Batoka Gorge Hydro-Electric Scheme Job Creation Estimation and Maximisation Case study

DRAFT FINAL REPORT Ver 1
# Table of Contents

List of Figures and Tables .............................................................................................................. iv

1.0 Introduction and Background .................................................................................................. 1
  1.1 Toolkit Objectives & Benefits ............................................................................................... 1

2.0 Project Background .................................................................................................................. 2
  2.1 Project Benefits .................................................................................................................... 3
  2.2 Key Parties ............................................................................................................................ 4
    2.2.1 Project Sponsor & Implementation Authority ................................................................. 4
    2.2.2 Other Key Parties ........................................................................................................... 4
  2.3 Project Supporting Infrastructure and Amenities ................................................................. 5

3.0 Job Estimation Methodology ................................................................................................... 6
  3.1 Understanding how the Project Information Creates the Job Estimates ............................. 7
  3.2 The Process of Generating Batoka Gorge Hydro-Electric Scheme Job Estimates .......... 8

4.0 Case Study Job Estimates ....................................................................................................... 10
  4.1 Key highlights of baseline assumptions for job estimates by project phase are as follows: .......................................................................................................................................................... 10
  4.2 Job Estimates ....................................................................................................................... 11
  4.3 Assumptions on Allocation of Energy ................................................................................... 11
  4.4 Scenario Analysis for African Job Maximisation ............................................................... 12
    4.4.1 Scenario Analysis: Job Creation Impact Resulting From Increase of Africa Inputs 13

5.0 Opportunities for Batoka Gorge Hydro-Electric Scheme Job Maximisation .................... 15
  5.1 The Project Context: Overall Situational Analysis of Potential for Sourcing African Inputs .................................................................................................................................. 15
    5.1.1 Potential for Sourcing of African Cement ................................................................. 15
    5.1.2 Potential for Sourcing of African Fly Ash ............................................................... 16
    5.1.3 Potential for Sourcing of African Steel ................................................................. 17
    5.1.4 The Potential for Greater Sourcing of African Labour .......................................... 17
    5.1.5 Other Potential Impacts ......................................................................................... 18

6.0 Specific Actions: Applying the Toolkit Job Maximisation Guide ........................................ 20
  6.1 Action One: Develop African Infrastructure Skills and Suppliers .................................... 20
  6.2 Action Two: Implement a Social Impact Management plan (SIMP) ................................. 23
  6.3 Action Three: Create a Project Local Content Policy ....................................................... 24
  6.4 Action Four: Employ Labour-Intensive Methods Selectively .......................................... 25
  6.5 Action Five: Require Project Procurement Programmes to Use African Suppliers 26
6.6  Action Six: Focus National Procurement Policies on Youth and Women Employment ................................................................. 27

6.7  Action Seven: Sector Investment Programme Local Content Requirements or Incentives ................................................................. 29

6.8  Action Eight: Use Tax Incentives to Increase Local Content .................................................................................. 31

6.9  Action Nine: Adapt & Scale African Educational Programmes in Collaboration with Job Providers .................................................. 32

6.10 Action Ten: Crowd in Investors that Prioritize African Job Creation ................................................................. 34

7.0  Conclusion .......................................................................................................................... 36

8.0  Annex ............................................................................................................................................. 37

8.1  Limitations and Assumptions ........................................................................................................... 37

8.2  Ways to Maximize Jobs .................................................................................................................... 38

8.3  Glossary of Terms ............................................................................................................................. 38

8.4  Acronyms from the Case Study ....................................................................................................... 41

8.5  Conditions of Use ............................................................................................................................. 42

OTHER RELEVANT DOCUMENTS

1) Job Estimate Report for BGHES Project
   LINK: http://jobs.au-pida.org/index.html#/project/ccc17e57-6907-4b67-ab1a-47f0e2123405

2) Toolkit Job Maximisation Guide
   LINK: http://jobs.au-pida.org/index.html#/maximize
LIST OF FIGURES AND TABLES

Figure 2-1: Batoka Gorge Hydro-Electric Scheme Location ................................................................. 2
Figure 3-1: Schematic Presentation of the Best Practice Methodology Used for Estimating Job Creation Based on National Input-Output Tables (I-O Tables) ........................................... 7
Figure 4-1: Additional Estimated Average Annual Jobs under Different Scenarios for Batoka Gorge Construction Phase ........................................................................................................ 14

Table 4-1: Baseline Investment Breakdown and Capital Expenditure Distribution ................. 10
Table 4-2: Annual Job Estimates by Project Phase for Batoka Gorge Hydro-Electric Scheme ................................................................. 11
Table 4-3: Average Annual Job Estimates by Country for Batoka Gorge Hydro-Electric Scheme ................................................................................................................................. 12
Table 6-1: ACTION ONE: Batoka Gorge Hydro-Electric Scheme Potential Actions to Accelerate the Development of African-based Core Infrastructure Skills ................................. 21
Table 6-2: ACTION TWO: Batoka Gorge Hydro-Electric Scheme Potential Actions to Implement a Social Impact Management Plan (SIMP) Actions ...................................................... 23
Table 6-3: ACTION THREE: Batoka Gorge Hydro-Electric Scheme Potential Actions to Create a Local Content Policy ...................................................................................................... 25
Table 6-4: ACTION FOUR: Batoka Gorge Hydro-Electric Scheme Potential Actions to Employ Labour-Intensive Methods Selectively ........................................................................... 26
Table 6-5: ACTION FIVE: Batoka Gorge Hydro-Electric Scheme Potential Actions to Require Project Procurement Programmes to Use African Suppliers .................................................. 27
Table 6-6: ACTION SIX: Batoka Gorge Hydro-Electric Scheme Potential Actions to Focus Procurement on Youth & Women .......................................................................................... 28
Table 6-7: ACTION SEVEN: Batoka Gorge Hydro-Electric Scheme Actions to Create a Sector Programme with Local Content Requirements ...................................................................... 30
Table 6-8: ACTION EIGHT: Batoka Gorge Hydro-Electric Scheme Actions to Use Tax Incentives to Increase Local Content ...................................................................................... 31
Table 6-9: ACTION NINE: Batoka Gorge Hydro-Electric Scheme Actions to Adapt & Scale African Educational Programmes .......................................................................................... 33
Table 6-10: ACTION TEN: Batoka Gorge Hydro-Electric Scheme Actions to Crowd in Investors that Prioritise Job Creation ......................................................................................... 35
1.0 Introduction and Background

This is a case study aimed at demonstrating how to use the PIDA Job Creation Toolkit ("Toolkit") to maximise the number and quality of African jobs resulting from the preparation, construction, and operation of PIDA and other African infrastructure projects. This is the first Toolkit case study, featuring the Batoka Gorge Hydro-Electric Scheme ("BGHES"). Over time, the Toolkit will include a series of case studies developed jointly by AUDA-NEPAD and PIDA Project Owners.

The BGHES case study illustrates how the PIDA Job Creation Toolkit ("Toolkit") can be used by Project Owners to: (1) better understand the potential impact of their projects on African job creation; and (2) maximize the number and quality of resulting African jobs.

This introduction section provides critical context for understanding the BGHES case study summarising PIDA Job Creation Toolkit objectives and benefits and the preconditions for realizing project job estimates. This overview is followed by specific background information on the BGHES and the Toolkit’s job estimation methodology.

1.1 Toolkit Objectives & Benefits

The PIDA Job Creation Toolkit serves as a practical tool for catalysing a new African job focus in the development and operation of Africa’s priority infrastructure projects, with the aim of maximizing the number and quality of resulting jobs in the host countries, region, and the African continent.

- Project Owners can collaborate effectively with technical partners, host government(s), development partner(s), private sector partner(s), and other stakeholders in designing their project to maximize the number of African jobs and job quality.
- The Toolkit enables Project Owners and their partners to test alternative approaches to their projects, accessing the implications for African job creation.
- Policymakers, the private sector, and the general public can review the estimates for each project, accessing the full menu of intervention options to increase the number and quality of African jobs.
- The provision of estimated jobs for an infrastructure project enhances the ability of the Project Owner(s) to demonstrate potential economic impact, and thereby increase access to technical support and finance.

However, the estimation of an infrastructure project’s jobs is not a sufficient precondition to actually realizing the creation of those jobs.

| To create African jobs, key stakeholders (such as Project Owners, technical partners, providers of services and equipment, host government policymakers, development partners, employee organizations and investors) need to proactively create job-enabling conditions and implement interventions to realize more African jobs. |

African job creation can only be achieved by thoroughly examining the job creation maximisation options during the entire project life cycle from project preparation to construction through operation. The Toolkit enables Project Owners to systematically assess options for job creation.
2.0 PROJECT BACKGROUND

The BGHES is a hydropower project being undertaken by the Zambezi River Authority (ZRA), a bilateral organization owned by the governments of Zambia and Zimbabwe, and mandated to develop, operate, monitor and maintain hydropower projects along the Zambezi River which is common to the two southern African countries.

The BGHES was first conceived in 1972 following a study instituted by the Central African Power Company (CAPCO), the predecessor of the ZRA. The study aimed at identifying possible power sources to meet the power demands of Zambia and Zimbabwe. Several studies and analyses undertaken in 1981, 1992-93, 1998 and 2015 confirmed the BGHES as the most economically viable option for energy generation because it offered the lowest cost and minimal negative environmental impacts.

In February 2012, a Memorandum of Understanding was signed by Zambia and Zimbabwe, paving way for the start of development of the BGHES. The MOU mandated the ZRA to develop the BGHES.

The project is located on the Zambezi River approximately 47 kilometers downstream of the Victoria Falls on the border between Zambia and Zimbabwe, as shown in the below map.

**Figure 2-1: Batoka Gorge Hydro-Electric Scheme Location**

Based on the latest engineering studies, the current technical configuration under consideration for the BGHES comprises:

- A 181m high, 720m long roller compacted concrete gravity arch dam;
- 4.2 million m³ dam wall;
• A radial gated crest type spillway;
• Four intakes in the reservoir which will take the water through four tunnels (each approximately 1km in length) to the two surface power plants downstream of the dam;
• Two surface power plants, one on either side of the river bank, each having a capacity of 1,200MW, with a combined capacity of 2,400MW;
• 6 x 200MW turbines in each powerhouse; and
• Transmission lines of 330kV (approximately 420 km in Zambia and 470 km in Zimbabwe).

Based on the technical configuration above, the volumes of key material inputs for the BGHES dam are estimated in the following ranges:
• 105,000 - 462,000 m³ of water;
• 294,000 – 436,800 tons of cement;
• 252,000 – 197,400 tons of pozzolan;
• 3,822,000 – 2,709,000 tons of fine aggregates;
• 5,733,000 – 6,825,000 tons of coarse aggregates; and
• Steel for the head race, penstocks, valves and spillway.

2.1 PROJECT BENEFITS

According to project documents, the BGHES will provide a reliable source of power (2,400 megawatts) for Zambia and Zimbabwe as well as contribute significantly to the Southern African Power Pool (“SAPP”). Currently, hydropower remains an under-represented contributor to the SAPP, accounting for only 21% of the overall generation capacity.

The project enables both host countries to improve their enabling environments and national development due to improving the supply of energy on several fronts:
• Improved power supplies and reserves;
• Competitive cost of electricity;
• Security and reliability of supplies; and
• Availability of electricity for new and energy intensive investments such as smelters.

Project documents also underline the significant reduction in carbon emissions, as the BGHES increases renewable energy sources in electricity from 42% to 80%, thereby moving Zambia and Zimbabwe towards a carbon emission compliance position. The BGHES will reduce dependency on coal-fired power plants, thereby reducing the associated carbon dioxide (CO2) emissions. Therefore the BGHES delivers important economic benefits aligned with reduced carbon emissions.

