives lost due to the disease. Although long-running (6 months), the treatment for TB is cheap and effective, with a 90%+ cure rate. It saves lives, and patients regain strength, reducing mortality and morbidity and increasing productivity and well-being. Early treatment also reduces the onward infection of other people, with reduced knock-on costs of treatment, mortality and morbidity. There is also the eventual reduction in public spending that will come with a decline in TB prevalence. Therefore, the underlying rationale for the rating is that TB control has a significant numerator and denominator effect in the BCR: It saves lives for relatively little cost AND reduces future transmission and public treatment costs.

- **Sexual reproductive health (SRH) and skills training for adolescent girls**

Namibia continues to face a significant challenge with teenage pregnancy. With a young population, the country has the highest adolescent birth rate of 82 births per 1,000 girls aged 15–19 years, double the global average of 44 (Namibia Statistics Agency (2014). Teenage pregnancy is one of the leading causes of girls dropping out of upper primary school and failing to graduate high school on time (Shiningayamwe, 2023). Evidence from Uganda shows that a combined programme delivering SRH and skills training specifically for adolescent girls reduced teenage pregnancies and lifted employment by 50%. Reducing total fertility rates has substantial long-term economic benefits in the form of demographic dividends. The BCR is estimated at ~20.

Below, in Annex 1, some of the best interventions identified for building a robust national economy and helping the country attain its long-term development vision are listed. These typically have a medium- to long-term focus. These interventions will deliver large social benefits for each NAD spent and should be prioritized by the policymakers.

# OVERVIEW OF INTERVENTION RATINGS

INTERVENTION	RATING
<i>RECOMMENDATIONS</i>	
Promote e-services and innovation by integrating information and communications technology (ICT) in all sectors	EXCELLENT
Standardize customs procedures with regional neighbors to facilitate trade	EXCELLENT
Improve learners' transition to higher education	EXCELLENT
Improve maternal and neonatal health	EXCELLENT
Strengthen material and technical base and improve the quality of primary healthcare	EXCELLENT
Increase the number of basic management units and active case finders for tuberculosis (TB)	EXCELLENT
Sexual reproductive health (SRH) and skills training for adolescent girls	EXCELLENT
Strengthen anti-corruption measures through e-government procurement	EXCELLENT
Strengthen corporate governance for public enterprises (PEs)	EXCELLENT
Regional agricultural research	EXCELLENT
Food fortification	GOOD to EXCELLENT



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Enhance the quality of teaching at the pre-primary level

**GOOD** to **EXCELLENT**

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Accelerate health infrastructure development and resource management (equipment, physical building, maintenance, pharmaceutical and finance)

**GOOD** to **EXCELLENT**

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Invest in Blue economy – enhance market access, marine spatial planning, and community-managed fish reserves

**GOOD**

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Expand energy access

**GOOD**

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Strengthen public sector auditing through digitization of government services

**GOOD**

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# SUMMARY OF RATINGS

SECTORAL INTERVENTIONS	RATING
<b>PILLAR ONE: ECONOMIC PROGRESSION</b>	
<b>MANUFACTURING</b>	
1. Increase manufacturing and value addition.	FAIR to EXCELLENT
2. Develop a comprehensive economic incentives framework.	FAIR to EXCELLENT
<b>AGRICULTURE &amp; FOOD SECURITY</b>	
3. Increase agricultural production for cereals, horticulture and live-stock—conservation agriculture.	FAIR
Develop agro-processing industries by utilizing local produce and regional value chains.	
4. <ul style="list-style-type: none"> <li>• Food fortification.</li> </ul>	GOOD to EXCELLENT
5. <ul style="list-style-type: none"> <li>• Incentives to investors</li> </ul>	FAIR
Increase smallholder or communal farmers' productivity:	
6. <ul style="list-style-type: none"> <li>• Irrigation on 5536 ha.</li> </ul>	FAIR
7. <ul style="list-style-type: none"> <li>• Farmer cooperatives.</li> </ul>	FAIR
8. <ul style="list-style-type: none"> <li>• Access to credit.</li> </ul>	FAIR
9. <ul style="list-style-type: none"> <li>• Financial incentives to purchase agricultural equipment.</li> </ul>	FAIR
Promote the planting of drought-resistant varieties:	
10. <ul style="list-style-type: none"> <li>• Crop rotation.</li> </ul>	FAIR
11. <ul style="list-style-type: none"> <li>• Drought-resistant seeds.</li> </ul>	FAIR

## BLUE ECONOMY

12. Institutionalize marine spatial planning. **UNKNOWN**

13. Enhance market access. **GOOD**

Increase value addition and investments in onshore processes:

14. • Community-managed fish reserves. **GOOD**

15. • Incentivize fish imports for onshore canning. **POOR** to **FAIR**

16. • Mariculture promotion **FAIR**

## MINING

17. Establish mining value chain activities; intensify value addition to make the sector more profitable and resilient. **GOOD**

## TOURISM

18. Facilitate investment in infrastructure and superstructure. **FAIR**

## RESEARCH & INNOVATION

Build research and technical competencies.

19. • Tax incentives **FAIR**  
• Regional agricultural research. **EXCELLENT**

## ENERGY

20. Expand bulk transmission and distribution infrastructure. **FAIR**

## WATER

21. Upgrade existing water infrastructure. **FAIR** to **GOOD**

22. Construct new bulk water supply infrastructure. **FAIR** to **GOOD**

## TRANSPORT & LOGISTICS

23. Upgrade road, rail, port, and aviation infrastructure to world-class standards. **FAIR**
24. Implement the transport and logistics master plan. **FAIR**

## INFORMATION & COMMUNICATION TECHNOLOGY (ICT)

25. Expand modern broadcasting services to all communities. **POOR** to **FAIR**
26. Upgrade information and communications technology (ICT) infrastructure across the country. **GOOD** to **EXCELLENT**
27. Promote e-services and innovation by integrating information and communications technology (ICT) in all sectors. **EXCELLENT**

## STRENGTHEN EXPORT CAPACITIES AND GREATER REGIONAL COOPERATION

28. Leverage Namibia's membership within the Southern Africa Customs Union (SACU) and Southern African Development Community (SADC). **FAIR**
29. Standardize customs procedures with regional neighbors to facilitate trade. **EXCELLENT**

## PILLAR TWO: SOCIAL TRANSFORMATION

### SOCIAL PROTECTION

30. Strengthen the social protection system. **FAIR**
31. Strengthen social safety nets. **FAIR**

### EARLY CHILDHOOD DEVELOPMENT

32. Increase access to quality integrated early-childhood development **GOOD** to **EXCELLENT**

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33. Improve the provision of educational facilities and teaching-learning resources and increase child health and nutrition. **FAIR to EXCELLENT**

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34. Enhance the quality of teaching at the pre-primary level. **GOOD to EXCELLENT**

## BASIC EDUCATION

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35. Improve learners' transition to higher education. **EXCELLENT**

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36. Improve education and training of the marginalized. **FAIR to GOOD**

---

37. Develop and maintain education infrastructure. **FAIR to EXCELLENT**

## TECHNICAL, VOCATIONAL EDUCATION & TRAINING

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38. Create a pool of competent and skilled workers. **FAIR**

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39. Make technical vocational education and training (TVET) more accessible. **FAIR**

## HIGHER EDUCATION

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40. Strengthen research capacity at higher learning institutions. **FAIR**

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41. Promote private sector investment in higher education. **FAIR to GOOD**

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42. Improve talent management through human resource development, recruitment and retention. **GOOD**

## HEALTH AND NUTRITION

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43. Strengthen the primary healthcare preventive, promotive and rehabilitative interventions. **GOOD to EXCELLENT**

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44. Accelerate health infrastructure development and resource management (equipment, physical building, maintenance, pharmaceutical and finance). **GOOD to EXCELLENT**

## GENDER EQUALITY

45. Strengthen implementation of gender-responsive budgeting and planning. **GOOD** to **EXCELLENT**

## HOUSING AND LAND

46. Develop public-private partnerships to provide land servicing. **FAIR** to **GOOD**
- 
47. Accelerate housing delivery through stakeholder involvement and the development of alternative housing construction models. **FAIR**

## SANITATION

48. Strengthen advocacy and create strategic partnerships to tackle sanitation challenges. **FAIR** to **GOOD**
- 
49. Promote coordinated investment in sanitation infrastructure (new and maintenance of existing infrastructure). **FAIR** to **GOOD**

## YOUTH EMPOWERMENT

50. Strengthen enterprise development and sustainability. **FAIR** to **GOOD**

## EMPOWERING PEOPLE AND COMMUNITIES THROUGH SPORTS

51. Improve sports infrastructure at all levels. **FAIR**

## ARTS AND CULTURE

52. Broaden arts and culture education and training. **FAIR** to **GOOD**

## ECONOMIC INTEGRATION OF MARGINALIZED COMMUNITIES

53. Improve education and training of the marginalized communities. **FAIR**
- 
54. Provide financial and resource management training. **FAIR** to **GOOD**

## PILLAR THREE: ENVIRONMENTAL SUSTAINABILITY

### CONSERVATION AND SUSTAINABLE USE OF NATURAL RESOURCES

55. Strengthen sustainable land management. **FAIR**
- 
56. Enhance value addition and the sustainable utilization of biodiversity. **FAIR** to **EXCELLENT**

### ENVIRONMENTAL MANAGEMENT AND CLIMATE CHANGE

57. Strengthen environmental protection. **FAIR**

## PILLAR FOUR: GOOD GOVERNANCE

### PEACE, SECURITY AND RULE OF LAW

58. Integrate immigration management and civil registration systems. **GOOD**
- 
59. Strengthen national security and territorial integrity. **UNKNOWN**

### ACCOUNTABILITY AND TRANSPARENCY

60. Strengthen anti-corruption measures. **EXCELLENT**
- 
61. Strengthen public sector auditing. **GOOD**
- 
62. Strengthen corporate governance for public enterprises (PEs). **EXCELLENT**

# TRAFFIC LIGHT ANALYSIS

## PILLAR ONE: ECONOMIC PROGRESSION

### MANUFACTURING

#### 1. INCREASE MANUFACTURING AND VALUE ADDITION.

**FAIR** to **EXCELLENT**: Over the past years, the growth of Namibia's manufacturing sector has been volatile. The sector recorded a growth of US\$ 1.68 billion in 2018, which declined to US\$ 1.17 billion in 2020 and subsequently increased to US\$ 1.41 billion in 2022 (<https://www.macrotrends.net/countries/NAM/namibia/manufacturing-output>).

The manufacturing sector envelops multiple areas dominated by fish processing, meat processing, and other food and beverages. Other sectors within manufacturing that also dominate include basic non-ferrous metals, fabricated metals, diamond processing, leather and related products, and non-metallic mineral products (National Planning Commission [NPC] 2017). The sector faces multiple issues, such as land, access to finance, utility costs, investment incentives, manufacturing status, unfair trade practices and skills shortages (ibid).

