PIDA Job Creation Toolkit

https://jobs.au-pida.org

Overview

Aims at maximizing African jobs during preparation, construction, and operation of infrastructure projects

1. **Estimate Number and Types of Jobs:** Helps **project owners, technical partners, and government policy makers** to estimate the full spectrum of jobs created from projects including:
   - **Direct jobs :** jobs during preparation and construction
   - **Indirect jobs :** jobs by suppliers to the project
   - **Induced jobs :** jobs by spending of direct and indirect workers
   - **Secondary jobs :** jobs as a result of improved infrastructure service from completed projects (economic spill-overs)

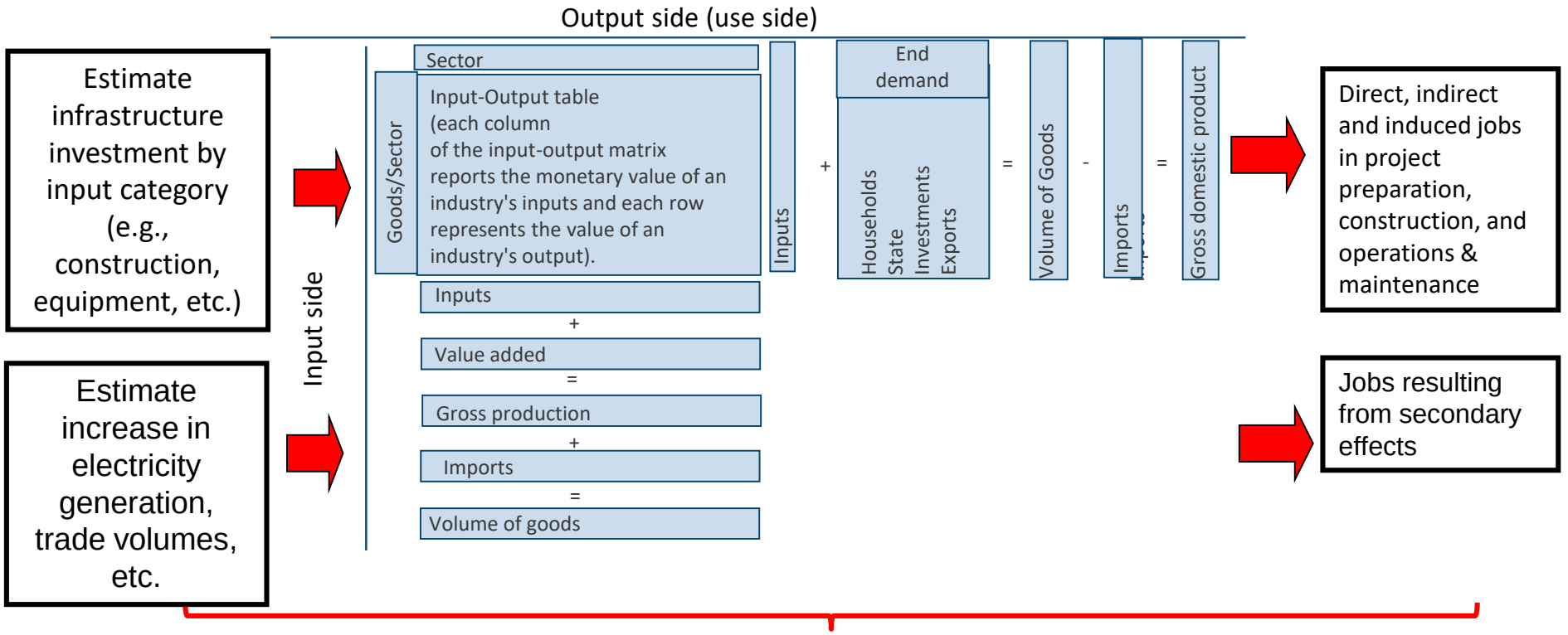
- disaggregate job estimates by sectors of the economy in which jobs are created

Overview

2. **Job Maximization Interventions:** explore the possibilities of increasing the number and quality of jobs
   - develop **job maximization scenarios** to test how different project inputs and country sources change the level and country location of estimated jobs
   - provide range of **job maximization policies**, **programs**, **processes**, etc.
3. **Case Studies:** provide examples from both developing and developed countries that leverage existing project & policy interventions;

Utilizes national **Input-Output tables** covering African countries generated from the Global Trade Analysis Project (GTAP) database consisting of regional input-output data, macroeconomic data, bilateral trade flows.