Other project benefits cited in project documents include greater utility of the existing hydropower plant and greater linkages between the two host countries:
• Unlocks the Kariba Dam Reservoir functionality and operational flexibility with significant savings on operational costs that could not be realised when Kariba was operating as Base Load;
• Conjunctive operation of BGHES with the Kariba Dam and other power plants would result in significant reduction of the cost of operating the power system due to significantly lower costs of keeping system reserves and response; and
• The BGHES will provide an alternative link between Zambia and Zimbabwe across the Zambezi River.
2.2 **Key Parties**

2.2.1 **Project Sponsor & Implementation Authority**

A corporation jointly and equally owned by the governments of Zambia and Zimbabwe, ZRA is the implementing agent for the BGHES serving as the project’s sponsor. The Authority was formed by the Zambezi River Authority Act of 1987 (Act No. 17 and 19 for Zambia and Zimbabwe, respectively) and is governed by a Council of Ministers. The Council of Ministers consists of four members: two from the Republic of Zambia and two from Zimbabwe. The ministers are drawn from ministries responsible for energy and finance of both host governments.

2.2.2 **Other Key Parties**

The two principal stakeholders are the two respective national power utilities as noted below:

1) **ZESCO Limited** (Zambia Electricity Supply Corporation) is a parastatal with the main function of producing and distributing power in Zambia. ZESCO produces approximately 80% of the electricity consumed in the country and has historically been the main player in the generation, transmission and distribution of electricity in Zambia. In addition, ZESCO represents Zambia in the SAPP. The electricity produced by the proposed BGHES will be sold to the national grid, which is managed and maintained by ZESCO and SAPP.

2) **ZESA** (Zimbabwe Electricity Supply Authority), officially called ZESA Holdings (Pvt) LTD., is a state-owned company whose task is to generate, transmit, and distribute electricity in Zimbabwe. It has organized this task by delegation to its subsidiaries, the energy generating company Zimbabwe Power Company (ZPC), and the Zimbabwe Electricity Transmission and Distribution Company (ZETDC). ZESA is the majority electricity generator and supplier for the public grid. There are other independent power producers which generate and supply power to the grid on a relatively smaller scale. ZESA represents Zimbabwe in the SAPP.

Other key stakeholders include the following agencies and entities:

- Zambia Ministry of Finance
- Zimbabwe Ministry of Finance and Economic Development
- Zambia Ministry of Mines, Energy and Water Development
- Zimbabwe Ministry of Energy & Power Development
- Zambia Energy Regulation Board
- Zimbabwe Power Company
- Zimbabwe Electricity and Distribution Company
- Zimbabwe Energy Regulatory Authority
2.3 **PROJECT SUPPORTING INFRASTRUCTURE AND AMENITIES**

The technical studies that define the required supporting infrastructure and amenities divide the needs into three distinct phases, with the final stage resulting in the formation of townships on the Zambian and Zimbabwean sides of the river next to the power houses. The three phases with required infrastructure and amenities are detailed below:

- **Phase 1 Construction**: access roads, infrastructures and the first permanent camp
- **Phase 2 Post Construction**: Housing and amenities for each employee (with an average of five related family members) as follows:
  - Offices and staff housing accommodation for the management of the power utilities
  - 2 health centers/hospitals
  - 2 primary schools
  - 2 sporting centers
  - 1 custom service and immigration center
  - 1 police station
  - 1 post office
  - 2 supermarkets
  - Municipality Office
  - ZRA Offices
  - Warehouses for the plant’s maintenance
  - Banks,
  - Hotels, restaurants and recreational facilities
  - Tour operators
  - Water supply
  - Waste water treatment facilities
  - Solid waste disposal facilities
- **Phase 3 Secondary Urbanization Effects**: The concurrent growth of new cities on both sides of the river: Beginning at the construction phase, the project is expected to catalyse the growth of two new urban areas. Therefore the supporting infrastructure and amenities developed in Phases 1 and 2 need to be designed so that they provide the foundational infrastructure required for the development and well-being of the larger urban community.
3.0 JOB ESTIMATION METHODOLOGY

The Toolkit job creation methodology is designed based on best practices to serve as a practical scalable tool aimed at catalysing a new African job focus in the design and implementation of Africa’s infrastructure projects.

- **Best Practices**: This Toolkit job estimation approach is based on best practices using National Input-Output analysis, building on the decades of job estimation approaches used worldwide by governments of both developing and developed country governments as well as multilateral organizations (e.g., World Bank, OECD, etc.). As the basis for job estimates, 54 African country Input-Output Tables have been developed using the international database GTAP.

- **An On-Line Tool that Can be Used by Project Owners**: By inputting information on project inputs and their sources into the Toolkit online, Project Owners from anywhere on the continent can directly obtain their project’s job estimates.

- **Scalable Streamlined Approach**: One-off job creation estimations take an enormous amount of resources and time given the need for highly-skilled economists to extract project data and use complex analytic methods. The Toolkit uses a streamlined approach using African Input-Output Tables and best practice methodologies that utilize the most complete African cross-national economic database to support project and policy decision-making. The limitations of this approach are summarised in the Annex.

- **Full Spectrum of Job Creation**: Infrastructure in Africa is the precondition for significant and sustainable job creation and economic development given the need for essential services such as energy and transport that provide the enabling preconditions for the growth of MSMEs and industrialisation, reducing costs and connecting them to local and international markets. The Toolkit therefore provides detailed job estimates for the full spectrum of infrastructure job creation:
  - **Direct jobs** - Jobs created by direct employment at the project itself;
  - **Indirect jobs** - Jobs created by suppliers to the project;
  - **Induced jobs** - Jobs created by spending of direct and indirect workers; and
  - **Secondary jobs** - Jobs created as a result of the economic impact of the project, such as increased access to energy and transport.

  The standard definitions are explained in greater detail in the Annex.

- **Job Creation Over Life Cycle of Project**: Infrastructure projects generate jobs over the useful life of their **development**, **construction**, and **operation**. The Toolkit job estimates therefore stop operating or require significant new investment beyond the specified annual O&M costs).

- **Collaboration in the Development of Job Creation Scenarios**: The Toolkit enables Project Owners to mobilize the key decision makers in project design – other Project Owners and technical partners – to develop alternative scenarios by varying the inputs and country sources. In this way, the Project Owner can work collaboratively with key partners to test alternative designs of the project and access ways to maximize the number and quality of African jobs.

For a summary of the limitations and assumptions in the Toolkit methodology, see the ANNEX. More extensive information on methodology is provided on the Toolkit [APPROACH PAGE](#).
3.1 UNDERSTANDING HOW THE PROJECT INFORMATION CREATES THE JOB ESTIMATES

As noted, the Toolkit approach to estimating job creation is based on best practices, using national Input-Output Tables.

The use of National Input-Output Tables (“I-O Tables”) is standard in the approaches of international organizations and national governments, such as the UN, OECD, ILO, and national governments (such as the US Renewable Energy Lab’s JEDI Model). The basic approach is summarized in the below schematic.

Figure 3-1: Schematic Presentation of the Best Practice Methodology Used for Estimating Job Creation Based on National Input-Output Tables (I-O Tables)

THE BEST PRACTICE METHODOLOGY USED FOR ESTIMATING JOB CREATION IS BASED ON NATIONAL INPUT-OUTPUT TABLES (I-O Tables)

Therefore using this best practice methodology requires Project Owners to provide detailed information on material, equipment, and labour by both cost and country source.

1) For estimating direct, indirect, and induced jobs by project, the following information is required:
   • Total investment
   • Split of total investment for each project phase between:
     • Inputs (how is investment spent by component, such as construction, metal, equipment, etc.)
     • Host countries and import portion (in which countries are project costs being spent?)
     • Year beginning and ending of project preparation, construction, and operation

2) For estimating secondary effects in electricity generation
• Power supply to be generated by the new energy infrastructure project
• Transmission and distribution losses in the country where the new project will be deployed
• Dollar value of kWh (kilowatt-hour) in the country where the new project will be deployed

As noted in prior section, it is important to note that Toolkit job estimates are not exact projections. The accuracy of the jobs estimates is dependent on the accuracy of the data entered, as well as the underlying model data and assumptions, and the extent general to which benchmarks are used and relevant. As noted in the earlier section, more extensive information on methodology is provided on the Toolkit APPROACH PAGE.

The Toolkit’s job creation estimation process enables the evaluation of the potential job creation trade-offs of alternative project designs and sourcing strategies. Project Owners and national governments can thereby evaluate the implications of alternative designs, implementation and procurement options, integrating job creation implications systematically into project design, negotiations, and final decisions.

The preliminary job estimates for the project were obtained by using the project documents provided by the Project Owners. The BGHES documents used to estimate project costs by input and source country include the following:

- Presentation by ZRA Finance Director to African Finance Corporation (Abuja, May 2017)
- BGHES Brief (April 2017)
- BGHES Status Report (September 2016)
- BGHES WEF Risk Register
- BGHES Overview (March 2017)
- Environmental and Social Impact Assessment
- Overview of SAPP (March, 2013)
- 2014 Feasibility Study
- EY Transaction and Legal Report (November 2016)
- ZRA Request for funding support from the AfDB (September 2015)
- Development of Batoka Gorge: Project Overview and Market Sounding Questionnaire
- 1993 Feasibility Study

Assumptions from these documents have been reviewed and refined by the Project Owners and their technical partners with support from NEPAD to generate the job estimates and map out alternative project designs, as explained in the next section.

### 3.2 THE PROCESS OF GENERATING BATOKA GORGE HYDRO-ELECTRIC SCHEME JOB ESTIMATES

The job estimates for the BGHES were generated using NEPAD’s Job Creation Advisory Service. The process is designed to increase the ability of Project Owners to be aware of how their decisions on sourcing can impact African job creation and empower them to negotiate accordingly.

The following steps were implemented:

1) **Preliminary Job Estimates:** The NEPAD Energy Expert used the project’s documents to input the preliminary information required to estimate jobs on the Toolkit.
2) **Review of Project Owner**: NEPAD shared the preliminary job estimates with the Project Owner, using the Toolkit's job estimation report. In addition, the Project Owner participated in a NEPAD Toolkit Workshop for training.

3) **Refinement from the Project Owner**: ZRA’s Chief Financial Officer and staff then refined the initial information on the project covering the three phases of the project: project preparation, construction, and O&M phases.

4) **Development of Scenarios**: NEPAD’s Energy Expert engaged the client in thinking through possible ways that the project could be structured with greater levels of African sourcing of materials, equipment, labour, and other inputs to increase African jobs. The potential impact on job creation was explored using the Toolkit’s scenario functionality.

5) **Finalization of Job Estimates**: After reviewing the scenarios and determining the final approach to the project, ZRA approved the job estimates and published them on the Toolkit.

The next chapter provides the potential job estimates resulting from the BGHES that have been generated using the Toolkit.
4.0 CASE STUDY JOB ESTIMATES

4.1 KEY HIGHLIGHTS OF BASELINE ASSUMPTIONS FOR JOB ESTIMATES BY PROJECT PHASE ARE AS FOLLOWS:

1. **Project Preparation Phase:** The bulk of the project preparation costs (74%) was spent in Africa: 31% spent in the host countries Zambia and Zimbabwe and 43% in South Africa, and 26% spent outside Africa for international consultants.

2. **Construction Phase:** In the baseline job estimate, 80% of the construction costs will be spent outside of Africa on basic inputs (cement, iron, steel, non-ferrous metals, fabricated metal products) and equipment inputs (motor vehicles and electronic equipment), labour and finance costs. The remainder of costs, approximately 20%, is expected to be spent in Zambia and Zimbabwe. The 80% spent outside the continent translates to investment leakages, resulting in lost African jobs.

3. **Operations & Maintenance (O&M) Phase:** More costs (65% of total costs) are expected to be spent in the host countries during the O&M Phase.

The investment costs by project phase are presented in the below table.