However, the Government of Namibia has identified the manufacturing sector's development as key to driving the industrialization agenda to contribute towards economic growth and development. In light of this, the Government's policy is to increase manufacturing and value addition. Our analysis will focus on five manufacturing sector interventions based on the areas identified as constraints to the manufacturing sector. The interventions are as follows:

- i. management training for large manufacturing enterprises
- ii. management training for medium-sized firms



- iii. reduction in electricity tariff for industry
- iv. a capital grant for micro-enterprises (access to credit)
- v. access to land (land tenure)

We find no studies to help provide benefit-cost ratios (BCR) of these policy interventions within the Southern African Development Community (SADC), of which Namibia is a member, except for Malawi on a specific policy intervention. On that note, the analysis relies on a study in Ghana by Quartey et al. (2020). The study revealed that investment in management training for large manufacturing enterprises has a BCR of 5.9, while investment in management training for medium-sized firms recorded a BCR of 9.6. On utility (electricity) cost reduction for the manufacturing sector, the evidence as presented by Quartey et al. (2020) in Ghana showed a BCR of 1.8.

Access to working capital (finance), is another manufacturing sector intervention. The study found that investment in a capital grant for micro-enterprises in an in-kind grant recorded a BCR of 7 (ibid). On the other hand, increased traditional microfinance in Ghana studied by Adjasi (2020), recorded a BCR of 1.6. This BCR was confirmed by a study in Malawi by Wallace et al. (2021) that looked at establishing a credit guarantee scheme to extend credit to SMEs and recorded a BCR of 1.05. The first four manufacturing sector interventions outlined above show BCR ranging between **FAIR** and **GOOD**. Land titling reform minimizes the risks associated with land access, in other words, it contributes towards improving access to land. The benefits include, among others, wealth creation through access to credit, including increased investment. For a country committed to industrialization, land titling reform is one effective way to generate substantial economic benefits for most Namibians. Another argument for land titling reform as it relates to manufacturing is that it allows for increased production/productivity in agriculture, which then facilitates a structural transformation into manufacturing. In other words, people who no longer want to be farmers can more easily sell or rent their land, allowing for the agglomeration of agricultural land and more labor available for manufacturing. A study by Razvi et al. (2021) on land titling reform in Malawi indicated a BCR of 73. A study by Byamugisha and Dubosse (2023) on land tenure security focusing on sub-Saharan Africa (SSA) indicated a BCR of 18 for rural areas, while the urban areas indicated a BCR of 45.

## **2. DEVELOP A COMPREHENSIVE ECONOMIC INCENTIVE FRAMEWORK.**

**FAIR** to **EXCELLENT** (see above). Namibia aims to develop a comprehensive economic incentives framework to help revise the existing manufacturing incentives regime and ensure that such support is comprehensive and optimized for economic structural

transformation. There are numerous types of incentives—those that promote specific investment (foreign investment grants, industrial development zones, enterprise investment programs, innovation and research and development), incentives that encourage investment in capital assets (building and infrastructure, urban development zones, manufacturing plants and machinery) and incentives that reduce the company's fiscal burden (preferential tax rates).

## AGRICULTURE & FOOD SECURITY

### 3. INCREASE AGRICULTURAL PRODUCTION FOR CEREALS, HORTICULTURE, AND LIVESTOCK—CONSERVATION AGRICULTURE (CA).

**FAIR:** Conservation agriculture is a practice, an ensemble of low-cost, community-oriented interventions that meet sustainability requirements. It includes ISFM, micro-dosing, drip irrigation, and certified seeds. The benefits of shifting from conventional farming to Conservation Agriculture include increased crop yield and decreased labor hours required (Pannell et al. 2014). A polarized debate, particularly in sub-Saharan Africa, surrounds the merits of CA as an alternative to conventional tillage-based farming. The debate has largely centered around the farm-level costs/benefits, including the time horizon of benefits accruing, labor requirements and, in particular, whether CA requires the additional need of high inputs such as fertilizers and herbicides to be profitable.

Many studies reviewed by Lalani et al. (2017) show that long-term benefits are tied to the appropriate fertilizer application. The authors evaluate 190+ farmers in Mozambique and find that most CA farmers use a three-crop sequence during the growing season, i.e., maize-cowpea and cassava and maize-cowpea and sesame being the most common. Likewise, for conventional farmers, these are the most common three-way sequences. They found that CA is preferable in the short-term (3 years), as it has higher returns and lower labor requirements; however, conventional agriculture is preferential in the long run owing to the high opportunity cost of labor (other income opportunities like livestock) versus the time and resources required for CA practices, which extends the planting seasons.

Pannell et al. (2014) argue that farmer (especially small-holder) uptake could be affected by crop residues for mulching in CA, whereas it has another potentially higher value use as livestock feed and can be burned for pest control. Using data from Zimbabwe, they find that when these opportunity costs are factored into the economic evaluation,

conventional farming presents higher returns in the short and medium term (up to 10 years). The Copenhagen Consensus Center has commissioned several related studies with the following results. Haiti: Agrosylviculture, BCR = 3; India: Crop diversification, BCR = 1; Malawi: Crop diversification and intercropping, BCR = 2.

## **DEVELOP AGRO-PROCESSING INDUSTRIES BY UTILIZING LOCAL PRODUCE AND REGIONAL VALUE CHAINS.**

### **4. FOOD FORTIFICATION**

**GOOD** to **EXCELLENT**: Globally, this is a **GOOD** to **EXCELLENT** intervention, with BCRs varying depending on the value chain for flour and the extent to which local production processes need to be altered. The costs of the intervention depend on existing capacity and the value chain for flour (whether it is locally produced and milled, the concentration of millers, etc.) and the ability to control for additional costs. An example is in a report by Access Economics (2006), an evaluation of mandatory flour fortification in New Zealand and Australia. Fortification costs per capita are higher in New Zealand than in Australia because Australian mills already have feeder systems for adding thiamine (which became mandatory in 1991). New Zealand mills, on the other hand, need to purchase and install new feeders and silos to accommodate the addition of folic acid. As a result, annual costs are 102% higher, and the BCR for New Zealand is 9.5, whereas for Australia, it is 41.9. The benefits depend on the nature and intensity of flour consumption and the extent of nutritional deficiencies among the targeted population. The Copenhagen Consensus Center has, in the past, commissioned fortification studies. Globally, micronutrient fortification (iron and salt iodization) has a BCR = 5.5. Wheat flour micronutrient fortification in Haiti has a BCR = 24, and 12 in Afghanistan (Gain 2017).

### **5. INCENTIVES TO INVESTORS.**

**FAIR**: Fiscal incentives are typically explored to attract investment. A 2007 USAID report exploring various tax incentives in the SADC region revealed that an upfront investment tax credit had the most effect; less effective were tax holidays, and the least effective was exemption from import duties. The least cost-efficient instruments are the 10-year tax holiday and a general company tax rate reduction from 35% to 15%. The Copenhagen Consensus Center research reveals that special economic zones, including industrial zones, have BCRs < 5. An intervention to incentivize local food processing in India had a BCR = 2.5. In Malawi, a credit guarantee scheme for agro-processors had a BCR = 1.1.

## INCREASE SMALLHOLDER OR COMMUNAL FARMERS' PRODUCTIVITY.

### 6. IRRIGATION ON 5536 HA.

**FAIR:** While great benefits are associated with investing in irrigated agriculture (increased food production and food security, and improved nutrition, among others), this policy intervention has significant costs. Even with the most recent innovation around solar technology, it remains too costly for most smallholder farmers, who farm plots smaller than a hectare and concentrate mostly on staple crops, whose prices and exports are often regulated. BCRs in our Malawi study tend to hover between 1 and 2 generally (and for solar) and slightly higher (between 3 and 6) for drip irrigation and specialized export-oriented crops like oilseeds, tubers, and spices. Generally, the returns to irrigation depend on the irrigation technology under analysis, the crop's market potential, and the cultivation scale. With lower value commodities, the results are fairly standard: Ghana: Revamp irrigation schemes, BCR = 1.5; Malawi: Financial instruments and matching grants to help farmer organizations finance solar-powered irrigation schemes, BCR < 1; Malawi: Re-orientate extension workers to provide irrigation support to smallholder farmers, BCR = 3.3; India: Drip irrigation and mulching in high-value crops, BCR = 5.1; India: Expand water use efficient irrigation, BCR = 3.3; India: Renovation of traditional water harvesting, BCR = 2.7.

### 7. FARMER COOPERATIVES.

**FAIR:** A study of smallholder farmers in South Africa revealed that although agricultural cooperatives rendered some support services to their members, most respondents perceived their cooperative as ineffective in rendering key support services that could improve their livelihoods, such as assistance with conflict mediation and support in accessing farm labor. More importantly, agricultural cooperatives were considered ineffective in supporting their members in facilitating produce transport to market and providing access to value-added support and processing facilities (Nyawo and Olorunfemi 2023).

An earlier study by Abate et al. (2014) showed Ethiopia a positive and statistically significant effect of membership in agricultural cooperatives on technical efficiency at the farm level. Finally, a meta-analysis by Ma et al. (2023) on the efficacy of farmer cooperatives in developing countries reveals that the hypothesis that agricultural cooperatives yield no benefits, on average, to smallholder farmers in developing countries cannot be rejected, and this is very much in line with individual country findings. However, the rating is **FAIR** because it is a comparatively low-cost intervention, especially if

information and communications technology (ICT) is employed, and is likely to have some benefit, as identified above.

## **8. ACCESS TO CREDIT.**

**FAIR:** Providing credit in credit-constrained environments opens up more profitable investment opportunities that may be unavailable with self-financing. Seven and Tumen (2020) show that doubling credit access across developing countries increases agricultural productivity by 4–5%. In the case of Uganda, Kinuthia (2018) showed that borrowers in Uganda have profits per hectare that are almost double those who do not borrow. This increase is based on expanding agricultural activity because borrowers have 35% higher costs than non-borrowers.

A more favorable financing instrument would be a credit guarantee scheme (CGS) aimed at banks to increase loans to actors within the agro-processing value chain because CGS conducts collective negotiations with banks on interest rates and other conditions and SMEs participating in improving screening and monitoring. These measures contribute to minimizing risk associated with lending, that is a reduction in default rate and ultimately increasing the volume of credit.

## **9. FINANCIAL INCENTIVES TO PURCHASE AGRICULTURAL EQUIPMENT.**

**FAIR** (see above regarding access to credit): It is recommended that the government become the guarantor of lending facilities rather than the accrediting agency. The returns are still modest, but the risk is displaced from the private sector, which will presumably expand the credit supply. The Copenhagen Consensus Center has analyzed other interventions to increase mechanization in the agriculture sector.

In Ghana, the lending out of tractor services had a BCR = 2.8; in Haiti, a transport truck system, BCR = 2.6; in sub-Saharan Africa: SME training on agro-processing equipment fabrication from scrap metal, BCR = 2.1; in India: Hiring centers for farm machinery, BCR = 1.9; in Haiti: Introduce crop insurance, BCR = 1.3; in India: Crop insurance, BCR = 1.1.