*Table 4-1: Baseline Investment Breakdown and Capital Expenditure Distribution*

<table>
<thead>
<tr>
<th>Location Where Project Investment Spent</th>
<th>Total Project Preparation Costs</th>
<th>Total Construction Costs</th>
<th>Annual Cost of Operations &amp; Maintenance</th>
<th>Over Project Life Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Costs (US$ MM)</td>
<td>18.6</td>
<td>3,602.7</td>
<td>29</td>
<td>5,071.3</td>
</tr>
<tr>
<td><strong>Investment Spent In Africa (percent total investment)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>15.4%</td>
<td>10.1%</td>
<td>32.5%</td>
<td>16.5%</td>
</tr>
<tr>
<td>Zambia</td>
<td>15.4%</td>
<td>10.1%</td>
<td>32.5%</td>
<td>16.5%</td>
</tr>
<tr>
<td>South Africa</td>
<td>42.6%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>Investment Spent Outside Africa (&quot;investment leakage&quot;)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2.9%</td>
<td>44.0%</td>
<td>35.0%</td>
<td>41.3%</td>
</tr>
<tr>
<td>European Union</td>
<td>23.8%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.1%</td>
</tr>
<tr>
<td>China</td>
<td>0.0%</td>
<td>35.6%</td>
<td>0.0%</td>
<td>25.3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Source: PIDA Job Creation Toolkit*
4.2 **JOB ESTIMATES**

Based on the above assumptions, the average annual jobs for the BGHES are estimated at approximately 26,941 jobs, including direct, indirect, induced, and secondary jobs. The job estimates are broken out by project phase in the Figure 4.2 below. The number of years estimated for each project phase is also noted.

It is important to note that the total average annual job estimate does not reflect the wide variances in estimated jobs over the project's entire life cycle from preparation to operation. As shown in the figure, the direct, indirect and induced jobs peak during the construction phase is at the highest level of 10,443 jobs. Secondary jobs will only be realized during the O&M Phase of the project.

Therefore, the largest job impact is during operation when the project has secondary economic spillover effects. However, this is contingent upon further investments towards the productive use of the energy produced from the project. The latter is also largely dependent on the acceptability of the tariff for the project’s energy, so that the energy is effectively disseminated in the two host countries and other targeted neighboring countries, particularly in mining and energy intensive industries. The purchase price of BGHES’s energy will need to be competitive compared to alternative energy sources, especially the SAPP Day Ahead Market (DAM) average peak and off peak tariffs.

*Table 4-2: Annual Job Estimates by Project Phase for Batoka Gorge Hydro-Electric Scheme*

<table>
<thead>
<tr>
<th>TYPE OF JOB CREATION</th>
<th>Project Preparation</th>
<th>Construction</th>
<th>Operation &amp; Maintenance</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER OF YEARS IN EACH PROJECT PHASE</td>
<td>5</td>
<td>7</td>
<td>50</td>
<td>62</td>
</tr>
<tr>
<td>Direct Jobs</td>
<td>120</td>
<td>4,262</td>
<td>861</td>
<td>1,185</td>
</tr>
<tr>
<td>Indirect Jobs</td>
<td>38</td>
<td>2,076</td>
<td>375</td>
<td>540</td>
</tr>
<tr>
<td>Induced Jobs</td>
<td>50</td>
<td>4,105</td>
<td>738</td>
<td>1,063</td>
</tr>
<tr>
<td>Secondary Jobs</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>24,153</td>
</tr>
<tr>
<td>TOTAL AVERAGE JOBS</td>
<td>208</td>
<td>10,443</td>
<td>1,974</td>
<td>26,941</td>
</tr>
</tbody>
</table>

*Source: PIDA Job Creation Toolkit*

*Total column shows annual jobs over the life cycle of the project. Project life cycle is the total duration of preparation, construction and operation phases.*

4.3 **ASSUMPTIONS ON ALLOCATION OF ENERGY**

The preceding baseline job estimations are based on the assumption all the energy generated by the project is consumed equally between Zambia and Zimbabwe. An opportunity exists for exporting the part of the electricity generated in the region through the SAPP Market. To assess the impact of electricity exports on job creation, it has been assumed that the two host countries each use 900 MW of electricity, and export 600 MWs to Botswana, Namibia and Angola (equal shares of 200 MWs each).
The price assumption is US$0.052/kWh, equivalent to the prevailing average tariff on the SAPP market.

This energy export strategy can be done either through bilateral agreements or the SAPP DAM market. This option will enable 100% utilisation of the installed capacity in the short term and give time for the host and beneficiary countries to mobilise investments that will lead to the creation of secondary jobs.

The Toolkit’s job estimation results also include electricity allocation assumptions for three beneficiary countries, each receiving 200 megawatt of energy. The job estimates of annual secondary jobs over the expected lifetime of the project in the beneficiary countries are: Angola 3,774 jobs, Botswana 422 annual jobs, and Namibia 912 annual jobs. Therefore exporting power will create more jobs in the region, while enabling the maximum capacity utilisation of the power plants. Exporting energy in the short-term will improve the business case of the project by spreading the country risk of the project and mitigating the off-taker risk through power purchase agreements with utilities with higher credit quality.

**Table 4-3: Average Annual Job Estimates by Country for Batoka Gorge Hydro-Electric Scheme**

<table>
<thead>
<tr>
<th>Country</th>
<th>Preparation</th>
<th>Construction</th>
<th>O&amp;M</th>
<th>Secondary</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimbabwe</td>
<td>81</td>
<td>4,263</td>
<td>843</td>
<td>8,005</td>
<td>9,173</td>
</tr>
<tr>
<td>Zambia</td>
<td>81</td>
<td>6,180</td>
<td>1,131</td>
<td>10,110</td>
<td>11,726</td>
</tr>
<tr>
<td>Namibia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>912</td>
<td>912</td>
</tr>
<tr>
<td>Botswana</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>422</td>
<td>422</td>
</tr>
<tr>
<td>Angola</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3,774</td>
<td>3,774</td>
</tr>
<tr>
<td>South Africa</td>
<td>46</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>208</strong></td>
<td><strong>10,443</strong></td>
<td><strong>1,974</strong></td>
<td><strong>23,223</strong></td>
<td><strong>26,011</strong></td>
</tr>
</tbody>
</table>

*Source: PIDA Job Creation Toolkit*

The complete job estimate report for the project is available on the Toolkit. See [http://jobs.aupida.org/index.html#/projections](http://jobs.aupida.org/index.html#/projections)

### 4.4 Scenario Analysis for African Job Maximisation

A scenario analysis was done in order to explore options available to the ZRA for optimising the African job creation potential of the project, reducing investment leakages and the resulting African job losses. To this end, a series of scenarios were developed in an interactive process between the Project Owner and NEPAD’s energy and job creation experts.

After analysis, the decision was to define three scenarios with the potential for the highest job creation impact that were deemed achievable during the project lifecycle provided the Project
Owners, host governments, and contracting entities implemented specific actions. The three scenarios are as follows:

1. Source 100% of the cement and pozzolan (fly ash) needed for the project in the two host countries instead of importing from China. The cement would use Zambia and Zimbabwe's excess cement production capacity and also source fly ash from both countries' coal-fired power plants.

2. Source 100% of steel and metal fabrication needed for the project from South Africa and the host countries instead of importing from China. This local sourcing includes steel and metal fabrication of all steel structural work, head race, penstocks, valves and spill ways.

3. Source construction labour and professional labour at a higher level from the host countries in the scenario: increase construction labour from 60% in the baseline to 80%, and professional labour from 0% in the baseline to 40%.

### 4.4.1 Scenario Analysis: Job Creation Impact Resulting From Increase of Africa Inputs

In total, the scenario interventions would have the net combined effect of increasing the number of estimated annual jobs created during the construction phase of the project by an additional 10,628 estimated annual jobs (2,019 direct jobs; 4,579 indirect jobs; 4,030 induced jobs). Please note that the analysis does not include the secondary jobs effect as the underlying assumptions for their determination is based on electricity production over the life of the project. The impact by order of magnitude are as follows:

1) Sourcing cement in the host countries has the largest impact, resulting in 5,078 additional estimated annual jobs during the construction period (3,040 indirect jobs; 2,038 induced jobs).

2) Increasing the host country construction labour content results in 3,307 additional estimated annual jobs (1,370 direct jobs; 614 indirect jobs; 1,323 induced jobs).

3) Increased host country professional labor results in 1,175 additional estimated annual jobs (649 direct jobs, 215 indirect jobs, 311 induced jobs).

4) Sourcing fabricated iron and steel products in the host countries will add 890 estimated annual jobs (598 indirect jobs, 292 induced jobs).

5) Sourcing steel from South Africa results in an increase of 178 estimated annual jobs in South Africa during the construction phase.

Therefore the above five actions are expected to result in approximately 10,630 additional African annual jobs over the construction phase of the BGHES. However, it is important to note that most of these additional jobs are expected to occur during the construction phase of the project, with an estimated annual of 21,071 jobs (6,281 direct jobs; 6,655 indirect jobs; and 6,655 induced jobs). The estimates are summarized in Figure 4.4 below show that the scenario interventions would have a significant potential impact on the number of direct, indirect and induced jobs created during the construction phase.
Specific strategies for possible job maximization interventions are provided in the next section on job maximization, detailing actions at the project level, policy level (both governments and development partners) and by the private sector. It is important to note that the suppliers to the BGHES project result in indirect and induced jobs only.
5.0 OPPORTUNITIES FOR BATOKA GORGE HYDRO-ELECTRIC SCHEME JOB MAXIMISATION

The Project Owners of BGHES are committed to implementing actions required for transformative and sustainable job creation, significantly increasing the number and quality of jobs in Zambia and Zimbabwe, other beneficiary countries buying electrical power from the project, and any other African countries that supply inputs over the longer-term. This section discusses specific job maximisation actions for consideration, guided by the 10 specific actions set forth in the Toolkit MAXIMISE JOB GUIDE.

5.1 THE PROJECT CONTEXT: OVERALL SITUATIONAL ANALYSIS OF POTENTIAL FOR SOURCING AFRICAN INPUTS

This section has been developed with the aim of assessing the potential for sourcing construction inputs for the project from within the host countries and other African countries. The specific areas identified for interventions resulting in African job creation include raw materials (cement, fly ash, steel) and skills development. Other positive impacts are in the sectors of transport and tourism.

5.1.1 POTENTIAL FOR SOURCING OF AFRICAN CEMENT

Zambia has four major cement manufacturing companies namely Dangote Industries (Zambia) Ltd, Lafarge Cement, Amaka Cement, and Zambezi Portland Cement dominate the market. Lafarge has an installed capacity of 1.5 million tonnes per annum, originating from its Chilanga plant and Ndola factory. Dangote Industries (Zambia) Ltd and Zambezi Portland Cement Co. have production capacities of 770,620 tonnes per annum and 361,695 tonnes per annum respectively. In total, Zambia has a total installed production capacity of 3.6 million tonnes per annum against a total national demand of 1.8 million tonnes per annum.

Of the four cement plants, Dangote, Lafarge (Ndola plant) and Zambezi Portland Cement Co. are about 900km from the site of the BGHES, while Lafarge (Chilanga plant) and Amaka Cement are located about 500km from the project site. All plants are accessible by road and also near the railway line which would ease transportation of the cement to the project site.

Zimbabwe has a total of seven cement plants with a total installed capacity of 2.4 million tonnes per year, consisting of two integrated plants, four grinding plants and one clinker plant. The biggest operators are Pretoria Portland Cement (PPC), which has three plants (in Gwanda, Bulawayo and Harare) and Lafarge Cement, which has only one plant in Harare. PPC Zimbabwe operations have an installed production capacity of 760,000 tons per annum, with employment of 580 workers. Other manufacturers and plant capacities include Lafarge (450,000 tons per annum installed capacity), Livetouch Investments (400,000 tons per annum installed capacity) and Sino Cement (250,000 tons per annum installed capacity). The current demand is estimated at 1.3 million tons per year, thus leaving an excess national capacity of 1.1 million tonnes per year.

It is important to note that the Lafarge plant in Chilanga, Zambia was established in 1949 and commissioned in 1951 for the sole purpose of supplying cement to the Kariba Dam Project for its construction. In addition, the LaFarge plants in both Zimbabwe and Zambia were pivotal in supplying cement for the construction of the Kahora Bassa dam in Mozambique and other major infrastructure projects in the two countries. More recently, cement being used at Kafue Gorge Lower RCC Dam Project in Zambia was supplied by the Lafarge factory located in Chilanga.
In terms of the required type of cement for the BGHES, the quality and performances of the Portland cement (CEM I 42.5N) from Lafarge Cement Company meets the standard requirement (BSEN197-1) based on the tests undertaken. The distinctive features of Portland cement CEM I 42.5 N include rapid strength gain, high persistence in fresh water and in the air, high frost resistance. Cements for use in concrete conform primarily to the British/European Standard BS EN 197-1. Similar tests would be required for the other suppliers.