## PROMOTE THE PLANTING OF DROUGHT-RESISTANT VARIETIES.

### 10. CROP ROTATION.

**FAIR:** Crop rotation, rarely an isolated practice, is included among the conservation agriculture farm interventions to render agricultural activities more sustainable and implementable by small-holder farmers. It is typically accompanied by minimum tillage, mulching, and/or intercropping. Crop rotation addresses pest and weed management and depletion of soil quality. It is a low-cost innovation, mainly driven by the diffusion of information and regular testing of soils, and does not require the purchase of additional inputs. Akinyi et al. (2022) document markedly higher BCRs for these conservation agriculture practices. In Malawi, the BCR was 13.7 for soybeans; in Zambia, it was 14.6 for peanuts. The best results are when legumes are included in the rotation because they increase the soil's fertility by increasing the nitrogen level. The benefits of crop rotation emanate from a decline in farm labor; for both, the labor requirement, measured in person-days per season, declined significantly: 49 and 32 days, respectively. Higher productivity also drives benefits, but the extent to which farmers can benefit depends on post-harvest practices and local market structures. Ng'ang'a et al. (2020) show that for Tanzania, an environment of increasing temperatures and declining rainfall, investment in crop rotation of maize with soybean varieties has higher returns on investment and a shorter payback period when compared to intercropping of maize with soybean, caused mainly by the low installation, maintenance and operational costs of the crop rotation practices. They project the investment period to be between two and seven years. Because of the aggregation of practices, it is difficult to isolate the impact of crop rotation. A study of just crop rotation practice of legumes and wheat among Pakistani farmers placed BCRs in the **FAIR** range (Rana et al. n.d.). Similar results were found in Vietnam and Uganda (Lan et al. 2018).

### 11. DROUGHT-RESISTANT SEEDS.

**FAIR:** The adoption and use of improved seed varieties include varieties that are tolerant to climate risks such as drought and floods. They reduce the risks of crop failure or yield losses. Akinyi et al. (2022) compute BCRs for improved seeds of sweet potato in Kenya at 2; of potato in Nigeria at 2.5; of soybean and cassava in Malawi at 6 and 3.6, respectively; of soybeans in Zambia at 3; and of fava beans in Ethiopia at 2.4. Past Copenhagen Consensus Center studies on drought-resistant seeds also had modest results: in Ghana, hybrid maize seed subsidies have a BCR = 3.6, and OPV maize seed subsidies have a BCR = 2.3. Katengeza and Holder (2021) studied the adoption of drought-resistant seeds in Malawi, where annual maize consumption per capita is the highest in Africa. In order to

sustain this, nearly all smallholder farmers (97%) grow maize. There was a 44% increase in yield for every hectare cultivated with the seed. It should be noted that the seeds were part of the Farm Input Subsidy Program, facilitating farmer uptake. Without it, there may have been different results, as a bag of drought-resistant seed, priced at 563 Malawi Kwacha per kg bag, was made available to farmers at 273 Malawi Kwacha.

## BLUE ECONOMY

### 12. INSTITUTIONALIZE MARINE SPATIAL PLANNING.

**UNKNOWN:** A cost-benefit analysis will determine how much the marine spatial plan (MSP) minimizes harm and promotes sustainable economic growth. MSPs are not just concerned with fishing and fisheries management; they are being developed for offshore wind energy and sand extraction in Europe. Their BCRs are difficult to evaluate without establishing business as usual. The cost of an MSP is largely a human time cost, whereas the benefits deriving from the plan depend on how rights are distributed.

Services emanating from the distribution of use rights could lead to recreational (diving, snorkeling) activities, fishing, aquaculture, and off-shore energy. Jay (2017) for the OECD found that an MSP could facilitate sector growth, optimize the use of the sea, and reduce the costs of information, regulation, planning and decision-making. It also lowers coordination and transaction costs (search, legal, administrative, and conflict) and enhances the investment climate.

### 13. ENHANCE MARKET ACCESS (40% INCREASE IN HORSE MACKEREL VOLUME PROCESSED).

**GOOD:** The total allowable catch in 2021 was 36,125 tons. A 40% increase would amount to approximately 14,450 tons. The Democratic Republic of Congo purchased a percentage at auction, at NAD 3076 per ton. At this rate, the revenues would increase by NAD 44.4 million. If the variable cost per boat per fishing day is approximately NAD 200,000, and, according to Mukumangeni (2006), the annual average catch per boat is 3096 over 28 fishing days during the year. The total annual variable cost of this effort is NAD 5.6 million. Assuming no additional inputs (vessels, equipment, human resources) are needed to realize the 40% increase, the back-of-envelope benefit-cost ratio is 8.

## INCREASE VALUE ADDITION AND INVESTMENTS IN ONSHORE PROCESSES.

### 14. COMMUNITY-MANAGED FISH RESERVES.

**GOOD:** Karres et al. (2022) reviewed the evidence of community-managed freshwater resources in 65 studies covering 26 countries. They found that, while most projects focused on fisheries and irrigation activities, they focused more on extraction and ecosystem services (e.g., food security, reliable water supplies for agriculture) than ecological ones (e.g., freshwater biodiversity and habitat). Consequently, publications overly reported on human well-being outcomes rather than environmental outcomes. Nevertheless, there is consistent evidence that community management increases fish populations. Gilchrist et al. (2020) confirm that community-managed marine areas have higher biomass than top-down structures; after year 2, these areas had 189% more biomass. Koning (2020) documented a similar result for Thailand. Hackenberg et al. (2022) review Namibia's history with locally-managed marine areas and conclude that, while there are higher catches, a higher species diversity, and bigger fish within reserves, there is a need for consistent consultations between the communities and ministerial inspector and support with enforcement. A relatively low-cost intervention of what is principally an administrative change appears to yield good results in the medium to long term.

### 15. INCENTIVIZE FISH IMPORTS FOR ONSHORE CANNING.

**POOR** to **FAIR:** Generally, private enterprise subsidies have BCR ratings ranging from **POOR** to **FAIR**. Canning locally caught fish adds value, especially if it is destined for export. The cost would be the cost of transport, treatment and canning, and the benefit would be the export sales from fish that would have otherwise been sold freshly (the difference between the two prices) or fish that would have rotted (in this case, the full revenue from exports). It is unclear if the same benefit would hold for imported fish, given that there are added costs of transport and administrative procedures.

### 16. MARICULTURE PROMOTION.

**FAIR:** The investment cost includes cages, operating cost components such as feed and seed, and human labor, compared to the benefit from sales. Studies point to a **FAIR** rating: India, BCR = 1.5; Cameroon, BCR = 7 (semi-intensive); Nigeria, BCR = 1.9; Malawi, BCR = 1; Ghana, BCR = 1.5.



## MINING

### 17. ESTABLISH MINING VALUE CHAIN ACTIVITIES; INTENSIFY VALUE ADDITION TO MAKE THE SECTOR MORE PROFITABLE AND RESILIENT— EXPAND ENERGY ACCESS.

**GOOD:** According to a Namibian National Planning Commission Report (Republic of Namibia, 2021) on the mining sector, mining companies (88% of whom are foreign) in Namibia face different impediments in conducting mining activities, such as scarcity of water and the high costs of electricity, diminishing resources and an unskilled labor force, coupled with external low commodity prices, exchange rates and high transportation/fuel costs.

A review of various policy instruments in the Zambian mining sector by Mutambo et al.(2021) reveals that they had not achieved any meaningful impact on promoting local content links in the mining sector. To date, the mines in Zambia still rely on imported goods and services. The authors mentioned policy inconsistencies that sent the wrong signal to investors, the instability of the mining tax regime, and the high skills gap coupled with low technology. A reliable and secure energy supply is a prerequisite for an energy-intensive sector like mining. Barnard et al. (2021) explored the costs and benefits of constructing a 54 MW solar photovoltaic (PV) plant in the platinum belt of Rustenburg, South Africa. The direct benefit was the 10% reduction in electricity costs against an investment of ZAR910 million; the BCR = 6.

## TOURISM

### 18. FACILITATE INVESTMENT IN INFRASTRUCTURE AND SUPERSTRUCTURE.

**FAIR:** There are a variety of interventions to improve tourism receipts. Nguyen (2021) investigated the impact of investment in tourism infrastructure components on international visitor attraction using data from Vietnam from 1995–2019. In the long run, investing in the three components of tourism infrastructure, namely transport and communications infrastructure, the hotel and restaurant industry, and recreation facilities, strongly and positively affects international visitor attraction. For sub-Saharan Africa, Adeola et al. (2019), found that, after examining the relationship between information and communication technology (ICT), infrastructure, and tourism development in Africa between 1996 and 2016, ICT and infrastructure have a positive, statistically significant

relationship with tourism development. The Copenhagen Consensus Center has analyzed the upgrading road infrastructure around tourist sites in Malawi, where the BCR is 2.8 (National Planning Commission 2021a).

## RESEARCH & INNOVATION

### 19. BUILD RESEARCH AND TECHNICAL COMPETENCE.

**FAIR** to **EXCELLENT**: The agricultural sector has the highest returns from research and development interventions. A recent meta-analysis of more than 600 BCRs demonstrates that the average return is around 25:1, i.e., the BCR is 25 on average, with a median BCR of 10 (Alston, Pardey and Rao 2021). The logic behind this finding is that relatively small investments upstream can substantially improve the efficiency and yield of the entire agricultural sector. Where it relates to industry R&D, the OECD (Crisuolo et al., 2022) released a report on a review of the evidence on the effectiveness of various industrial policies. They found that well-designed R&D tax credits and subsidies effectively stimulate R&D, assuming researchers and research infrastructure are not in short supply. Firm responsiveness was greater for financial instruments, such as public loans, guarantees or public venture capital, and small firms. Furthermore, there was no advantage to targeting a sector in particular and omitting others. Last, they also discovered a large body of evidence demonstrating that competition policy promotes efficiency-enhancing resource reallocation and, indirectly, incentivises firms to innovate and adopt new technologies.

Higher education institutions, particularly research universities, play a significant role in the economic development of a region by creating new knowledge, training a skilled workforce, and attracting high-tech industries, thus providing vital contributions to regional innovation and economic development processes (Sánchez-Barrioluengo 2014).

Regarding specific instruments, tax incentives to stimulate research and innovation in the private sector have returns in the **FAIR** range. The foregone tax revenues must be balanced against the capacity to appropriate and commercialize new products or strategies. Policy instruments that promote research and development in the energy technology and agriculture sectors appear to have the highest returns, with BCRs over 11. Agriculture R&D is discouraged at the national level because of the high initial startup investment required and extensive training that must be undertaken. However,

agricultural R&D at the regional level via CGIAR has proven consistently beneficial, particularly in sub-Saharan Africa, with an average BCR of 30.

## ENERGY

### 20. EXPAND BULK TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE.

**FAIR:** Access to electricity is significant in transforming the welfare of the people of Namibia, catalyzes industrialization, and ultimately contributes to economic growth. According to Ritchie et al. (2022), only 56.26% of the population of Namibia has access to electricity as of 2020. However, Namibia has made progress (20 percentage points) from 36.5% of the population with access to electricity in 2000 (ibid). As a result of increasing population growth coupled with growing demand for electricity, the electricity consumption of Namibia increased from 1.41 terawatt-hours (TWh) in 2000 to 1.57 TWh in 2021 with some level of volatility. With the growing demand and a large number of the population unserved, the Government of Namibia is committed to expanding its bulk transmission and distribution infrastructure, which is synced with the Government policy of increasing the generation capacity from 484 megawatts (MW) in 2016 to 755MW in 2022 (NDP 5).

A study by Kemausuor (2020) on the costs and benefits of electrifying rural Ghana showed that expanding grid-based electrification to more remote communities indicated a BCR of 1.1 while expanding grid-based electrification to less remote communities indicated a BCR of 4.5.

## WATER

### 21. UPGRADE EXISTING WATER INFRASTRUCTURE.

**FAIR** to **GOOD:** Namibia is Africa's second most arid country, with nearly 80% of the land area being either desert, arid, and/or semi-arid (Kajimo-Shakantu et al. 2014). As a result, the country has experienced poor rainfall patterns and also experiencing persistent drought conditions for over seven years (International Federation of Red Cross and Red Crescent Societies, 2022). Ultimately, this affects water production. Thus, there is an urgency on the part of the Government of Namibia to develop infrastructure imposed by

the country's rapid expansion in water use, which is highly significant because the share of deaths attributed to unsafe water sources stands at 2.7% as of 2019, an improvement from the 7% recorded in 1990 (Ritchie et. al., 2019).