Therefore both Zambia and Zimbabwe may be able to provide the cement required for the construction of the Bataoka Gorge Project. However, two issues need to be addressed:

1) **Specifications**: The cement needs to meet exact specifications on both quality and price. Further engagement with the industry is necessary to ascertain their capacity to meet these requirements.

2) **Long-Term Contracts**: The cement providers would need to receive long term contacts with credible guarantees for them to invest in the required changes to meet the cement specifications.

The Project Owners will need to work with their partners to address these issues to secure the local sourcing of the required amounts and quality of cement.

### 5.1.2 Potential for Sourcing of African Fly Ash

Both Zambia and Zimbabwe have potential sources of fly ash (pozzolan), which is an important component of roller-compacted cement (RCC) dam construction. Fly ash use in concrete improves the workability of plastic concrete, and the strength and durability of hardened concrete. Fly ash use is also cost effective as when fly ash is added to concrete, the amount of portland cement is reduced.

Fly ash sources mainly include thermal power plants and blast furnace slag. Both countries have existing sources:

- **Zambia**:
  - To date Zambia has one thermal power plant, the 300MW Maamba Collieries Thermal Power Plant (MCL) commissioned in 2017. The company is the largest producer of coal in Zambia with estimated coal reserves of 103 million tonnes of high grade coal and 70 million tonnes of low grade coal. MCL is operating an open cast coal mine with a production history of almost 40 years. Maamba collieries was the main source of fly ash for the Kafue Gorge Lower Hydropower Project. The physical performances of the fly ash complied with the requirements of ASTM C618 and BS EN 450-1 for Conventional Vibrated Concrete. The thermal plant is located about 300km from the proposed site for the BGHES.

- **Zimbabwe**:
  - Zimbabwe has four coal fired thermal power plants: Hwange (920MW being expanded by an additional 600MW), Harare (90MW), Bulawayo (90MW), and Munyathi (100MW). Another potential source is the former ZISCO steel slag damp, which is currently being used by a Zimbabwe cement company to manufacture cement. Of these five potential sources, only Hwange and Maamba Colliery Thermal Power Plants are close to the BGHES site. Given transport costs, priority should be given to assess the available quantities and quality from Hwange and Maamba Colliery.
As a result, sourcing fly ash in the host countries would have immediate benefits for job creation.

5.1.3 POTENTIAL FOR SOURCING OF AFRICAN STEEL

Both Zambia and Zimbabwe have huge iron ore reserves but have relatively small and limited iron and steel industries.

- Zambia has a number of iron and steel companies manufacturing mainly round bars, deformed bars, flat bars, angles and corrugated Iron sheets manufacturers. The major companies include Universal Mining and Chemical Industries Limited (UMCIL), Safintra and MM Integrated Steel Mills (MMI). UMCIL is the largest steel maker in Zambia and has been in operation since 2008. Its products are certified by the South African Bureau of Standards (SABS) and have been used in major construction projects, which include Kafue Gorge Hydropower Plant, Kazungula Bridge Project, shopping malls, etc. However, UMCIL’s capacity is constrained by its dependence on scrap metal for raw material and therefore it is constructing an iron making plant capable of processing iron ore. Currently there are no capacity to produce hot rolled coils/sheets or tube production facilities.

- The situation in Zimbabwe is similar, despite its prior advanced state. Today the steel sector is largely now mothballed and in some cases liquidated. It is highly unlikely that any attempts to resuscitate the Zimbabwe steel industry will benefit from the construction of the BGHES.

Therefore absent a significant investment from the host governments and development partners, the bulk of steel products will likely be sourced from outside the host countries.

To increase sourcing from within Africa, specific actions could be implemented:

- South Africa has a significant steel industry that has successfully provided inputs to its own energy sector. To facilitate the sourcing of steel from South Africa, research needs to be done exploring sources, costs, and required interventions.

- Additional host country job creation could result if the host governments incentivise local supply of locally iron and steel products for steel fabrication of the steel super structures required for the dam.

Companies and experts can be consulted to evaluate the options for sourcing steel and metal fabrication, defining the required actions from the host governments, the South African government, development partners, and industry.

5.1.4 THE POTENTIAL FOR GREATER SOURCING OF AFRICAN LABOUR

Both Zambia and Zimbabwe have a number of Technical and Vocational Education and Training (TVET) programmes that are essential for the human capital development required to supply the jobs needed for the construction and operation of the BGHES. In terms of TVET colleges, there are six technical colleges in Zimbabwe and a corresponding number in Zambia. The power utilities in both countries also have technical colleges that are tailored to provide technical skills required by the utilities. In addition, there are over 40 registered universities in Zambia and 17 universities in Zimbabwe.
Of particular relevance is the Kafue Gorge Regional Training Centre (KGRTC), established in 1989 with the support of donor funding. Its main mandate is to provide competitive specialized training solutions in hydropower and to electricity utilities in the Southern Africa Development Community (SADC) and other regions of Sub-Saharan Africa. It offers various courses, which include a Diploma in Hydropower Development and Management, Hydropower Plant Operations, Hydropower Turbine Dynamics and Operations, Dam Safety Management, among others. However, KGRTC courses seem to be focused on developing the skills required for the operations and maintenance of energy projects, with little or no training related to the construction phase of a roller-compacted dam.

The implementation of the BGHES will require varied skill sets throughout the project life cycle. A skilled labour force is efficient and enhances the quality of the products and improves productivity. Over the last few years, neither of the host governments have sponsored extremely large projects such as the BGHES, resulting in a human capital skill gap. As a result, there is an urgent need to match the skill demands of the project with a trained workforce. The institutions of higher learning and TVET programmes need to tailor their trainings to the needs of the Batoka Gorge Project so the host countries can realise the potential job creation. Building the needed skills can be achieved through partnering with reputable international Roller Compacted Concrete (RCC) dam construction centres of excellence such as KGRTC as well as hydropower centres of excellence such as the Norwegian Hydropower Centre.

5.1.5 Other Potential Impacts

The BGHES can also help to spur growth in other areas, such as transport, tourism, and capital market development as summarised below.

**Transport:** Transport plays a critical role in the growth and development of the economy. It facilitates growth in value addition of construction, trade and commerce, tourism and in the delivery of social services such as education and health. Zambia and Zimbabwe are serviced by a major highway and railway line linking the two countries through the Livingstone/Victoria Falls border posts. In both cases the national railways have been operating well below the designed capacity due to lack of locomotives, poor track conditions and wagon ability as well as low operating capital. The road haulage and logistics transport sector in both countries is dominated by the private sector.

By far, the largest volume of materials that will need to be transported to the project site are primarily fly ash, cement, steel structures and electromechanical equipment. The primary sources of fly ash are Maamba Colliery Limited in Zambia (which is 300 km from the site) and Hwange Power Station in Zimbabwe (which is 160 km from the site). Given the short distances involved it may be possible to justify the rehabilitation of the railway sections thus enabling the railway companies to exploit the opportunities to transport the bulk of the fly ash to Livingstone and Victoria Falls for onward transportation to the site by road. However, the economic justification needs to be backed by a cost benefit analysis considering the project life cycle, annual road maintenance and rehabilitation costs and future transport sector opportunities arising from the growing economy.

It goes without saying that the project presents opportunities for private haulage and logistics transport companies to ferry the inputs required for the dam. Given the duration of the project, it is critical that the companies invest in reliable equipment which are fit for purpose, through access to capital backed by long term supply contracts. Therefore, ZRA needs to engage with local as well as regional banks to develop financing packages for the transport sector. Further, it is important for ZRA to expressly agree with the project developer the expected involvement of the transport sector.
In addition to the above transport opportunities, there are also opportunities for heavy equipment for dam construction, buses, and tour operators as well as flight charter companies to ferry workers and tourists to and from the site. Buses to ferry the workers can be provided by the contractors or sub-contracted to the private sector. The project will also open up job creation opportunities for fleet and heavy equipment maintenance. Thus strong links can be established with TVET institutions to supply the required manpower, thereby creating a pool of skilled personnel for future national projects.

All in all, the increased traffic volume will result in increased job creation, increased transport sector contribution to the Gross Domestic Product (GDP) of the host countries, and increased downstream opportunities.

**Tourism:** The Zambezi River is a major tourism attraction in its own right, complemented by two other major tourist attractions, the Victoria Falls and the Kariba Dam. Construction of the BGHES will enhance the attractiveness of the Zambezi River through the creation of the planned “Zambezi River Tourism Corridor.” Therefore the construction of the BGHES has the potential to attract domestic and international tourists before, during, and after construction. A recent example of the tourist attractiveness of the hydropower projects under construction include the Gibe III and Grand Ethiopian Renaissance Dams in Ethiopia. The latter is reported to have attracted over 25,000 visitors to date.

Domestic (local) tourism to the project site during construction is especially important if it is tied to domestic resource mobilisation to finance the project. It is an important component for confidence building as the citizens will be able to see the progress as well as appreciate how they are contributing directly to national development. The potential for this new aspect of tourism creates significant opportunities for job creation around various tourism services such as tour operators, plane charters, hotels, lodges, holiday cottages, self-catering facilities, campsites, restaurants, tourism shops and goods, and activities (e.g., game visits, crocodile farms, cable car views, etc). After the BGHES is completed, further jobs can be generated by water-based recreational activities such as sport fishing, boat trips, sunset cruises, and canoeing. The energy generated by the project will also be used to sustain these new tourism services.

In order to maximise the job creation potential resulting from the project, the ZRA will need to coordinate with the tourism sector (both public and private sectors) as well as the respective local governments to develop an integrated tourism development plan for the “Zambezi Valley Tourism Corridor.” The plan will need to integrate conservation and sustainability best practices, ensuring optimum utilisation of the dam by the larger population while not impeding the energy generation functions of the project. It will be important to attract private capital to fund all these activities.

**Host Country Capital Market Development:** BGHES is an extremely large project requiring over US$ 4 billion in funding. As set forth in the 5% Agenda 1 endorsed by African Heads of State, local pension funds could provide funding either directly or through intermediaries such as infrastructure bonds, infrastructure funds, banks, or other financial vehicles. For example, the issuance of Batoka Gorge Bonds in Zambia and Zimbabwe could provide a kick-start to the national economies.

---

1 For more information, see [https://www.nepad.org/news/official-launch-nepad-agencies-5-agenda-initiative](https://www.nepad.org/news/official-launch-nepad-agencies-5-agenda-initiative)
6.0 SPECIFIC ACTIONS: APPLYING THE TOOLKIT JOB MAXIMISATION GUIDE

To implement the prior interventions, the Project Owner in collaboration with the host and beneficiary countries would need to devise a job maximisation strategy and implement targeted actions. The Toolkit has a Job Maximisation Guide that set forth ten action steps:

1. Develop African Infrastructure Skills and Suppliers
2. Develop and Implement a Project Social Impact Management Plan (SIMP)
3. Create a Project Local Content Policy
4. Employ Labour-Intensive Methods Selectively
5. Require Project Procurement Programmes to Use African Suppliers
6. Focus National Procurement Policies on Youth and Gender
7. Launch a Sector Investment Program with Local Content Requirements or Incentives
8. Implement Tax Incentives that Increase Local Content
9. Adapt & Scale Educational Programmes
10. Crowd in Investors that Prioritize African Job Creation

The full Guide detailing the ten actions with examples and resources is available on the Toolkit.

The sections below provide suggestions of how to apply these ten job creation actions specifically to the BGHES. For each of the ten actions, action steps are detailed. For each action step, the potential roles of the Project Owner and public sector are outlined.

6.1 ACTION ONE: DEVELOP AFRICAN INFRASTRUCTURE SKILLS AND SUPPLIERS

The preparation, finance and development of infrastructure requires highly-skilled professionals, notably in infrastructure and project finance, engineering, legal contract negotiations (debt and equity finance, special purpose vehicles, service and equipment contracts), environmental and social impact analysis, sector requirements, etc. Given acute shortages of experienced local infrastructure professionals, infrastructure projects are largely implemented by international experts. In addition, project suppliers outside of Africa often provide project inputs, including equipment and in some cases even basic materials such as cement, steel, and iron.

The lack of an adequate supply of highly-skilled African professionals results in both higher costs and delays thus resulting in large job creation opportunity costs. Therefore the development of African infrastructure skills and African suppliers is an overarching urgent imperative enabling job creation and investable African infrastructure projects.

Specific action steps related to strengthening of local as well as African infrastructure workforce skills and suppliers need to be proactively implemented by the ZRA, Zambia & Zimbabwean governments and development partners in close coordination with potential project developers, providers of equipment and services, private companies, business associations, educational programmes, and prospective employees. Potential interventions are summarised in Table 5.2.
<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>Potential Actions for the BGHES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Create “Blended Learning Programmes” grounded in African universities in consultation with African infrastructure practitioners</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ZRA Project Owner with NEPAD’s Support</strong></td>
<td><strong>Host Government and Development Partners</strong></td>
</tr>
<tr>
<td>• Develop skills needs analysis for the different phases of the project, including required management, finance, engineering, legal, and construction supervision skills</td>
<td>• Provide support to the ZRA and seek input from business associations</td>
</tr>
<tr>
<td>• Develop and submit manpower requirements to relevant ministry of manpower in Zambia and Zimbabwe for financing and inclusion in national human development plans</td>
<td>• Provide advisory support based on national and regional educational competencies</td>
</tr>
<tr>
<td>• Develop funding proposals for potential support from development partners</td>
<td>• Provide funding and expertise to set up and conduct required training programmes for professional jobs</td>
</tr>
<tr>
<td>• Include the contractors, business community (e.g. local Chambers of Commerce, Construction Industry Associations, etc.) in the development of the plans</td>
<td></td>
</tr>
<tr>
<td>• Engage African universities (e.g. UNZA, UZ, etc.) and technical institutes to provide required training (with international support if needed)</td>
<td></td>
</tr>
<tr>
<td><strong>2. Create feeder TVET programmes for construction and maintenance jobs in consultation with African infrastructure practitioners</strong></td>
<td></td>
</tr>
<tr>
<td>• Develop skill needs analysis for the different phases of construction and operation</td>
<td>• Provide support to the ZRA and seek input from business associations</td>
</tr>
<tr>
<td>• Build partnerships with TVET programmes to develop, implement, and scale short courses</td>
<td>• Provide advisory support based on national and regional educational competencies</td>
</tr>
<tr>
<td>• Develop funding proposals for potential support from development partners</td>
<td>• Provide funding and expertise to set up required training for construction and maintenance jobs</td>
</tr>
<tr>
<td>• Develop and submit manpower requirements to relevant ministry of manpower planning in Zambia and Zimbabwe for financing and inclusion in national human development plans</td>
<td></td>
</tr>
<tr>
<td><strong>3. Create an African Suppliers Platform complemented with placement and recruitment programmes connecting the</strong></td>
<td></td>
</tr>
<tr>
<td>• Engage an expert to assess the “viability gap” between project requirements and local suppliers based on specifications of project construction and operation &amp; maintenance</td>
<td>• Fund expert to perform diagnostic of existing suppliers and required interventions to meet project specifications</td>
</tr>
<tr>
<td></td>
<td>• Develop strategies and implement interventions required to source</td>
</tr>
<tr>
<td>Toolkit Action Steps</td>
<td>Potential Actions for the BGHES</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>educational programmes above with employers</td>
<td>ZRA Project Owner with NEPAD’s Support</td>
</tr>
<tr>
<td>• Identify solutions (e.g. policy, training, recruitment, incentives, etc.) as appropriate</td>
<td>greater African content for the project</td>
</tr>
<tr>
<td>• Submit proposals to host governments and development partners to implement the required interventions</td>
<td></td>
</tr>
<tr>
<td>• Work with NEPAD to develop an African Suppliers Platform complemented by a placement and recruitment platform/programme using the BGHES as the first pilot project</td>
<td></td>
</tr>
<tr>
<td>4. Ensure procurement requirements and selection criteria focus on quality rather than price</td>
<td>• Provide weights that value African sourcing of African labour and suppliers (while ensuring quality and financial viability of project)</td>
</tr>
<tr>
<td></td>
<td>• Review and support proposed procurement terms</td>
</tr>
</tbody>
</table>

Summary of Specific Actions that can be implemented by BGHES – Opportunities for increasing African jobs include the following:

1) **Increase African raw materials:** The project can possibly increase the sourcing of raw materials if specific actions are undertaken:
   a. **Cement and Fly Ash:** The cement and fly ash could be sourced from the two host countries provided the quality and cost specifications for the project are met. In fact, already one private sector provider has indicated they are willing to produce the specific kind of required cement in the required quantities provided a suitable long-term contract is provided.
   b. **Steel:** The steel and related products could be sourced from the host and other African countries provided the quality and cost specifications for the project are met. The availability of the required steel and related products needs to be investigated with specific measures to ensure the required quality and quantity.

   The above actions will require expert support in ensuring the requisite local content and negotiating the associated procurement process and executing the related legal contracts.

2) **Increase the utilization of host country and other African construction workers:** The project can employ very large numbers of African construction workers provided adequate training and recruitment is provided. ZRA as Project Owner is committed to developing terms of reference in the international tender for the contractor that require training and local recruitment of African construction workers. In addition, development partners and project partners can be asked to help support local training and recruitment actions.
3) **Increase the utilization of African professionals:** The project can employ high quality African professionals such as engineers, finance experts, and project management provided adequate training and recruitment is provided. ZRA as Project Owner is committed to developing terms of reference for the contractor that require training and local recruitment of African professionals. In addition, development partners can be asked to help support local training and recruitment actions.

Therefore a significant number of additional African jobs can be created provided ZRA as Project Owner can work closely with partners in executing the required actions aimed at improving the skills and capacity of African labour and suppliers.

**6.2 ACTION TWO: IMPLEMENT A SOCIAL IMPACT MANAGEMENT PLAN (SIMP)**

Most governments and development partners worldwide require some type of social impact assessment for significant infrastructure projects. In fact, the importance of social impact assessments has increased with the increasing emphasis on the environment, often referred to as “Environmental & Social Impact Assessments (ESIAs).” Development institutions like the IFC have developed extensive handbook aimed at helping the operationalization of “Environmental and Social Management Systems (ESMSs)” that help companies to integrate key environmental and social rules and objectives into core business operations, through a set of clearly defined, repeatable processes.

To be effective, SIMPs need to be integrated into the design and business model of the project so they can maximize job creation while ensuring project performance and investability.

**Table 6-2: ACTION TWO: Batoka Gorge Hydro-Electric Scheme Potential Actions to Implement a Social Impact Management Plan (SIMP) Actions**

<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>oZRA Project Owner with NEPAD Support</th>
<th>Public Sector and Development Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Include a diagnostic in the SIMP, identifying the needs of the infrastructure project and potential for sourcing from African resources</td>
<td>-Develop a SIMP, starting with diagnostic the inputs that can be sourced locally e.g. Cement and identify opportunities for Tourism and local community empowerment. Could supply project.</td>
<td>-Provide support in funding SIMP and arranging for appropriate experts</td>
</tr>
<tr>
<td>2. Include a capacity-building strategy in the SIMP, defining the specific interventions required to increase African sourcing that fully meets the project's needs</td>
<td>-Request experts developing the SIMP to structure a capacity-building strategy that addresses viability gaps for inputs (including costs, quality, supply and other constraints), Tourism and community empowerment.</td>
<td>-Provides support in helping local suppliers meet viability gap, developing tourism opportunities as well as implementation of recommended community empowerment initiatives</td>
</tr>
<tr>
<td>3. Include a strategic assessment in the SIMP, identifying</td>
<td>-Request experts developing the SIMP to explicitly set forth risks, risk-</td>
<td>-Coordinate with experts to help devise risk mitigation solutions</td>
</tr>
</tbody>
</table>

23
### Toolkit Action Steps

<table>
<thead>
<tr>
<th>Action</th>
<th>Potential Actions for the BGHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project risks, risk-mitigation strategies, and opportunities</td>
<td>oZRA Project Owner with NEPAD Support - mitigation strategies, and opportunities</td>
</tr>
<tr>
<td>4. Include a systematic monitoring and reporting process in the SIMP against specific objectives</td>
<td>-Integrate the SIMP analysis and plan into on-going management accountabilities, including in monitoring and reporting</td>
</tr>
</tbody>
</table>

The BGHES Owner is fully aware of the imperative of developing a comprehensive social impact management plan. In fact the project’s ESIA underlines the need to develop such a plan. Funding will be required to execute this study.

### 6.3 **ACTION THREE: CREATE A PROJECT LOCAL CONTENT POLICY**

Africa's infrastructure projects are often developed with international expertise, services, equipment, and labour. In fact, some international investors require the use of their home country inputs. However, both developed and developing countries have requirements for certain levels of local content. Project owners can decide to have a local content policy absent a national host government policy. In addition, governments can create an enabling environment through incentives and/or regulations.

There are ample opportunities to integrate local content into a project's design and operations during the project preparation phase. A Project Local Content Policy is an important intervention at the project level to catalyse the required exchanges, assessments, and development of concrete strategies, policies, and training. It is important that policymakers create enabling environments for the adoption and effectiveness of project local content policies.

The host government(s), technical and financial partners, and local stakeholders can develop an overall Project Local Content Policy with support from the host government(s) and development partners to enable the deepening of long-term sustainable business relationships. To be effective, it is critical that local suppliers, contractors and communities increasingly participate in and benefit from the project's activities over time.

*Infrastructure projects can therefore jump-start the proactive identification and demand for possible African sources of materials, services, equipment, and labour through the formulation of Project Local Content Policies. Policymakers can reinforce and create momentum by implementing incentives and requirements, using technical and funding support, policies, and regulations to spur adoption and implementation. These local content actions will help accelerate the development of African businesses, investments, and supply chains. See below examples and resources.*
**Table 6-3: ACTION THREE: Batoka Gorge Hydro-Electric Scheme Potential Actions to Create a Local Content Policy**

<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>Potential Actions for the BGHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Include a Project Local Content Policy as an integral part of the project preparation process</td>
<td>ZRA Project Owner with NEPAD Support</td>
</tr>
<tr>
<td></td>
<td>• Include a local content policy as part of the project preparation process, assessing how to maximize the use of African professionals, construction labour, and African suppliers</td>
</tr>
<tr>
<td></td>
<td>• Provide the ZRA with support to identify potential local sources of labour and local/African suppliers</td>
</tr>
<tr>
<td>2. Require that the Project Local Content Policy include the formulation of practical specific local content requirements in each project contract</td>
<td>Public Sector and Development Partners</td>
</tr>
<tr>
<td></td>
<td>• Work with local industry and stakeholders to develop local content capabilities,</td>
</tr>
<tr>
<td></td>
<td>• Include local content requirements/specifications in the procurement Terms of Reference and project contract based on realistic assessments</td>
</tr>
<tr>
<td></td>
<td>• Provide support in helping local labour and suppliers meet project needs</td>
</tr>
<tr>
<td>3. Create an enabling environment that facilitates, incentives, and requires Project Local Content Policies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Implement policies and programmes that advance local content, including regulatory requirements, funding support, and advisory</td>
</tr>
</tbody>
</table>

Many large hydro projects import a significant portion of materials, equipment, and labour. However, the BGHES Owner is committed to maximising African content in the project. As noted earlier, there is a need for a detailed diagnostic of African local content and the required interventions to meet project specifications. The resulting evaluation would enable the specifications of a project local content policy.

### 6.4 ACTION FOUR: EMPLOY LABOUR-INTENSIVE METHODS SELECTIVELY

Over decades worldwide infrastructure projects have employed labour-intensive methods to increase employment. In fact, some studies have cited significant reductions in cost and foreign exchange requirements resulting from the use of labour-intensive methods.²

> Therefore a more comprehensive approach needs to be adopted for infrastructure projects that proactively evaluates when labour-intensive methods can be selectively implemented across

Policymakers and project owners can selectively integrate labour-intensive methods in their infrastructure projects by implementing specific actions steps.