According to Ritchie and Spooner (2019), the share of the population of Namibia without access to improved water sources stands at 8.64% as of 2020. However, regarding the rural-urban disparity, the data shows that 83.23% of the rural population has improved water compared to 98.85% of urban access as of 2020 (ibid).

Namibia Water Sector Support Program (NWSSP) focuses on increasing access, quality, security and sustainability of water supply services in Namibia (African Development Bank, 2019). The total value of the water-supply infrastructure development projects is estimated at 10,820 billion Namibian dollars (NAD) and is planned to be implemented over five to seven years to help Namibia achieve 100% water access by 2030.

The two policy interventions for analysis are as follows:

- i. Upgrade existing water infrastructure and
- ii. Construct new bulk water supply infrastructure.

The results of water supply infrastructure projects in developing countries indicate a BCR ranging from 5 to 46 depending on the intervention (Hutton et al. 2007). However, in Africa, the result showed BCR ranging from 7 to 11 in rural areas and from 4.5 to 7 in urban areas (Hutton 2021).

## **22. CONSTRUCT NEW BULK WATER SUPPLY INFRASTRUCTURE.**

Same as above.

## **TRANSPORT & LOGISTICS**

### **23. UPGRADE ROAD, RAIL, PORT AND AVIATION INFRASTRUCTURE TO WORLD-CLASS STANDARDS.**

**FAIR:** Investment in transport infrastructure is widely recognized as a crucial driver of economic development. Transport (road, rail, port and aviation) infrastructure accounts for

a significant portion of public spending and is critical in facilitating local and international trade and cultivating economic growth. Scaling up infrastructure development is a key pillar in the national development program (NDP 5) of Namibia, a country that depends on imports and exports of goods and services through a transport system. The goal is to position Namibia as the Southern Africa Development Community's (SADC) logistic hub (Ministry of Works and Transport, 2018). However, infrastructure projects typically involve very large capital investments, so the BCR is seldom **GOOD** or **EXCELLENT** (the denominator being very large).

## **ROAD**

According to the Road Authority (RA), Namibia's total number of road networks is estimated at 48,537.7 km. Of this number, only 8,400 km represent 17.3% of the road networks paved or tarred with bitumen. The rest are with gravel standard (53.6%), earth standard (28.4%) and salt standard. However, the bitumen roads are described as rapidly deteriorating (Ministry of Works and Transport, 2018).

Thus, as part of Namibia's objectives of becoming a logistic hub, the RA is currently upgrading roads such as the Windhoek–Okahandja (115.2 km), Swakopmund–Walvis Bay (35.2 km) and Windhoek–Hosea Kutako International Airport (46.7 km). Other roads that form part of the Regional Transportation Corridors include the Walvis Bay–Botswana–Gauteng Maputo Development Corridor (Trans Kalahari Highway) with a distance of about 175 km from the Trans-Kalahari Highway to Windhoek and the Walvis Bay–Ndola–Lubumbashi Development Corridor (Trans Zambezi Highway) with a distance of about 889 km from the Zambezi river to Windhoek. The total coverage area is 1,261.1 km (distances are from Google Maps). Meanwhile, per NDP 5, the distance to be upgraded as targeted in 2021/22 is 1,242 km.

The literature reveals that road maintenance in Africa is cost-effective, with benefit-cost ratios varying from 3.4 to 22.1 (Heggie 1994). Several factors influence the variation: the condition of the road before its upgrade (either fair or poor condition) and the road maintenance strategies used. In a similar development, a cost-benefit analysis of upgrading road infrastructure for tourism in Malawi revealed a BCR of 2.8 (Dubosse et al. 2021).

## RAIL

The railway sector is key to the industrialization and trade agenda of the country. The transport policy (2018–2035) recognized the role of the railway sector in transporting mining products, liquids, containers and building materials. The sector holds 5% of the surface–transport freight market share (Ministry of Works and Transport, 2018).

The railway track between Walvis Bay and Kranzberg has not been upgraded since the 1960s. To this end, the Government of Namibia planned to upgrade the 210 km stretch of the railway to improve the transportation of goods from the Walvis Bay Port into Namibia and the region (African Development Bank, 2017).

A study by Belal et al. (2020) reveals that an investment in high-speed rail in Egypt showed a BCR ranging from 1.5 to 2.6, depending on the value of the infrastructure to be developed. Similarly, evidence from Ghana on investment in railway transportation to facilitate the supply of agricultural products from rural to urban areas also reveals a BCR ranging from 1.2–1.5 (Graham et al. 2020).

## PORT

The National Development Plan (NDP 5) identified infrastructure underdevelopment as one of the key constraints on Namibia's growth. With a focus on port development, the country cannot effectively discharge its port and coastal state obligations, which turns out to have a negative effect on a country that wants to become a logistic hub within SADC (Ministry of Works and Transport 2018).

According to the NDP 5, the Government of Namibia is focused on expanding the capacity of the Walvis Bay port. The expansion includes automating all critical operations processes and ensuring compliance with International Maritime Organization (IMO) standards. The objective is to help contribute towards positioning Namibia as a regional logistics hub, especially when the country is expected to experience a surge in traffic through their ports by 2030 owing to the African Continental Free Trade Area (AfCFTA).

A previous study by Guerrier and Allien (2017) by the Copenhagen Consensus in Haiti on computerizing procedures at Port of Cap-Haitien showed a BCR of 7, considered **GOOD**.

## AVIATION

The long-term strategy of the Government of Namibia is to rehabilitate and upgrade all airports under the control of the Namibia Airports Company (Ministry of Works and Transport 2018).

According to the Namibia Airport Company, the Hosea Kutako International Airport, the country's only international airport, handles about 640,000 passengers and 14,000 aircraft movements yearly. For its expansion drive, the airport management wants to expand its infrastructure and terminal capacity to accommodate future traffic growth.

Due to limited studies on the cost-benefit analysis of airport expansion projects in Africa, we rely on studies outside the region. A study by José-Doramas and Ginés (2004) on the cost-benefit analysis of investments in airport infrastructure also showed a BCR of 1.4. Similarly, a cost-benefit analysis of Malaysia's Sandakan Airport expansion project revealed a benefit-cost ratio of 1. However, this must be backed by a strong tourism promotion agenda (Yang and Gao 2020). On the other hand, Rodríguez-Sanz and Rubio Andrada (2023) also found a BCR of 5.6 in their analysis of air traffic management infrastructures.

### 24. IMPLEMENT THE TRANSPORT AND LOGISTIC MASTER PLAN.

**FAIR:** Analyzing all the projects within the transport and logistic master plan falls outside the scope of this rapid analysis. We recommend comparing benefit-cost analyses of all these projects to rank them in terms of value for money. Infrastructure projects typically involve very large capital investments, so the BCR is seldom **GOOD** or **EXCELLENT** (the denominator is large). Solving specific issues with smaller investments, e.g., maintenance of existing infrastructure, regulation for more efficiency, rebuilding bottlenecks, and expanding capacity, often provides higher value for money per dollar spent.

## INFORMATION & COMMUNICATION TECHNOLOGY (ICT)

### 25. EXPAND MODERN BROADCASTING SERVICES TO ALL COMMUNITIES.

**POOR** to **FAIR**: Providing broadcasting services to all communities in Namibia forms an integral policy of the Government of Namibia Vision 2030 agenda (NDP 5). The objective is to develop a knowledge-based economy through education and information sharing among citizens using improved technology for broadcasting.

Regarding the broadband policy report, the TV broadcast coverage is below 80% of the population, while approximately 78% is covered by FM broadcasting (Ministry of ICT, Broadband Policy 2018). In this regard, the Government policy is to upgrade and construct new FM and TV transmitter stations to improve digital terrestrial TV coverage to 93% and FM population coverage to 90% by 2022 (NDP 5). Ultimately, this empowers the citizenry and reduces poverty through affordable access to high-quality information and communication (Ministry of ICT 2009). By expanding modern broadcasting services to all communities, the Government is expected to invest in digital broadcasting.

This BCR requires an analysis of alternatives. Broadcasting is a field of rapid technological development with digital terrestrial broadcasting (DTT) facing competition from broadcasting, for example, content delivery via Internet Protocol (IPTV) and on-demand (OTT/streaming). When politicians or civil servants try to “pick winners” among technologies, it often produces **POOR** value for money.

### 26. UPGRADE INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) INFRASTRUCTURE ACROSS THE COUNTRY.

**GOOD** to **EXCELLENT**: Namibia's ICT policy spans across broad sectors of the economy, such as household, education, health and other public sector agencies, to maximize economic growth and social development (Ministry of ICT, Broadband Policy 2018). The ICT infrastructure policy aims to increase the percentage of the population covered by broadband infrastructure to 90% by 2022 to achieve the Government's objectives (NDP 5). As of 2020, the ICT infrastructure for the 2G network has 100% coverage, the 3G network 89% coverage, and the 4G network is only at 79% (Our World in Data Team 2023), thus showing evidence of a coverage gap.



A study by Auriol and González Fanfalone (2014) on the benefits and costs of digital technology focusing on fixed and mobile broadband penetration in developing countries indicates a BCR ranging from 13 to 22.

## **27. PROMOTE E-SERVICES AND INNOVATION BY INTEGRATING INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) IN ALL SECTORS.**

**EXCELLENT:** e-Public services and, for that matter, e-government are components of Namibia's ICT policy (Ministry of ICT, Broadband Policy 2018). According to the NDP 5, the transformation of Namibia into a knowledge-based economy requires integrating ICT into all sectors of the economy, especially the introduction of e-business, e-learning, e-health and e-governance. These e-services offer enormous user benefits, reducing cost and time and improving productivity and efficiency, among others (Batagan et al. 2009).

One great policy under e-governance is e-procurement, which helps curb corruption in most countries. A benefit-cost analysis of investing in e-government procurement systems in low-income countries showed a BCR of 38, while those in lower-middle-income countries revealed a BCR of 309. In other words, for every US\$ 1 spent on e-procurement, the return on investment is US\$ 38 or US\$ 309, depending on whether the country is a low-income or lower-middle-income country (Bosio et al. 2023).

## **STRENGTHEN EXPORT CAPACITIES AND GREATER REGIONAL INTEGRATION**

### **28. LEVERAGE NAMIBIA'S MEMBERSHIP WITHIN THE SOUTHERN AFRICA CUSTOMS UNION (SACU) AND SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)**

**FAIR:** The NDP 5 states that this will be achieved by seeking opportunities to pool resources and provide a framework for regional infrastructure management, such as transportation corridors. Please see the ratings for Transport Infrastructure.

## **29. STANDARDIZE CUSTOMS PROCEDURES WITH REGIONAL NEIGHBORS TO FACILITATE TRADE.**

**EXCELLENT:** Trade facilitation has increased dramatically in Africa, especially since the introduction of the African Continental Free Trade Area (AfCFTA). It is argued that trade facilitation increases economic growth and improves trade performance (Sakyi et al. 2017; Sakyi and Afesorgbor 2019). In Namibia, trade as a share of gross domestic product (GDP) stands at 91.8% as of 2022 (Our World in Data, 2024). However, high transaction costs coupled with the cumbersome nature of customs procedures serve as barriers to trade facilitation in Namibia (den Bosch et al. 2017).