**Table 6-4: ACTION FOUR: Batoka Gorge Hydro-Electric Scheme Potential Actions to Employ Labour-Intensive Methods Selectively**

<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>Potential Actions for BGHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conduct a scan of labour-intensive methods that could be relevant for the infrastructure project</td>
<td>ZRA Project Owner with NEPAD Support</td>
</tr>
<tr>
<td>2. Assess the trade-offs of each labour-intensive method against the more automated alternative</td>
<td>Engage labour experts to conduct a scan and provide to Project Owners</td>
</tr>
<tr>
<td>3. Analyse &amp; implement the best practices for labour-intensive methods, ranging from finance to training and MSME technical support</td>
<td>Include in the scan a generic analysis of labour trade-offs against automated alternatives</td>
</tr>
<tr>
<td></td>
<td>Public Sector And Development Partners</td>
</tr>
<tr>
<td></td>
<td>Select the best options consistent with project viability and investability and implements them</td>
</tr>
<tr>
<td></td>
<td>Provide support to labour-intensive suppliers (such as training, access to working capital/funds, tax incentives) and sets up recruitment programmes</td>
</tr>
</tbody>
</table>

The BGHES Owner is committed to providing employment for the local communities surrounding the project in both Zambia and Zimbabwe. A possible component could be the identification of labour-intensive methods to increase the number of jobs. This option would require analysis by both experts and the selected contractor. The project owner will include a requirement for such analysis in the terms of reference for the contractor.

**6.5 ACTION FIVE: REQUIRE PROJECT PROCUREMENT PROGRAMMES TO USE AFRICAN SUPPLIERS**

Infrastructure projects often import materials, services, and equipment from countries outside Africa. To encourage the development of African sources, African governments have national laws requiring some level of local content be required in their procurement programmes. Such requirements can also be on a project basis.

For example, the contracts related to the project’s construction could have local content requirements. Bidding documents can require third party contractors to outline a plan identifying which goods and sub-contracted services can be sourced from the host country. If training is necessary to bring local businesses up to the required standard for inclusion, the tender can request a provisional plan which will include any additional costs and a detailed schedule for its implementation.

Some African governments, notably South Africa, have championed the use of local content requirements with national legislation. In fact, many countries worldwide across both developed and
developing governments at national and subnational levels stipulate local procurement in project contract terms of reference. Project contracts could broaden the definition from local content to the use of African suppliers (i.e., sourced in either the host country or from another African country).

**Therefore project procurement programmes that incentivise the use of African suppliers present a powerful stimulus for job creation throughout the African continent if coupled with effective training and support interventions to ensure project viability.**

The BGHES could employ specific actions in government procurement programmes to increase African jobs, as illustrated in the below chart.

**Table 6-5: ACTION FIVE: Batoka Gorge Hydro-Electric Scheme Potential Actions to Require Project Procurement Programmes to Use African Suppliers**

<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>Potential Actions for BGHES ZRA Project Owners with NEPAD Support</th>
<th>Potential Actions for Public Sector and Development Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Policymakers can require that the project’s contracts have local content requirements</td>
<td>Request project procurement include local content requirements</td>
<td>Requires all bidders to comply with a certain level of African sourcing, specifying needs for training and any issues with increased costs</td>
</tr>
<tr>
<td>2. Governments and their development partners can work hand-in-hand with Project Owners and companies in establishing appropriate recruitment and training programmes</td>
<td>Specify the required training and recruitment support</td>
<td>Provide support to Project Owner with training and recruitment</td>
</tr>
<tr>
<td>3. Governments and their development partners can sponsor cost studies to document best practices, including possible long term cost reductions and the incubation of local supplier ecosystems</td>
<td>Ask government to provide advisory support on best practices</td>
<td>Provide input to Project Owner on public plans to support the growth of local suppliers and prospects of long-term cost reductions</td>
</tr>
</tbody>
</table>

Using their national procurement programmes, the BGHES Owner and their host governments can require all contractors to maximize the use of African content that meets their quality and quantity requirements. As noted earlier, a diagnostic assessment needs to be performed to assess the potential for African sourcing and required interventions.

**6.6 ACTION SIX: FOCUS NATIONAL PROCUREMENT POLICIES ON YOUTH AND WOMEN EMPLOYMENT**

The urgent imperative in Africa for increased employment of both youth and women has been recognized by African governments and their development partners. National procurement policies can increase youth and gender employment by both infrastructure projects and their suppliers.
YOUTH: Africa's youth population is expected to double to over 830 million by 2050, creating the potential and imperative of greater employment options. While infrastructure is a huge growth market growing in sync with Africa’s population, there has not been a systematic focus on mapping ways to employ youth across the various infrastructure sectors. However, some programmes like the AfDB Youth Job in Africa have been recently launched to address the issue.

WOMEN: A number of structural factors have been identified as limiting the employment opportunities for women and affecting SMEs that are managed/operated by women. Examples of these factors are the relatively low rates of business education and work experience, risk aversion, the burden of household management responsibilities and agriculture work, and the confinement of women’s businesses to slower growth sectors. Other factors include institutional and regulatory issues (e.g., lack of property rights and access to justice) and lack of access to finance. Policymakers can use national procurement policies related to infrastructure to increase the employment of women, bolstered by related gender-focused recruitment activities, training, and processes to enable access to finance.

Worldwide the increased employment of women has demonstrated undeniable significant impact. The World Economic Forum reports that there is a positive correlation between gender equality and a country’s level of competitiveness, its Gross Domestic Product (GDP) per capita, and its rank in the Human Development Index. Likewise, the World Bank (2012) reports, “When women’s labour is underused or misallocated—because they face discrimination in markets or societal institutions that prevents them from completing their education, entering certain occupations, and earning the same incomes as men—economic losses are the result.”

Therefore there is an urgent need to build on the successes to date in Africa in developing educational and procurement policies and programmes that systematically link infrastructure projects to existing youth and gender employment programmes and create new ones.

Policymakers can use national procurement policies related to African infrastructure to increase the employment of youth and women, bolstered by related recruitment activities, training, and processes to enable access to finance. Specific action steps related to the BGHES are provided below.

<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>ZRA Project Owner with NEPAD Support</th>
<th>Potential Actions for BGHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Incorporate specific requirements for youth and gender employment for all projects and programmes covered by national procurement policies</td>
<td>Insert quotas and/or incentives for youth and women into all requests for proposals</td>
<td>Implement outreach programmes, technical assistance, financial assistance, and business mentorship programmes with focus on youth and women</td>
</tr>
</tbody>
</table>

---

### Toolkit Action Steps

<table>
<thead>
<tr>
<th>2. Ensure that training and recruitment programmes related to infrastructure and its suppliers have quotas for youth and women, with focus on addressing their needs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potential Actions for BGHES</strong></td>
</tr>
<tr>
<td><strong>ZRA Project Owner with NEPAD Support</strong></td>
</tr>
<tr>
<td>Request governments to focus training and recruitment programmes on African youth and women, aligning training courses with the specific skill requirements for the project.</td>
</tr>
<tr>
<td>3. Ensure that SME suppliers that employ youth and women have access to finance enabling them to bid for infrastructure project contracts and have the capacity to wait for payments</td>
</tr>
<tr>
<td>- Identify entrepreneurial opportunities for youth and women during and after construction.</td>
</tr>
<tr>
<td>- Work with government and development partners to provide financial/technical assistance to SMEs/suppliers that employ youth and women etc.</td>
</tr>
<tr>
<td>4. Employ performance metrics and tracking to the above activities and provide regular updates to overment and development partners for public reporting, refining approach as needed</td>
</tr>
<tr>
<td>Include in all project reporting the employment of youth and women, including suppliers, documenting lessons learned, best practices, critical success factors, and metrics detailing training courses, on-the-job training, mentorships, etc.</td>
</tr>
</tbody>
</table>

The Project Owner is committed to implementing actions aimed at increasing the employment of African women and youth, and developing effective programmes with the public and private sectors with specific performance tracking metrics. The terms of reference for all project contractors will require contractors to propose specific youth and women employment strategies, detailing how they will implement recruit and training actions working with the local government and national host governments, universities, and vocational training centres.

### 6.7 Action Seven: Sector Investment Programme Local Content Requirements or Incentives

Many African countries lack suppliers across an entire sector. This also applies for the local supply of turbines and electromechanical equipment required for hydropower plants. Governments can launch sector infrastructure programmes as they have proven to accelerate the rate of project development and financial close. Therefore a key job creation action is the creation of national sector programmes with realistic local content requirements that create demand for local suppliers tied to a specific sector.

National policymakers have the option of developing sector programs with specified levels of local content. These specifications can be embedded in Requests for Proposals, as requirements and/or incentives. For example, preferences could be given to bidders with the highest local content. The
award criteria can provide weights for local content, increasing the weights over time as the country develops a greater supply and quality of required inputs.

Table 6-7: ACTION SEVEN: Batoka Gorge Hydro-Electric Scheme Actions to Create a Sector Programme with Local Content Requirements

<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>Potential Actions for BGHES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify a suitable sector for local content requirements by conducting an assessment of national potential for developing suppliers in different sectors</td>
<td>Work with host governments on potential spill-over impact on supplier sectors and ways to accelerate increases in African content (for example, cement, steel, transport, tourism etc.)</td>
<td>ZRA Project Owner with NEPAD Support</td>
</tr>
<tr>
<td></td>
<td>Coordinates with project owners, sector experts, investors, and suppliers to identify possible sector(s) that would benefit from a national programme</td>
<td>Public Sector and Development Partners</td>
</tr>
<tr>
<td>2. Design a sector programme that gradually increases local content for those materials, services, and equipment most suitable for the projects, ensuring that project viability and access to finance will not be jeopardized</td>
<td>Work with the host governments on realistic local content requirements and changes over time for each supplier sector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assist government to identify and develop opportunities for industrialisation that might result from the productive use of the energy produced by the project (e.g. mining and energy intensive beneficiation industries)</td>
<td></td>
</tr>
<tr>
<td>3. Ensure that government support is available for African suppliers, covering training and access to finance</td>
<td>Requests host governments to help African suppliers as needed with training, finance, etc</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scales programmes in support of African suppliers based on assessment of optimal impact</td>
<td></td>
</tr>
</tbody>
</table>

The BGHES is a mega project that can serve as a catalytic force for the development of key supplier sectors, such as cement and steel, as well as professionals such as engineers. The Project Owner is committed to providing input to the two host governments on the required specific actions that the project (and other energy projects) can be implemented to stimulate the further development of supplier sectors in the two host countries as well as other African countries.

Specifically, the Project Owner is developing recommendations on how to source all the cement for the project from companies within Zambia and Zimbabwe. In addition, the Project Owner is developing recommendations on how to source steel from South Africa.
6.8 **ACTION EIGHT: USE TAX INCENTIVES TO INCREASE LOCAL CONTENT**

Companies often lack the incentives to use local content and labour. Tax incentives are used worldwide as a policymaking tool to influence the behaviour of investment and company policies. They have been used in both developed and developing countries effectively, and are often applied to advance job creation. Therefore a key job creation action includes the constructive use of tax incentives that reward companies for increasing local content.

To ensure the effective use of tax incentives, specific action steps need to be implemented.