A cost-benefit analysis of 5% of more or increasing trade in low and lower-middle-income countries revealed a BCR of 95 (Feyrer et al. 2023).

## **PILLAR TWO: SOCIAL TRANSFORMATION**

### **SOCIAL PROTECTION**

#### **30. STRENGTHEN THE SOCIAL PROTECTION SYSTEM.**

**FAIR:** Harmonizing the social protection system with existing programs, policies and laws related to social protection is the best pathway to strengthen it (see “Strengthen social safety net”).

#### **31. STRENGTHEN THE SOCIAL SAFETY NET.**

**FAIR:** The objective of strengthening social protection in Namibia is to help curb the high level of poverty and inequality and address issues of vulnerabilities in the country. While some impacts have been achieved in reducing poverty and inequality, the Gini coefficient, which is the standard summary measure for inequality, is high, showing 0.59 as of 2015, while the level of poverty is at 15.62% for the same period (World Bank Poverty and Inequality Platform 2024). According to the Ministry of Gender Equality, Poverty Eradication and Social Welfare (2021), Namibia remains one of the world’s most unequal countries, with poverty levels among rural and marginalized people remaining high.

The Government policy is to strengthen social safety nets to improve the registration for national documents and ensure the effective distribution of grants and in-kind benefits to address these challenges and contribute towards achieving Namibia's National Development Plan (National Planning Commission 2017). The Social Protection Policy (SPP) indicates various social assistance programmes in Namibia. They include child grants, disability and old age grants, and veterans' allowances (Ministry of Gender Equality, Poverty Eradication and Social Welfare 2021).

By this, the Government intends to sustain child grant coverage of 330,000 beneficiaries to 2026, sustain and increase old age grants from 1,300 beneficiaries in 2020 to 1,350 by 2026, while the veterans' allowance is also sustained at 2,200 beneficiaries till 2026. The disability grant will be increased from 250 beneficiaries in 2020 to 1,573 in 2026 (Ministry of Gender Equality, Poverty Eradication and Social Welfare 2021).

Cash transfers typically have **FAIR** BCRs because the transfer goes into the numerator and denominator, driving the BCR towards 1. A cost-benefit analysis of Ethiopia's Social Cash Transfer showed a BCR ranging from 1.3 to 2, depending on the locality (Taylor and Davis 2016). Similarly, a cost-benefit analysis of increasing cash transfers under the Livelihood Empowerment and Poverty (LEAP) program and a poverty graduation program in Ghana showed a BCR of 1.6 and 1.8, respectively (Adjasi 2020).

## EARLY CHILDHOOD DEVELOPMENT

### 32. INCREASE ACCESS TO QUALITY INTEGRATED EARLY CHILDHOOD DEVELOPMENT.

**GOOD** to **EXCELLENT**: Despite improvements in recent years, one in every 25 children in Namibia die before their fifth birthday—the under-5 mortality rate is 39 deaths per 1,000 children born, and the infant mortality rate (death within the first year) is 29 per 1,000 live births (UNICEF, 2021a). Those surviving are often affected by poor health and poor nutrition. Almost one-quarter (22.7%) of children under five are stunted, i.e., short for their age, and 8% are severely stunted, as a result of chronic under-nutrition or poor health, according to data from the 2013 Demographic and Health Survey (Ministry of Health and Social Services & ICF International 2014: 131).

Stunting also has permanent consequences for children's cognitive development. In Namibia, 87% (or 256,000) of children aged 0–4 do not attend integrated early childhood development (ECD) programmes, and 60% (or 74,000) of children of pre-primary school

age are not in preschool education in Namibia. In 2019, 3,000 ECD centers were recorded. Concerning the quality of teaching, 37% of the ECD centers did not employ any trained caregivers. Moreover, of all the ECD centers in Namibia, 71% were community-owned, and another 20% privately owned.

Evidence demonstrates that high-quality Early Childhood Development (ECD) interventions have significant and long-lasting social and economic benefits for children, their families, and society (Heckman 2012). For example, early childhood development and progress in cognitive, psychological, motor and language skills significantly contribute to adult outcomes of educational achievement, health, work productivity, and earnings (Campbell et al. 2014). Gelli et al. (2018) found that implementing an integrated agriculture and nutrition intervention through an ECD platform benefited children's diets and reduced stunting among younger siblings of targeted preschoolers in Malawi. Integrated early childhood development that includes interventions targeting in-utero nutrition services, nutrition counseling for mothers, Infant and young child feeding (IYCF) practices and psychosocial stimulation provide BCRs in the range of **GOOD** or **EXCELLENT**.

### **33. IMPROVE THE PROVISION OF EDUCATIONAL FACILITIES AND TEACHING-LEARNING RESOURCES AND INCREASE CHILD HEALTH AND NUTRITION.**

**FAIR** to **EXCELLENT**: A study in Malawi (NPC 2021a) on analyzing the cost-effectiveness of improvement of existing preschools, namely, improving preschool infrastructure and supplies, providing salaries for caretakers and helpers, hiring additional caretakers and helpers to reduce the child-to-caretaker and helper ratio, and providing one free meal per day yielded a BCR of 2.1. The improvements were intended to provide a better environment for learning and stimulation, ensure that caretakers and helpers stay longer in their jobs, and increase enrolment and reduce dropout rates.

*Prior research by the Copenhagen Consensus Center in Malawi, Ghana, and India on improving infant health through multiple micronutrient supplementation has shown that the intervention yields BCRs in the EXCELLENT range. Targeting children to improve their nutrition status by the provision of preventive small-quantity lipid-based nutrient supplements (SQ-LNS) to children 6–23 months of age yields a BCR of 13.7 as seen in low-income and lower-middle-income countries (Larsen et al. 2023).*

A study in Burundi (UNICEF, 2021b) estimates BCRs in the **GOOD** to **EXCELLENT** range for two sets of interventions. Package 1 contains health and nutrition interventions targeting children in the first 1,000 days of life. In contrast, Package 2 is more holistic, containing

the same health and nutrition interventions while encompassing pre-primary education and water, sanitation and hygiene (WASH), child protection and social protection programs. The BCRs range between 8 and 18 for 2022–2030 and 24 to 38 for 2022–2040. Alderman et al. (2021) analyzed a large-scale national school feeding program in Ghana, conducting a benefit-cost analysis using a methodology that addressed both productivity gains from learning and social protection benefits. The authors found that the learning gains attributed to the government-led school feeding program at scale in Ghana greatly exceeded the program costs, yielding BCRs in the range of **GOOD** to **EXCELLENT**. In a sample of 14 countries providing school meals, take-home rations or biscuits, the benefit-cost ratio ranged from 3 to 9, with Dunaev and Corona (2019) estimating a BCR of 3.3 for school feeding programs in Ghana. Comparing the monetary cost and the economic benefit of providing school feeding led to value created in terms of increased education, improved health and nutrition and increased productivity for the beneficiaries.

#### **34. ENHANCE THE QUALITY OF TEACHING AT THE PRE-PRIMARY LEVEL.**

**GOOD** to **EXCELLENT**: Existing evidence demonstrates that high-quality early childhood development (ECD) interventions have significant and long-lasting social and economic benefits for children, their families, and society (Heckman 2012). For example, early childhood development and progress in cognitive, psychological, motor and language skills significantly contribute to adult outcomes of educational achievement, health, work productivity and earnings (Campbell et al. 2014). The returns to preschool education are well documented. Preschool investment is generally inexpensive relative to higher grades. Children attending preschool do not have an opportunity cost for productive activities. If anything, preschool education frees up time for caregivers for work or leisure. Preschool leads to improved readiness for school and lower dropout rates when in school. One well-known study from Jamaica shows that stunted children who were provided with psycho-social stimulation as children experienced 43% higher incomes as adults compared to a control group not provided with this support (Gertler et al. 2021). Last, preschool can be a useful platform to deliver other important childhood services such as meals, nutrition counseling, and health checks.

There are surprisingly few benefit-cost analyses of preschool education in lower-middle-income countries. Perhaps the most cited analysis is Engle et al. (2011), who estimated that increasing preschool enrollment to 25% or 50% in low-income countries (LICs) and middle-income countries yields a benefit-to-cost ratio ranging from 6.4 to 17.6. The costs of the intervention were the costs of preschool education. The benefits were modeled as an increase in years spent in primary school, which translated into increases in lifetime

earnings. Shariff and Sharma (2018) studied the cost-effectiveness of improving the quality of preschool education at preschool centers in India by hiring external teaching inputs from localized organizations specializing in early childhood development. The estimated BCRs ranged from 13 to 18.

## BASIC EDUCATION

### 35. IMPROVE LEARNERS' TRANSITION TO HIGHER EDUCATION.

**EXCELLENT:** In many developing countries, the most effective means of improving school education quality may be addressing the problem of weak teaching. Interventions targeted towards teacher professional development can involve either pre-service training (training delivered to teachers before they have begun) or in-service training (which refers to training active teachers receive while teaching). Types of professional development interventions vary widely in content and delivery methods; however, the analysis will be limited to in-service training focused on specific subject areas (literacy, mathematics, gender-based teaching methods, etc.) as qualified teacher recruitment has been separated into its intervention category. When teachers are better qualified, they have the potential to positively impact student's test scores and overall life outcomes (Popova et al. 2022). Prior work by the Copenhagen Consensus Center in Malawi estimates a BCR of 22.5 (NPC 2021a).

The remedial education program in urban India, the radio mathematics program in Nicaragua, and the computer instruction program in India all provided inputs which addressed the problem of weak teaching. In contrast, programs that provided inputs dependent on the teachers' use (such as the flipcharts and, to some extent, the textbook program in Kenya) were less effective (Mertaugh et al. 2009).

**EXCELLENT** interventions aimed at improving the quality of education in schools include computer-assisted learning at the right level (BCR = 68), group and teaching children at the right level (BCR = 34); in-service teacher training programs (BCR = 22), well-structured incentives for teachers (BCR = 19.5), and hiring local teachers to improve preschool classes (BCR = 15.5). A recent study identified the two interventions that can potentially deliver substantial learning gains at a low cost (Angrist et al. 2023). The first intervention is 'structured pedagogy'—a series of complementary interventions designed to raise teaching quality. It involves semi-planned lessons, along with training and mentoring. It has been demonstrated to work across multiple contexts at scale.

The estimated BCR = 105 for structured pedagogy for low- and lower-middle-income countries.

The second intervention is teaching at the right level, with a technology and a non-technology variant. Technology-assisted teaching at the right level requires the provision of tablets with structured lessons. Students use them for one hour daily, and the software automatically adapts to their individual learning levels. The BCR of this intervention is 65.

### **36. IMPROVE EDUCATION AND TRAINING OF THE MARGINALIZED.**

**FAIR** to **GOOD**: Major challenges faced by marginalized communities in Namibia include lack of access to land and a lack of secure land tenure, low levels of education, limited access to health services, food insecurity and insufficient livelihood options. Education, Resettlement and Livelihood Support programs have thus far been identified as key development components to poverty alleviation amongst these communities. Challenges are met with the ultimate objective of integrating these marginalized communities into the mainstream economy and improving their livelihood opportunities (United Nations 2018). Many minority communities, due to marginalization, are used as sources of cheap labor and live in segregated conditions. More often than not, other work sectors are also closed to them because they lack educational and training opportunities to enable them to compete. Minority women in Namibia face particular challenges. They are doubly disadvantaged, generally poorer and more marginalized than men (Suzman 2002).

The BCR ratings for improving education and training for the marginalized sections of Namibian society are likely to be very similar to the ratings for these interventions for the general population. Improving access to primary education typically yields BCRs in the **GOOD** range; for secondary education, BCRs are in the **FAIR** range; and for vocational education, the BCRs tend to be **FAIR** or **POOR**.

### **37. DEVELOP AND MAINTAIN EDUCATION INFRASTRUCTURE.**

**FAIR** to **EXCELLENT**: Namibia faces challenges with the internal efficiency of the education and training system in the country resulting from an unsatisfactory quality of instruction, especially in schools serving poor communities. In 2015, only 45% of Grade 5 students achieved proficiency in English, while 63% of Grade 5 students achieved proficiency in Mathematics. Grade 7 students fared even worse, with just 48% and 41% achieving proficiency in English and Mathematics, respectively. At the secondary level,

there are unacceptably high rates of repetition. In Grade 8, 30% of the students repeat the grade. There are also very high dropout rates, with over one-third of all students dropping out by Grade 10. Dropout rates are an extreme concern in the most remote, rural areas, with only 49% of first graders in extremely remote areas reaching up to Grade 5.

The quality of teaching is a major issue, with about 20% of teachers having no teaching qualifications. The transition from secondary to higher education is very low, estimated at 19% of the Grade 12 cohorts. The internal inefficiencies are similar in Technical and vocational education and training (TVET) and Higher Education, where the completion rate is only 60% in TVET and 50% for the university level due to the weak capacity of the students entering these levels from basic education and other socioeconomic challenges faced by the students (ADB 2017). While infrastructure interventions (classroom construction, renovation of buildings, etc.) typically have BCRs in the **FAIR** range, structured pedagogy, Sexual reproductive health (SRH) program for adolescents, and improving quality of teaching yield BCRs in the **EXCELLENT** range.

## TECHNICAL, VOCATIONAL EDUCATION AND TRAINING

### 38. CREATE A POOL OF COMPETENT AND SKILLED WORKERS

**FAIR:** See below

### 39. MAKE TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) MORE ACCESSIBLE.

**FAIR:** Technical and vocational education and training (TVET) aims to improve and develop students' practical skills and knowledge to meet the technical needs of today's challenges and the future. As a result, developing countries have recently integrated TVET into their educational systems. Namibia is no exception.

According to the Ministry of Higher Education, Technology and Innovation (2021), a TVET sector promotes economic and employment growth through the formal and informal economy. As a result, the introduction of a TVET policy in Namibia is to help the country respond to the current and future skills development that is required to help build Namibia as a knowledge-based economy, increasing productivity and also help contribute to achieving the industrialization agenda of the country (ibid).



Increasing access and equity in TVET programs is one of the objectives of the TVET policy Ministry of Higher Education, Technology and Innovation (2021). According to NDP 5, as of 2015, only 25,137 students have enrolled in TVET programs. This number is expected to be increased to 50,000 by 2022. While policymakers strongly advocate and implement TVET programs as the solution to skills challenges in developing countries, the evidence of its effectiveness is weak, the cost is high, dropouts are high, and despite hundreds of millions spent on TVET, there is still a skills mismatch problem.

A study in Ghana on the cost-benefit analysis of skill development indicates a BCR of 1.3. Similarly, evidence from Eswatini shows that investment in TVET indicates a BCR of 1.5 (Mgabhi and Mohammed 2019). Blattman and Ralston (2015) reviewed the evidence on whether stimulating employment promotes social stability. The study reviewed randomized evaluations of various TVET programs targeting young adults in lower socioeconomic groups. The findings suggest that recent randomized trials report some positive results for women but seldom for men. However, few programs pass a cost-benefit test even where positive effects are positive. Hirshleifer et al. (2014) found that government training programs targeted at a quarter million unemployed people in Turkey had a very small positive effect on employment (2%) and earnings (6.5%) after three years, with even the best-run programs barely passing a cost-benefit test. Cho et al. (2014) found that in Malawi, an apprenticeship program had fairly high dropout rates with no positive effects on employment or wages after just four months.

## HIGHER EDUCATION

### 40. STRENGTHEN RESEARCH CAPACITY AT HIGHER LEARNING INSTITUTIONS.

**FAIR:** The development of higher education in Namibia is at the heart of the Government in driving Namibia towards a knowledge based economy and to help transform its industrialization agenda. Ultimately, the focus is on developing the country's human resource base and increasing productivity (Du Plessis and Keyter 2019).

According to the NDP 5, "post-graduate education continues to be underdeveloped and its contribution to research and innovation remains small". As part of the educational strategies to help improve research and innovation in higher learning institutions, the policy of the Government is to strengthen the research capacity of higher education institutions by implementing a national research development program that envelopes

building laboratories and research libraries to support research activities. These academic libraries and laboratories, therefore, provide public goods and services.

Building up research facilities from scratch and creating all necessary supporting services is a large investment, and the output faces global competition (could be produced at higher quality and/or lower cost elsewhere), for example, building up infrastructure for agricultural R&D in Haiti showed a BCR of 1.3 (Bairagi 2017).

#### **41. PROMOTE PRIVATE-SECTOR INVESTMENT IN HIGHER EDUCATION.**

**FAIR** to **GOOD**: There is a growing private-sector involvement in higher education from developed to middle-income and emerging economies. It is argued that the quality of education from state institutions is of poor quality due to the growing demand for higher education, increasing population, and low funding of state-owned higher education based on fiscal challenges (Buckner and Khoramshahi 2021).

Promoting private-sector investment in higher education has been tagged as one of the pillars to transform higher education in Namibia, with the expected outcome of driving economic growth and human development, among others. Specifically the policy is focused on creating an enabling environment for the establishment of new institutions and by promoting and facilitating internship programs (NDP 5).

Promoting internship benefits arising from higher education or skill training are private benefits employees and employers accrue. For example, a study by Ackah et. al, (2020) in Ghana on skill development (apprenticeship) showed a BCR of 2.4, a **FAIR** rating, and unless there is a matching problem (for example, employee/trainee and employer cannot find each other), a study by Arora et al. (2017) in India revealed a BCR of 7.2, a **GOOD** rating.

#### **42. IMPROVE TALENT MANAGEMENT THROUGH HUMAN RESOURCE DEVELOPMENT, RECRUITMENT AND RETENTION.**

**GOOD**: According to Gurchiek (2006), talent management is a priority for all organizations. It is integral to developing human resources (HR) strategies to attract, develop, retain and use employees with the necessary skills and competencies to meet organizations' current and future needs.

In this regard, according to NDP 5, the focus of the Government is to “accelerate the training of Namibians in health-related fields and implement scarce skill attraction and retention-incentive packages”. The desired outcome is to improve the doctor-per-population ratio to 1:270.

We consider this policy intervention as improved management. If the problem is large (wrong people working in wrong positions and right people working in wrong positions) and solved by competent (HR) management, it would be comparable to management training. In this respect, a cost-benefit analysis for medium-sized firms showed a BCR of 10 (Quartey et al. 2020).

## HEALTH & NUTRITION

### 43. STRENGTHEN THE PRIMARY HEALTHCARE PREVENTIVE, PROMOTIVE AND REHABILITATIVE INTERVENTIONS.

**GOOD** to **EXCELLENT**: With a sector allocation of 16.6% of the total budget in 2022/23 and average per capita spending estimated at US\$ 407 (NAD 6,500.00), health spending in Namibia is one of the highest in SADC. However, there are spending inequalities, including along geographical lines. Maternal mortality of 195 deaths per 100,000 live births and under-5 mortality of 45.2 per 1000 live births are a snapshot of the dilemma Namibia faces. Stunting is also high at 23.7% (WHO 2023). A compacted set of five specific interventions for Basic Emergency Obstetric and Newborn Care (BEmONC), including a clean birthing environment, assisted vaginal delivery, neonatal resuscitation, kangaroo mother care, and hygienic cord care, delivers a BCR of 31 (NPC, 2021b). Similarly, new research shows that increasing coverage of BEmONC from 68% to 90%, combined with increased family planning services in 55 low-income and lower-middle-income countries, which account for around 90% of the burden of maternal and neonatal mortality globally, would deliver a BCR of 87 (Madise et al. 2023).

Nutritious eating practices, physical exercise and overall healthier living are crucial. Many interventions for preventing and promoting non-communicable diseases (NCDs) are highly cost-effective. For lower-middle-income countries, intersectoral policies that regulate the promotion and use of alcohol, tobacco, salt, and trans fats have BCRs above 15. Clinical interventions with high returns include early-stage breast cancer and aspirin for suspected heart attacks, treatment of chronic heart failure, harm reduction measures for injection drug users, epilepsy care, treatment of depression, pulmonary rehabilitation,

and primary prevention of cardiovascular disease (Watkins et al. 2023). Earlier, a global modeling exercise that examined six interventions to address three risk factors (smoking, excessive drinking, and obesity) for non-communicable disease in adolescents reported a BCR of 5, on the border between **FAIR** and **GOOD** (Watkins et al. 2019). However, that report used a value that likely underestimates the value of mortality risk reductions (i.e., the human capital approach), suggesting that the result would be in the **GOOD** range when using a more appropriate valuation considering other benefits besides human productivity.

The country is faced with the double burden of both communicable and non-communicable diseases, with high HIV/AIDS, stunting, and maternal mortality rates that predominantly affect people with low incomes and an increasing prevalence of NCDs whose treatment is costly, contributing to high health expenditure. NCDs, in particular, are a significant health problem in Namibia. The age-standardized mortality rate across four major NCDs (cardiovascular disease, chronic respiratory disease, cancer and diabetes) was 909 per 100,000 in males and 581 in females in 2021, contributing to 43% of deaths in 2021 (WHO 2023).

#### **44. ACCELERATE HEALTH INFRASTRUCTURE DEVELOPMENT AND RESOURCE MANAGEMENT (EQUIPMENT, PHYSICAL BUILDING, MAINTENANCE, PHARMACEUTICAL AND FINANCE).**

**GOOD** to **EXCELLENT**: Namibia has one of the lowest population densities in the world, with about three people per square kilometer. According to the World Bank (2022), about 54 percent of Namibia's population lives in cities and urban areas, with 46 percent in rural areas. Therefore, providing access to healthcare is a significant challenge. Namibia's healthcare system comprises four distinct components: intermediate and referral hospitals, clinics, health centers and district hospitals. Each component has a unique role and specialized medical staff—for example, nurses staff clinics that provide basic care. People receive referrals to a health center or a district hospital for more serious cases. The most serious cases obtain treatment at intermediate and referral hospitals. Namibia houses 1150 outreach points, 309 health centers and 34 district hospitals (Nuuyoma and Ashipala, 2020) Namibia's bed-to-population ratio is equivalent to that of higher-income countries, including New Zealand and Norway. However, because of Namibia's low population density, about 21% of Namibians live more than 10 km away from a health provider and the majority of the private health facilities are based in urban areas.

Investing in healthcare and health services yields BCRs in the **GOOD** to **EXCELLENT** range, proving their high-cost effectiveness and impact. In Ghana, strengthening the community health system yields a BCR of 38, providing health worker visits for pregnant and newborns, a BCR of 28, and ambulance provision, a BCR of 21. In Malawi, providing kangaroo mother care in 90% of health facilities yields a BCR of 45; hygienic cord care in 90% of healthcare facilities, a BCR of 32; and neonatal resuscitation, a BCR of 32. Mobile school clinics return a BCR of 6, and immunization of children in remote areas, a BCR of 7.7.