*Table 6-8: ACTION EIGHT: Batoka Gorge Hydro-Electric Scheme Actions to Use Tax Incentives to Increase Local Content*

<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>ZRA Project Owner With NEPAD Support</th>
<th>Public Sector and Development Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Map best practices in the use of tax incentives</td>
<td>Explore in collaboration with the investment promotion agencies of Zimbabwe and Zambia the tax incentive(s) could help the project targeted, EPC contractor, power plant concessionaire and local suppliers.</td>
<td>Work with the ZRA and partners to conduct a comprehensive study of tax incentives for the project to determine appropriate tax incentive(s)</td>
</tr>
<tr>
<td>2. Design menu of options based on research for testing</td>
<td>Develop a menu of tax incentive options comparing the resulting benefits to the local industry, community and the host governments</td>
<td>Recommend a menu of tax incentive options in the tax incentive study</td>
</tr>
<tr>
<td>3. Test potential incentives by discussing the options with infrastructure project owners and suppliers</td>
<td>Tests tax incentive options with potential contractors, project advisors, investors and local suppliers.</td>
<td>Participate in and supports testing of tax incentives in cooperation with Project Owner; Use results to refine tax incentives</td>
</tr>
<tr>
<td>4. Select and implement the tax incentives</td>
<td>Implement tax incentive(s) if approved by host governments and include them in the ToRs for the procurement of the EPC contracts as well as the power plant concessionaire.</td>
<td>Select tax incentive(s) based on feedback and implement.</td>
</tr>
<tr>
<td>5. Ensure that government support (e.g., training, access to finance, etc.) is available for African suppliers that could benefit from the tax incentives</td>
<td>Provide government with specifications of required support of African suppliers so they meet project requirements.</td>
<td>Provide requested support to African suppliers</td>
</tr>
</tbody>
</table>

The Project Owner is committed to exploring how tax incentives could be employed by the host governments to increase African jobs. Therefore the Project Owner will request the host
governments to consider the possibility of conducting a study to assess alternative tax incentives that might be included in the project’s terms of references.

6.9 **ACTION NINE: ADAPT & SCALE AFRICAN EDUCATIONAL PROGRAMMES IN COLLABORATION WITH JOB PROVIDERS**

African infrastructure potentially results in large economic impact across the entire continent, as the provision of services such as energy, transport, and communication provide the economic backbone for regional economic development, trade, and investment. However, given the current shortage of a skilled African workforce, the potential for economic impact and large-scale African job creation cannot be realised.

For this reason, public sector interventions aimed at maximising jobs from infrastructure have to address the continent’s overall skill deficit: *To provide skills that are needed across all sectors, from agriculture to trade, communications, manufacturing, mining, retail businesses, and the other economic sectors, it is imperative that TVET and other educational programmes be immediately adapted and scaled.*

In short, a broad-based action programme needs to be undertaken that addresses a key factor impeding African job creation - the lack of an appropriately skilled African workforce.

1) Despite extensive efforts, Technical and Vocational Education and Training (TVET), high school programmes, and university programmes are not equipped to deliver on African job maximization. An African Union review (2007) states that TVET systems in Africa differ from country to country and are delivered at different levels in different types of institutions, including technical and vocational schools (both public and private), polytechnics, enterprises, and apprenticeship training centres. In West Africa in particular, traditional apprenticeship offers the largest opportunity for the acquisition of employable skills in the informal sector. Universities have many graduates in engineering that are not employed.

2) Moreover, experts agree that there is a failure to effectively match between graduates from African educational programmes to job markets. Linkages between African providers of employment are considered weak.

3) In addition, there is a need to build in “climate smart” and leapfrog technologies that will drive the economies of the future.

> **Therefore there is a critical need to update the curriculum and build linkages between educational centres and employers, adding new programmes where needed. Unless effective linkages are created between employers and prospective skilled employees, the broad-based large-scale jobs resulting from Africa’s infrastructure services in energy, transport, and communication cannot be achieved.**

To correct this situation, specific action steps are required to adapt and scale existing TVET and other educational programmes in collaboration with job providers across the African continent.
### Table 6-9: ACTION NINE: Batoka Gorge Hydro-Electric Scheme Actions to Adapt & Scale African Educational Programmes

<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>Potential Actions for BGHES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Map and evaluate existing African educational programmes</strong></td>
<td><strong>ZRA Project Owner with NEPAD Support</strong>&lt;br&gt;• Identify the educational programmes that could provide training for the project employees&lt;br&gt;• Evaluate the existing human capital available in the country <strong>Public Sector and Development Partners</strong>&lt;br&gt;Provides the project with a list of educational programmes to enable effective recruitment, covering both universities and vocational programmes</td>
</tr>
<tr>
<td><strong>2. Assess the gap between labour demand and skills</strong></td>
<td><strong>ZRA Project Owner with NEPAD Support</strong>&lt;br&gt;• Evaluate candidates to assess any gaps in required skills&lt;br&gt;• Assess the skills gaps between what is available in the country versus the project requirements <strong>Public Sector and Development Partners</strong>&lt;br&gt;Support the project with experts who can help assess the skills capacity gap between project needs and available sources of labour</td>
</tr>
<tr>
<td><strong>3. Create a Directory of African Educational Programmes</strong></td>
<td><strong>ZRA Project Owner with NEPAD Support</strong>&lt;br&gt;Create a project directory of educational programmes that will be used by the project’s recruitment staff to identify prospective employees <strong>Public Sector and Development Partners</strong>&lt;br&gt;Supports the project in the development of a priority list of possible sources of African employment (based on above analysis of educational programmes and skill gaps)</td>
</tr>
<tr>
<td><strong>4. Align existing educational programmes with employer needs</strong></td>
<td><strong>ZRA Project Owner with NEPAD Support</strong>&lt;br&gt;Develop recruitment programmes with relevant educational programmes, and implements complementary project-specific educational curriculum development and training programmes as needed <strong>Public Sector and Development Partners</strong>&lt;br&gt;Support the project in the development of recruitment programmes and any additional complementary project-specific educational curriculum development and training programmes</td>
</tr>
<tr>
<td><strong>5. Create on the job training, internships, and apprenticeships, using policy levers (for example, tax breaks and levies)</strong></td>
<td><strong>ZRA Project Owner with NEPAD Support</strong>&lt;br&gt;Implement programmes to train and recruit African labour, also providing suggestions to the government on policy levers <strong>Public Sector and Development Partners</strong>&lt;br&gt;Coordinate with project to support training and recruitment, providing funding and technical support</td>
</tr>
<tr>
<td><strong>6. Recruit highly-skilled and experienced African professionals to jump-start the development and management of infrastructure assets</strong></td>
<td><strong>ZRA Project Owner with NEPAD Support</strong>&lt;br&gt;Could be done at two levels 1. by the contractor and 2. By the Utilities at the existing hydropower plants to start building up the human capital required during the operation phase of the project. <strong>Public Sector and Development Partners</strong>&lt;br&gt;Conduct a global outreach programme to attract highly skilled and experienced Locals worldwide to help develop and manage the project</td>
</tr>
</tbody>
</table>
The Project Owner is committed to ensuring the project proactively serves to recruit and train African professionals as well as construction and other workers, maximising African employment. Towards this end, the Project Owner will invest in the identification of possible educational programmes for recruitment, as well as develop project-specific educational programmes.

For example, the Harare Institute of Technology (HIT) could possibly serve to identify engineers for employment on the project during the construction phase as well as during the long-term operation of the project. The International Labor Organisation (ILO) has also committed to working with PIDA Projects to help match PIDA Projects with relevant vocational training and other educational organisations.⁴

### 6.10 Action Ten: Crowd in Investors that Prioritize African Job Creation

Many classes of investors have investment criteria that include African job creation but they do not have information on infrastructure projects and the significant jobs that they create. The constellation of investors includes governments, development partners, social impact investors, and African investors, notably pension funds. The AU-NEPAD 5% Agenda aims at mobilizing 5% of African pension fund assets under management (AUM) for African infrastructure.

The capital shortage for Africa’s infrastructure development can be addressed by demonstrating the estimated potential for job creation, providing potential investors interested in African job creation with the detailed information on projects and their potential economic impact.

The ZRA Project Owners with the support of the public sector can take specific action steps to crowd in pension funds and other investors as noted below.

---

**Table 6-10: ACTION TEN: Batoka Gorge Hydro-Electric Scheme Actions to Crowd in Investors that Prioritise Job Creation**

<table>
<thead>
<tr>
<th>Toolkit Action Steps</th>
<th>Potential Actions for BGHES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ZRA Project Owner with NEPAD Support</strong></td>
<td><strong>Public Sector with Development Partners</strong></td>
</tr>
<tr>
<td>1. Encourage Project Owners and their partners to use the Toolkit to estimate the jobs that can be created from financing the project</td>
<td>Share this case study with targeted investors including African pension funds and investment vehicles they invest in (e.g., infrastructure funds, banks, etc.)</td>
</tr>
<tr>
<td>2. Provide the job estimates to public and private sector investors</td>
<td>Include job estimates in all investor information</td>
</tr>
<tr>
<td>3. Develop messages and campaigns that help all stakeholders to see how investment and job creation can be developed hand-in-hand</td>
<td>Serve as a leader in designing an investable infrastructure projects that also integrates effective job creation interventions</td>
</tr>
<tr>
<td></td>
<td>Require other public project owners to use the Toolkit to estimate jobs as an instrument to explore how to increase employment and demonstrate the potential job creation impact</td>
</tr>
<tr>
<td></td>
<td>Include job estimates in all government project documents, websites, etc.</td>
</tr>
<tr>
<td></td>
<td>Request all government agencies to implement job creation interventions that are consistent with investment requirements, using best practices and expert support</td>
</tr>
</tbody>
</table>

ZRA with NEPAD's support will be approaching African pension funds and other investors to explore possible funding.
7.0 CONCLUSION

The BGHES can serve as a proof of concept to demonstrate ways that PIDA and other infrastructure projects can be designed and implemented to increase African jobs and their quality. As noted in the project documents (especially chapter 11 of the ESIA), it is essential that the project employs local workers and maximizes the public benefits resulting from the project, compensating the local communities for the considerable economic dislocations resulting from the project.

The approach set forth in the case study is intended to result in transformative job creation in the two host countries, as well as in the region, creating significant benefits for the local community and African countries. The risk profile of the project will also be reduced if the local communities and African countries perceive the realisation of concrete benefits, increasing the project’s investment attractiveness.

At a later stage the BGHES Case Study can be updated with the actual job creation data for direct and indirect jobs (if available), and an assessment of the lessons learned from job maximisation actions.
8.0 ANNEX

Below please find more details on key aspects of the Toolkit: (1) Toolkit methodology limitations and assumptions; (2) How to maximize jobs at the project level; (3) Glossary of Terms; (4) Acronyms from the Case Study; and (5) Conditions of Use.

8.1 LIMITATIONS AND ASSUMPTIONS

Users of the Toolkit will need to take into account its limitations and assumptions:

- The Toolkit job estimates like all job estimates are not precise forecasts; they are estimates of potential impact based on best practices rather than accounting numbers for business plans.
- The Toolkit job estimates are based on the project information provided by Project Owners and, in the case of missing information, the sector benchmarks. The more detailed and accurate the project information provided by the Project Owner, the more accurate the project’s job estimates.
- The Toolkit job estimates are limited to gross job additions, excluding the job losses that may result from the implementation of the infrastructure project.
- The Toolkit job estimations do not include the additional job creation generated by tax, lease, or revenue payments to the host country governments. For example, the Toolkit estimates would not include the additional jobs created by a government-owned energy project that uses profits to hire teachers.
- The Toolkit methodology uses Input-Output Tables (I-O Tables). Job creation methodologies worldwide use I-O Tables, as stand-alone project-based job estimation methodologies are cost-prohibitive given the need to employ a team of experts for in-depth interviews and assessments over an extended period.
- The Toolkit Team has created African I-O Tables for 54 African countries using the 2011 international database (GTAP), the only consolidated information source available. The 57 economic sectors covered in the African I-O Tables apply historical relationships between economic sectors, enabling an assessment of how “inputs” (specific expenditures within a given economic sector) create “outputs” (how new expenditures will affect jobs across all 57 economic sectors). In addition, the Toolkit Team has developed secondary job estimate methodologies based on formulas using key indicative data, and, in the case of transport projects, expert estimates of trade coefficients between countries.
- All I-O Table job estimates are based on the assumption that all industrial inputs and factors of production are used in fixed proportions and respond perfectly elastically. This means that the impacts are linear: (1) directly proportional to the size of the project without respect to economies of scale; and (2) prices do not change with demand. As infrastructure projects in Africa are transformative in their impact on national economies, the estimates of job creation could underestimate the magnitude of total job creation.
- Toolkit job estimates do not include any assessment or assumption of project viability. Project Owners are responsible for ensuring that the provided detailed project information and/or use of sector benchmarks are commensurate with project viability. Therefore Toolkit job estimates do not imply that projects are financially viable and do not provide any type of cost/benefit analysis, return on investment, or other measure of project viability.