## GENDER EQUALITY

### 45. STRENGTHEN IMPLEMENTATION OF GENDER-RESPONSIVE BUDGETING AND PLANNING.

**GOOD** to **EXCELLENT**: Investing in women's issues can yield strong value for money, often outperforming other sectors for immediate and long-term impacts. The diversity of programming in critical efforts within the gender paradigm empowers women and entire communities.

In Namibia, 91.7% of legal frameworks that promote, enforce and monitor gender equality under the SDG indicator, focusing on violence against women, are in place, and 6.9% of women aged 20–24 were married or in a union before age 18. As of February 2021, 44.2% of seats in parliament were held by women. In 2013, 80.4% of women of reproductive age (15–49 years) had their need for family planning satisfied with modern methods.

Namibia has moved significantly from 12th in the Global Gender Gap Index 2020 to sixth in the latest report, closing 80.9% of the gender gap. However, work still needs to be done in Namibia to achieve gender equality. The adolescent birth rate is 63.9 per 1,000 women aged 15–19 as of 2016, down from 82 per 1,000 in 2012. In 2018, 15.9% of women aged 15–49 years reported that they had been subject to physical and/or sexual violence by a current or former intimate partner in the previous 12 months.

Studies show how eliminating gender-based violence and child marriage, as well as enhancing family planning and maternal health, present the strongest cost-benefit ratios in terms of closing the gender gap and improving the economic outcomes of less developed communities as a whole.

In prior research, Copenhagen Consensus Center estimates **EXCELLENT** BCRs for community dialogue on child marriage (BCR = 114), women's empowerment collectives or self-help groups (BCR = 115); improving access to contraception (BCR = 18), and post-partum counseling and free, improved supply of contraceptives for married women (BCR = 37). Other interventions that return BCR ratings of **GOOD** include bicycle transfer for secondary school enrolment (BCR = 8.1), toilet provision for secondary school enrolment (BCR = 8), sexual health education and girls empowerment program (BCR = 9.8), conditional cash transfers (BCR = 9.2), and increasing women's economic opportunities (BCR = 7).

## HOUSING & LAND

### 46. DEVELOP PUBLIC-PRIVATE PARTNERSHIPS TO PROVIDE LAND SERVICING.

**FAIR** to **GOOD**: The return on investment of road interventions, including upgrading existing roads and strategic new roads investment, usually provides a BCR of **FAIR** to **GOOD**. While constructing a new road yields a BCR of 1 to 5, providing a **FAIR** rating, the BCR of conducting annual routine or regular road maintenance, fully financed once the road is built, yields a **GOOD** rating. Byamugisha and Dubosse (2023) analyzed urban and rural land registration, digitizing land registries to improve efficiency and transparency, strengthening institutions and systems to resolve land disputes and manage expropriations over a ten-year implementation period, and land administration operations and land records maintenance over 30 years. The interventions yielded a BCR of 18 for rural land areas. For urban areas, the BCR estimates varied depending on whether the average housing price (BCR of 45) or a population-weighted housing price (BCR of 30) was used. Previous cost-benefit analyses of land tenure security interventions by the Copenhagen Consensus Center yielded similar good results. In Ghana, the central benefit-cost ratio of a national land titling program, which covered 75% of land in both rural and urban areas was 91, ranging from 5 to 219 depending on various scenarios (Adjasi et al. 2020). In Malawi, for a similar country-wide titling intervention, the BCR ranged from 18 to 138, with a central estimate of 73 (NPC, 2021c).

Maintenance BCR depends on the size of the economic activity (potential increase), the number of commuters affected (time saved), and the maintenance cost. When roads are built for specific economic purposes (improving post-harvest losses in Ghana and roads for tourism in Malawi), the BCR does appear to be higher, though never **EXCELLENT** (NPC, 2021d).

Public-private partnerships (PPP) for water services include the treatment and distribution of drinking water and the collection as well as the treatment and disposal of wastewater. Benefit-cost ratios of interventions to attain universal access to improved drinking water in Asia range between 1 and 4 (Hutton, 2013). Facilities are costly to establish for wastewater and sanitation and require expensive maintenance. An ADB (2019) economic analysis shows that the BCR is within the **FAIR** range, with reduced health impacts and greenhouse gas emissions benefits.

#### **47. ACCELERATE HOUSING DELIVERY THROUGH STAKEHOLDER INVOLVEMENT AND THE DEVELOPMENT OF ALTERNATIVE HOUSING CONSTRUCTION MODELS.**

**FAIR:** The housing issue in Namibia remains very complex and contentious. The pressure on urban areas is becoming ever more acute, as demonstrated by rapidly increasing urbanization rates over the last decade and a half. The demand for affordable housing and land in cities, towns and settlements by citizens has exhausted supply, leading to a mushrooming of informal settlements, which has resulted in socio-economic consequences such as disease outbreaks, lack of economic opportunities, pollution, and so forth (Nghifindaka, 2020). The most recent census data from 2016 indicates that the number of people living in informal houses or shacks has grown markedly over the past decade. Correspondingly, urban areas in Namibia have seen rapid growth in informal settlements, and around 40% of urban households resided in shacks in 2016. A current and detailed analysis of informal settlements in Namibia states that there are around 140,000 shacks in the country's urban areas (Weber and Mendelsohn 2017).

The welfare outcomes of housing have also been documented in the literature following the works of Dunn (2002) and Dunn et al. (2006). These studies have focused on the health benefits of social housing for people with low incomes and concluded that housing is a valuable health capital. However, equitable shelter provision and sustainable spatial development are often difficult. The key to a sustainable housing policy is successful land reform. Addressing the problems of inadequate housing includes recognizing that squatter settlements are a permanent feature and require basic services to sustain. Along with identifying suitable land for housing for poor and low-income households, weak land administration has been one of the main constraints of the land reform issue. An effective legal framework must be established when dealing with land-related matters where customary landowners and developers can directly communicate with mediation from the state (Wayal et al. 2020).

TPrior research by Copenhagen Consensus in Ghana on social housing units (Adjasi and Wong, 2020) yielded an estimated BCR of just over 1. A study in India estimates a BCR of 2.5 for in-situ slum redevelopment using land as a resource (ISSR), a BCR of 1.6 for affordable housing in partnership and a BCR of 1.3 for beneficiary-led construction/enhancement (Kundu et al. 2018). The rationale is that the cost of housing benefits is typically private, with returns driven by the market. Therefore, substantial BCRs are unlikely to exist in housing.

A benefit-cost study of interventions to improve housing in Malawi (NPC, 2021e) revealed that prototype plans to shorten the construction permit process have a BCR of 3.3 and E-permits for construction approval a BCR of 3.2.

## SANITATION

### 48. STRENGTHEN ADVOCACY AND CREATE STRATEGIC PARTNERSHIPS TO TACKLE SANITATION CHALLENGES.

**FAIR** to **GOOD**: As the timeline for the SDGs draws closer, annual progress toward achieving SDG-6 targets is just 1%, while at least 3% progress is required to ensure minimum basic sanitation for all is achieved by the end of 2030 (UN-Water 2020). Given this situation, sanitation provision has become an even more pressing issue. According to data from the Joint Monitoring Program (JMP) of UNICEF and the WHO (UNICEF & WHO 2023), 85% of households in Namibia had access to basic drinking water services in 2020. However, only 35% had basic sanitation services, and 47% of households at the National level had to resort to open defecation.

While there are many intersecting reasons for the massive discrepancy between levels of access to water and access to sanitation, it can primarily be ascribed to the fact that water is delivered through shared communal standpipes with prepaid meters, which are relatively easy to roll out. Many municipalities increase their revenue by selling water at a premium (Karuaihe and Wandschneider 2018). In rural areas of the country, only 20% have access to basic sanitation, with 75% of this 20% (15%) making use of pit latrines, while a staggering 71% resort to open defecation. In urban areas, 50% have access to basic sanitation and 25% resort to open defecation (UNICEF & WHO 2023).

Hutton et al. (2007) estimated the economic benefits and costs of various interventions to improve access to water supply and sanitation facilities in the developing world. For



the least developed regions, investing every US\$ 1 to meet the combined water supply and sanitation MDG led to a return of at least US\$ 5. The main contributor to economic benefits was time savings associated with better access to water and sanitation services, contributing at least 80% to overall economic benefits. In prior research, the Copenhagen Consensus Center has estimated a BCR of 1.6 for community-led total sanitation (CLTS), a sanitation intervention that relies on community-level behavioral change in rural Africa (Radin et al. 2019); a BCR of 1.3 for CLTS in Ghana and 1.7 for CLTS with a targeted subsidy for latrine construction (Radin et al. 2020); a BCR of 5.2 for toilet subsidy provision in Ghana and 4.2 for toilet subsidy provision with improved enforcement of sanitation by-laws; a BCR between 4 and 6.2 for improved sanitation in urban India, and a BCR between 5.3 to 7.8 in rural India (Larsen, 2018). Using behavior change communication (BCC) for promotion of existing sanitation facilities yielded a BCR of around 1.6, putting it in the **FAIR** range.

#### **49. PROMOTE COORDINATED INVESTMENT IN SANITATION INFRASTRUCTURE (NEW AND MAINTENANCE OF EXISTING INFRASTRUCTURE).**

**FAIR** to **GOOD** (see above): Maintenance is much less costly than building something new, and if it enables greater use of sanitation, the BCR would probably be higher than **FAIR**.

## **YOUTH EMPOWERMENT**

#### **50. STRENGTHEN ENTERPRISE DEVELOPMENT AND SUSTAINABILITY.**

**FAIR** to **GOOD**: Management practices in developing countries considerably lag behind those in advanced economies. Therefore, such practices need to be improved to enhance industrial growth. Namibia has one of the youngest and fastest-growing populations in Southern Africa. Some 62% of the working-age adults in the country are between the ages of 15 and 34 (the age group broadly defined as “youth”), and projections indicate that the number of 15 to 24-year-olds will have doubled by 2045 (Ighobor 2013). This youthful population constitutes a crucial resource. However, without sufficient job prospects, it is a resource that will remain untapped. Some 38% of Namibia’s youth are unemployed, with 31.9% not in employment, education or training (ILO 2018). Young people trying to find productive employment or self-employment face a significant disadvantage. They have less social and physical capital than older workers—they lack access to credit,

have fewer assets to use as collateral, and are less likely to have secure titles to land or other property.

Quartey et al. (2020) analyzed a range of interventions to improve profitability in the industrial sector. The BCR estimate for management training for medium and large enterprises was 5.9 to 9.6; capital grants for microenterprises yielded a BCR of 7, while the BCR for a credit reference bureau was 11.7. In Malawi, Kashi et al. (2021) analyzed the improvement of the Malawi Revenue Authority's Msonkho Online system to replace paper tax filing with electronic filing. The intervention also contains implementing tax nudges to facilitate and enhance tax compliance. The return on investment from the intervention was 7. The research also looked at providing MSMEs with free registration and banking seminars, expecting that this will lead owners to formalize their businesses and improve their financial practices, savings, credit access, and insurance benefits. Formalization increases businesses' financial inclusion, which would support them to improve their business practices, become more productive, grow, and benefit from economies of scale. The BCR obtained was 1.7.