The Toolkit methodology and its benchmarks will evolve over time, based on lessons learned and additional input from Project Owners, policymakers, experts, and users. For more detailed
information on the definitions used in the Toolkit, data sources, and the methodology including assumptions and limitations, please go to the Toolkit’s APPROACH page.

8.2  **WAYS TO MAXIMIZE JOBS**

A key foundational approach for maximizing jobs is at the project level, developing an effective Social Impact Plan and a Job Maximisation Strategy that mitigates local job disruption and ensures the project’s viability.

- **A Project Social Impact Plan can mitigate the possible adverse local community impacts of new infrastructure projects.** Toolkit job estimates do not include the possible local economic development losses that can result from new infrastructure projects. Existing local infrastructure sources and economic activities can be displaced. Examples of possible job loss and dislocation include prior energy and transport providers, such as sellers of diesel fuel, local community providers of transport, tourism providers, etc. It is therefore essential that each infrastructure project has a detailed Social Impact Plan that evaluates the impact of the project on the local community and provides a detailed support program developed with the local government for all adversely affected people in the community, enabling them to take advantage of the new job creation opportunities offered by the project as well as the resulting overall new economic efficiencies.

- **A Project Job Maximisation Strategy can mitigate the intrinsic trade-offs between local job creation and project viability.** An infrastructure project will not be financed or operated successfully if the job maximisation strategy results in the project not being financially viable. For example, sourcing local inputs such as cement, steel, and equipment from African countries may not be cost-competitive and/or meet the project’s quality standards. Likewise the available African sources of labour may not meet the skills requirements of the project. In these cases, the public sector must work closely with the technical providers (such as engineers and financial advisors) to design practical and viable sourcing and training solutions that enable the use of more African content and labour.

Details on possible interventions are included in the Toolkit module MAXIMISE JOBS. Future enhancements of the Toolkit could include training and implementation tools to achieve job creation-enabling critical success factors.

8.3  **GLOSSARY OF TERMS**

**Job Creation Definitions**

- **Job**: A job is defined as a “Full Time Equivalent (FTE),” equal to 40 hours a week in a five-day week. One FTE job is equal to 2,080 hours (eight hours per day for five work days per week).
- **Direct Jobs**: Jobs required to complete the infrastructure project (includes outsourced jobs, contractors, consultants, etc.).
- **Indirect Jobs**: Jobs created by the project’s suppliers of inputs (e.g. steel, electric equipment, professional services, etc.).
- **Induced Jobs**: Jobs resulting from direct and indirect employees of the project spending their salaries in purchasing goods and services.
- **Secondary Jobs**: Jobs resulting from the removal of an obstacle to growth, often termed “second order growth-effect” or “spill-over” jobs.
- **Average Annual Jobs**: Average Annual Jobs are the average number of jobs over the estimated life of the project.
• **Job Years:** Job year estimates combine data on the impact of an investment on the employment level at different points in time to get a measure of how many job years are created over the project life cycle, including project development, construction and the number of years that the project is expected to deliver its services provided adequate maintenance (i.e., until the project is estimated to stop operating or substantive refurbishing is required). Given the need to project job estimates for an infrastructure project, this definition is based on expert input on the practical useful life of an infrastructure asset assuming required on-going maintenance for a specific sector. Therefore this definition of useful life is not equivalent to the accounting useful life definition used for estimating the depreciation schedule in financial statements of the project. For example, if the construction of an infrastructure project requires 2,000 jobs to deploy over one year, the result is 2,000 job years. However, if the infrastructure has a useful life of 50 years, the total number of job years created would be 100,000.

• **Investment Leakage:** This term refers to the amount of project investment spent outside the project’s location. As the Toolkit is focused on African job creation, investment leakage refers to all investment spent outside Africa.

• **Type I Employment Multipliers:** This is a statistic used to measure the impact that direct jobs have on the suppliers of inputs to the infrastructure project. The measurement is calculated by adding the direct and indirect jobs and dividing them by direct jobs. The higher the multiplier, the more indirect jobs are created.

• **Type II Employment Multipliers:** This is a statistic used to measure the downstream impact generated by household spending of direct and indirect jobs generated by the project. The measurement is calculated by adding direct, indirect, and induced jobs and dividing them by direct jobs. The higher the multiplier, the greater the impact of the project on the larger economy. (This measurement typically does not include economic spill-over effects that result in secondary jobs.)

**Infrastructure Terms**

• **Project Life Cycle:** The Toolkit is designed explicitly as an instrument enabling project owners and policy makers to gain greater insights into project planning, construction, and operations and maintenance (O&M) and the implications for job creation. To meet this objective, the methodology separates infrastructure projects into the three major stages of the infrastructure project life cycle:
  - **Project Preparation:** The period in which a project is defined and activities are undertaken to enable financial close. This process involves the completion of the concept note, technical studies, the development of the business plan and financial models, the setting up of the legal vehicle, the securing of equipment and services, the establishment of contracts with buyers of the infrastructure service (off-take contracts), the mobilization of equity and debt finance and required support from development partners (including grants, risk mitigation, technical assistance, finance), and financial close.
  - **Construction:** The period in which the project is being constructed and equipment is installed until the facility is ready for operation.
  - **Operations & Maintenance:** The period of the projects’ operation over its useful life in which it is expected to deliver services (e.g., a bridge may be expected under adequate maintenance conditions to last 100 years).

**Data Sources and Methodology**

• **Global Trade Analysis Project (GTAP):** GTAP is the leading global database used for the analysis of developing country analyses given its detailed coverage across regions. The consultant developing the Toolkit’s African Input-Output matrices used the GTAP 9 Data Base, a global database consisting of regional input-output data, macroeconomic data,
bilateral trade flows, protection and energy data for the 2004, 2007 and 2011 reference years. Full documentation on GTAP 9 Data Base is available on the GTAP website and given in: Global Trade, Assistance, and Production: The GTAP 9 Data Base, Center for Global Trade Analysis, Purdue University. For more information, see https://www.gtap.agecon.purdue.edu/about/project.asp

- **Input-Output Tables (I-O Tables):** I-O Tables serve as the basis for national statistical frameworks and job creation methodologies worldwide. I-O Tables are the main economic approach to the analysis of economies, and supply the core foundation for scalable methodologies used to estimate jobs in both developing and developed countries. I-O analysis is a means of examining inter-industry relationships within an economy. It is a quantitative economic technique that represents the interdependencies between different branches of a national economy or different regional economies. It captures all monetary market transactions between industries in a given time period. The resulting mathematical formula allow for examinations of the effects of a change in one or several economic activities on an entire economy (impact analysis).

- **Industry Benchmarks:** Project Owners and their technical partners often have limited access to the detailed data on the projects required to estimate jobs, such as the breakout of project costs by economic sector (for example, how much being spent on equipment), the project’s expected useful life, or the average annual cost of operations and maintenance. For the specific data that is not available, industry benchmarks can serve as approximate benchmarks for estimating jobs.

- **Useful Project Life:** The number of years that the project is expected to deliver its services provided adequate maintenance (i.e., until the project is estimated to stop operating or substantive refurbishing is required). Given the need to project job estimates for an infrastructure project, this definition is based on expert input on the practical useful life of an infrastructure asset assuming required on-going maintenance for a specific sector. Therefore this definition of useful life is not equivalent to the accounting useful life definition used for estimating the depreciation schedule in financial statements.

**Job Creation Methods**

- **Linkage Programs:** In both developed and developing countries, a key focus for job creation is the building of linkages between smaller companies and larger companies, as well as sources of technical support, finance, and universities. For example, the IFC states that it has developed several programs that create linkages between SMEs and large businesses: “These linkages create powerful incentives for SMEs to build managerial and operational capacity within their own operations. By accessing new markets more effectively, SMEs create opportunities for long-term financial sustainability which can lead to increased job creation.” Source: https://www.ifc.org/wps/wcm/connect/REGION_EXT_Content/Regions/Sub-Saharan+Africa/Advisory+Services/SustainableBusiness/SME_Initiatives/

- **Micro, medium and small sized enterprises (MSMEs):** This term relates to the wide range of African-based enterprises.

- **Toolkit:** This term refers to the PIDA Job Creation Toolkit.

- **TVET (Technical and Vocational Education and Training):** This term refers to education and training which provides knowledge and skills for employment. TVET uses formal, non-formal and informal learning. TVET is recognised to be a crucial vehicle for social equity, inclusion and sustainable development.
### 8.4 Acronyms from the Case Study

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AfDB</td>
<td>African Development Bank</td>
</tr>
<tr>
<td>AUDA - NEPAD Agency</td>
<td>African Union Development Agency</td>
</tr>
<tr>
<td>BSEN197-1</td>
<td>Standard requirement for cement</td>
</tr>
<tr>
<td>CAPCO</td>
<td>Central African Power Company, the predecessor of the ZRA</td>
</tr>
<tr>
<td>CEM I 42.5N</td>
<td>Standard requirement for Portland cement</td>
</tr>
<tr>
<td>ESIA</td>
<td>Environmental &amp; Social Impact Assessment</td>
</tr>
<tr>
<td>ESMS</td>
<td>Environmental and Social Management System</td>
</tr>
<tr>
<td>HIT</td>
<td>Harare Institute of Technology</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labor Organisation</td>
</tr>
<tr>
<td>KGRTC</td>
<td>Kafue Gorge Regional Training Centre</td>
</tr>
<tr>
<td>k/Wh</td>
<td>Kilowatts per hour</td>
</tr>
<tr>
<td>MCL</td>
<td>Maamba Collieries Thermal Power Plant</td>
</tr>
<tr>
<td>MW</td>
<td>Megawatts</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>Operations and maintenance phase of an infrastructure project</td>
</tr>
<tr>
<td>PIDA</td>
<td>Programme for Infrastructure Development in Africa</td>
</tr>
<tr>
<td>PPA</td>
<td>Purchase Power Agreement</td>
</tr>
<tr>
<td>RCC</td>
<td>Roller Compacted Concrete</td>
</tr>
<tr>
<td>RIITP</td>
<td>NEPAD's Regional Integration Infrastructure and Trade Programme</td>
</tr>
<tr>
<td>SABS</td>
<td>South African Bureau of Standards</td>
</tr>
<tr>
<td>SAPP</td>
<td>Southern African Power Pool</td>
</tr>
<tr>
<td>SADC</td>
<td>Southern African Development Community</td>
</tr>
<tr>
<td>SIMP</td>
<td>Social Impact Management Plan</td>
</tr>
<tr>
<td>Toolkit</td>
<td>PIDA Job Creation Toolkit</td>
</tr>
<tr>
<td>TVET</td>
<td>Technical and Vocational Education and Training</td>
</tr>
</tbody>
</table>
The PIDA Job Creation Toolkit contains job estimation methodologies and access to materials drawn from many sources. Materials provided on this site are provided "as is", without warranty of any kind, either express or implied, including without limitation, warranties of merchantability, fitness for a particular purpose, currency, and non-infringement. The NEPAD Agency, GIZ, and the Global Clearinghouse for Development Finance (together, the "Partners") specifically do not make any warranties or representations as to the accuracy, authenticity, completeness, or currency of any such materials. The inclusion of, or reference to, any materials on this site do not mean that they are in any way approved, endorsed, or recommended by the Partners. The Partners may periodically add, change, or update the materials on this site and modify site functionality without notice.

The materials are reference materials for information ONLY and should not be relied on as a substitute for specific legal or other advice. Any sample wording or other materials contained or referred to in this Web site are not to be used as "models."

Under no circumstances shall the Partners be liable for any loss, damage, liability, or expense incurred or suffered, which is claimed to have resulted from use of this site, including without limitation, any fault, error, omission, interruption, or delay with respect thereto. Use of this site is at user's sole risk. Under no circumstances, including, but not limited to, negligence, shall the Partners be liable for any direct, indirect, incidental, special, or consequential damages, even if the Partners have been advised of the possibility of such damages.


The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of the NEPAD Agency or its Partners. The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the NEPAD Agency concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Links to third party Web sites are made for your convenience and do not imply that they are endorsed by the Partners. The Partners are not responsible for the content of any third-party Web site or any link contained in a linked site. The linked sites are not under the control of the Partners.