## EMPOWERING PEOPLE AND COMMUNITIES THROUGH SPORTS

### 51. IMPROVE SPORTS INFRASTRUCTURE AT ALL LEVELS.

**FAIR:** The United Nations recognizes sport internationally “as a means to promote education, health, development and peace”. Sport allows children and young people to lead healthy lives and teaches them to take on responsibility, behave fairly and resolve conflict peacefully. In this way, sport is an innovative instrument that drives change and sustainable development for each child and society. In Namibia, as in other countries, sports, such as football and basketball training, are highly effective ways to motivate young people to lead healthier lifestyles. However, many places lack adequate sports infrastructure. Before sports programmes can be carried out, constructing new sports facilities or rehabilitating existing ones is often necessary. In September 2016, the Girls' Centre at the NFA facility in Windhoek began using an educational sports concept. The center offers a safe space for girls and young women, who are given support, for example, with homework and can join football training. For the local community of Katatura, there are also organized public information evenings and discussion forums on health and HIV prevention, careers, first aid and financial independence.

While building and improving sports infrastructure costs would include land acquisition, construction, operation and maintenance costs, opportunity costs would also be involved (Chapin 2002). The benefits of improving sports infrastructure typically include job creation, tax revenues, promotion of social cohesion, and healthier citizens, resulting in higher productivity (Acquah-Sam 2021). However, given the large investments in infrastructure, the returns would typically fall in the **FAIR** range, with the economic benefits not outweighing the economic costs of these projects.

## ARTS & CULTURE

### 52. BROADEN ARTS AND CULTURE EDUCATION AND TRAINING.

**FAIR** to **GOOD**: The literature examining the role and effects of arts and culture in developing and transition economies provides the most clearly identifiable examples of a causal link between it and improved economic circumstances. Baur (2022) explored the role of skills development in the arts and culture sector of South Africa to reduce gender inequality as a tool to improve local economic development. He found that empowering women in arts and culture in the informal sector may improve development objectives.

Hagg (2006) observed that arts and culture were integral to sustainable development in many developing countries and used in urban regeneration, providing evidence of creative industries that provided job creation opportunities, income generation and poverty alleviation. Guingane (2010) observed that a popular intervention across the African continent—“Useful Drama”—created a bridge between art and developmental issues and helped communities change behaviors. Dirksen (2013) proposed that cultural interventions do not solve cultural poverty but are low-cost interventions, and the outcomes, such as increased agency, awareness, and psychosocial effects, benefit deprived communities.

## ECONOMIC INTEGRATION OF MARGINALIZED COMMUNITIES

### 53. IMPROVE EDUCATION AND TRAINING OF THE MARGINALIZED COMMUNITIES.

**FAIR**: See “Empower marginalized communities to fully engage in and pursue social, political and economic opportunities by removing obstacles to integration”.

#### 54. PROVIDE FINANCIAL AND RESOURCE MANAGEMENT TRAINING.

**FAIR** to **GOOD**: Financial inclusion connotes all initiatives that make formal financial services accessible and affordable, primarily to low-income people. In recent years, financial inclusion has been perceived as a dynamic tool for attaining multidimensional macroeconomic stability, sustainable and inclusive economic growth, employment generation, poverty reduction, and income equality for advanced and developing countries (Allen et al. 2014)

### PILLAR THREE: ENVIRONMENTAL SUSTAINABILITY

#### CONSERVATION AND SUSTAINABLE USE OF NATURAL RESOURCES

#### 55. STRENGTHEN SUSTAINABLE LAND MANAGEMENT.

**FAIR**: See conservation agriculture.

#### 56. ENHANCE VALUE ADDITION AND THE SUSTAINABLE UTILIZATION OF BIODIVERSITY.

**FAIR** to **EXCELLENT**: The Copenhagen Consensus Center has, in the past, commissioned papers that assessed intervention to prevent further loss in biodiversity, such as reducing further wetland loss with a BCR = 19 and reducing further forest loss (BCR = 70). Other interventions studied included R&D for coastal protection and map digitization in sub-Saharan Africa with BCRs of 55 and 176, respectively, while the expansion of marine protection areas in the region had a BCR = 5. Another intervention likely to have more modest results is the restoration of degraded ecosystems with a BCR of 7.

Whereas spatial modeling yields **EXCELLENT** BCRs, we have generally concluded that the main challenge with generating high BCR biodiversity interventions is the inherent tension between maintaining livelihoods and conservation. Protection of areas necessarily requires excluding some form of economic activity, like farming, fishing, or wood collection, which represents a real cost to those currently utilizing the biomes and must be factored into any benefit-cost conservation analysis. Even if conserving

the biome would generate ecosystem services of substantial value, recent benefit-cost analyses suggest that livelihood costs are large enough to render the BCRs of conservation less than 15.

## ENVIRONMENTAL MANAGEMENT AND CLIMATE CHANGE

### 57. STRENGTHEN ENVIRONMENTAL PROTECTION

**FAIR:** Mangrove protection in Bangladesh has a BCR of 2.8; drought resilience programs in sub-Saharan Africa have a BCR of 3.5, and Agro Sylviculture in Haiti has a BCR of 3.

## PILLAR FOUR: GOOD GOVERNANCE

## PEACE, SECURITY AND RULE OF LAW

### 58. INTEGRATE IMMIGRATION MANAGEMENT AND CIVIL REGISTRATION SYSTEMS.

**GOOD:** The relatively low cost of networking and digitizing information can reap the benefits of efficiency (client time), improved productivity of civil servants (more citizens served) and, if the service is localized, a saving in the cost of travel to capital centers. See the 'Accountability and Transparency' section for various BCRs concerning the digitization of government services.

### 59. STRENGTHEN NATIONAL SECURITY AND TERRITORIAL INTEGRITY: DECENTRALIZING GOVERNMENT SERVICES, INCLUDING JUDICIAL SERVICES.

**UNKNOWN:** Decentralizing government services entails the significant costs of human resource recruitment and training, procurement of hardware, and expanding internet coverage and access. Government presence in remote and marginalized communities certainly increases citizen confidence and accountability.

However, the monetization of these benefits is difficult. Furthermore, Rodriguez-Pose and Muštra (2022), in reviewing decentralization efforts in Europe, conclude that the most

effective were subnational units with adequate capacity (i.e., adherence to the rule of law, accountability mechanisms in place, and degree of bureaucracy).

## ACCOUNTABILITY AND TRANSPARENCY

### 60. STRENGTHEN ANTI-CORRUPTION MEASURES (E-GOVERNMENT).

**EXCELLENT:** One of the best ways to stimulate private sector investment in digitization and information and communications technology (ICT) is to provide the requirement to use it, at least when dealing with the government. In most countries, the government is the largest buyer of goods and services. e-Government procurement systems have extraordinarily high BCRs, above 100. Software costs have decreased substantially over the years, and the development and implementation of an e-procurement system costs, on average, US\$ 9 million, with annual operating and maintenance expenses amounting to US\$ 1 million, which includes private-sector training sessions. The reduced prices paid for goods and services is, on average, 6.75%.

Other benefits, though not measured, include reduced time and travel costs of the private sector, increased opportunities for SMEs, and reduced corruption. The Namibian government's expenditure was US\$ 2.92 billion in 2022, which implies a BCR of 30, significantly higher if implementation can occur within two years, as opposed to five years.

### 61. STRENGTHEN PUBLIC SECTOR AUDITING (DIGITIZE GOVERNMENT SERVICES).

**GOOD:** The Copenhagen Consensus Center has conducted multiple benefit-cost analyses of e-government services, and most BCRs fall within the **GOOD** range. For example, the digitization of the payment of property fees and business licenses in Ghana (BCR = 9), e-filing of taxes in Malawi (BCR = 7), automatic VAT collection in Bangladesh (BCR = 6), electronic registration of births in Haiti (BCR = 11), social protection payments using a digital ID in India (BCR = 8.5), and the establishment of kiosks that bring a range of government services to the people without them having to incur the cost of travel in Bangladesh (BCR = 8).

## 62. STRENGTHEN CORPORATE GOVERNANCE FOR PUBLIC ENTERPRISES (PES).

**EXCELLENT:** The corporatization of state-owned enterprises has met with success. This process may be longer than divesting as it entails due diligence and a change in work ethic and culture to adhere to corporate standards. For example, the corporatization of British Telecom and France Telecom took two years (Nestor and Mahboobi 1999).

In addition to time, the consultancy costs and technical accompaniment are considerable, though measurable, and there are also political costs, which are unquantifiable. The Copenhagen Consensus Center has previously undertaken the corporatization of state-owned enterprises in Malawi and Haiti, with BCRs over 15.

# METHODOLOGY AND SCORING BACKGROUND

## THE MODEL

We use a traffic light model developed with an Eminent Panel, including two Nobel Laureates, to assess the Open Working Group's sustainable development goals (Lomborg, 2018). Copenhagen Consensus also applied this framework for rapid assessments requested by NITI Aayog (the Government of India's think tank and planning body) and the African Academy of Sciences. The traffic light model categorizes all programs into one of five groups based on how much economic, social, and environmental benefit is obtained for each cost unit or the benefit-cost ratio (BCR). The categorization is as follows:

- **EXCELLENT,  $BCR \geq 15$**
- **GOOD,  $5 \geq BCR > 15$**
- **FAIR,  $1 \geq BCR > 5..$**
- **POOR  $BCR < 1..$**
- **No data available.**

Categorizations were based on a number of sources: i) a review of literature, particularly cost-benefit or cost-effectiveness studies, and ii) previous projects conducted for Copenhagen Consensus. Internal discussions were conducted when these two sources did not provide a clear direction of likely benefit-cost categorization. Due to the shortness of the timelines, external experts were not consulted at this time. Projects and interventions relevant to Pillar No. 3, macroeconomic development, were considered for this assessment based on consultation with the Development Strategy Center. Modified projects considered/suggested beyond those identified above are based on high-performing interventions identified through previous projects conducted for the Copenhagen Consensus Center.



## HOW TO INTERPRET THE INFORMATION CONTAINED IN THIS REPORT

In cost-benefit analysis, benefits and costs are typically measured in currency, in this case, Namibian dollars (NAD), which allows comparison of programs, which may have very different objectives, for example, saving lives versus educating children versus avoiding deforestation. It is important to note that while benefits and costs are measured in currency, this does not merely represent money. A vast and considered literature critically examines how to monetize various outcomes resulting from policies for cost-benefit analysis. Therefore, benefits and costs, in principle, account for all social, economic, and environmental impacts. In practice, it is difficult to assess some of the impacts, especially on the benefit side, like dignity or shame, and so it is likely that almost all interventions will have some benefits that have not been quantified. Nevertheless, where the omissions are not explicitly discussed, they are likely to be considered quite small, and hence, the overall rankings remain approximately correct.

Importantly, the traffic light categorizations are not mostly an assessment of the competency or skill of those overseeing or implementing the programs. It is typically much more driven by each program's inherent social welfare efficiency, as assessed in the cost-benefit analysis literature. Programs with poor objectives can be implemented well and will still only do little good, whereas programs that are inherently very effective can be implemented poorly and yield phenomenal benefits 15x higher than costs (though, of course, poor implementation still degrades a program's yield).

**The report's main takeaway is simple: More money should be spent on EXCELLENT programs, which can be done by prioritizing EXCELLENT programs in the national development strategy and ensuring they remain protected from budget cuts throughout the year.**

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