JOBS ESTIMATION USING INPUT-OUTPUT TABLES



- I-O tables depict **the interdependencies between economic sectors**, and are **used to estimate the impact of positive or negative economic shocks on an economy (investment in infrastructure is a positive shock)**
- I-O Tables assumes that some inputs (investment in infrastructure) are used by sectors that produce output (intermediate output), which in turn is sold to another sector for consumption (final output); total output adds intermediate and final outputs
- By using labor productivities, one can calculate job creation from output

THE PIDA JOB CREATION TOOLKIT

PROGRAM FOR INFRASTRUCTURE DEVELOPMENT IN AFRICA (PIDA)

Welcome to the Job Creation Toolkit aimed at maximizing the African jobs resulting from the preparation, construction, and operation of Africa infrastructure projects. Project Owners, technical partners, and government policy makers can estimate the total job impact from their projects (including indirect, induced, and economic spill-over jobs) and also think through possible ways to increase the number and quality of African jobs. Click one of the four buttons below to estimate jobs, access the job database, review options to maximize jobs, and telescope into case studies.

ESTIMATE JOBS HERE	ACCESS JOBS PROJECTIONS	MAXIMIZE JOBS	TELESCOPE INTO CASE STUDIES

Implemented by giz

Output Example: AVERAGE ANNUAL JOB ESTIMATE

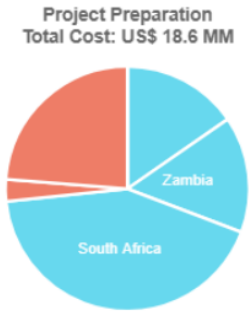
Exhibit 2: Average Annual Job Estimates by Project Phase for Batoka Gorge Hydro Electric Power Scheme

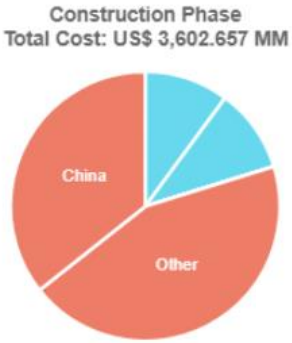
TYPE OF JOB CREATION	Project Preparation	Construction	Operation & Maintenance	Total*
NUMBER OF YEARS IN EACH PROJECT PHASE	5	7	50	62
Direct Jobs	120	4,262	861	1,185
Indirect Jobs	38	2,076	375	540
Induced Jobs	50	4,105	738	1,063
Secondary Jobs	—	—	—	24,153
TOTAL AVERAGE JOBS	208	10,443	1,974	26,941

Output Example: PROJECT INVESTMENT & COUNTRY SOURCES

Exhibit 1: Batoka Gorge Hydro Electric Power Scheme : Amount and Location of Investment per Project Phase

Location Where Project Investment Spent	Total Project Preparation Costs	Total Construction Costs	Annual Cost of Operations & Maintenance	Over Project Life Cycle
Total Costs (US$ MM)	18.6	3,602.657	29	5,071.26
INVESTMENT SPENT IN AFRICA (percent total investment)				
Zimbabwe	15.4%	10.1%	32.5%	16.5%
Zambia	15.4%	10.1%	32.5%	16.5%
South Africa	42.6%	0.0%	0.0%	0.2%
INVESTMENT SPENT OUTSIDE AFRICA ("investment leakage")				
Other	2.9%	44.0%	35.0%	41.3%
European Union	23.8%	0.0%	0.0%	0.1%
China	0.0%	35.6%	0.0%	25.3%
Total	100.0%	99.8%	100.0%	99.9%





LEGEND
African Job Creation
Investment Leakage

Financial Attractiveness		Description & Example
Context Conditions	Country Risks	The risks of non-payment by companies or governments in a given country caused by conditions or events outside any developer's control e.g. Euler Hermes Country Risk ratings
	Regulation	Project implementation will be facilitated in case there is an enabling regulatory framework regarding operations, and it exists harmonization between the concerned countries e.g. there is a specific regulatory framework for operations in the sector
	Access to Financing	The financial institutions must be willing and capable to finance the project (Local and International)
	Investment Activity	The private sector' appetite can been measured through the track record of private sector investments made in similar projects in the sector and in the countries involved e.g. Private Participation in Infrastructure (PPI) project database
Project Conditions	Political Support	The Governments involved have endorsed the project e.g. included in a sector master plan, multiannual budget, government project pipeline or it has been publicly announced by the Government.
	Governance	Good project management capacity is necessary for project success, especially when tackling the complexity of cross-border projects.
	Project Soundness	The documentation relative to the project's stage attains international standards. Projects beyond stage 2A should provide key financial ratios and a financial model e.g. Equator Principles
	Risk Management	The following risks must be clearly identified and allocated to the public and private sector e.g.: (i) Revenue certainty; (ii) Operational risks; (iii) CAPEX risks; (iv)Technology risks; (v) Environmental/Social risk; and (vi) Financial risks e.g. risks have been clearly identified and allocated with no unmanageable red flags raised

Output Example: ESTIMATED JOBS BY ECONOMIC SECTOR

Zimbabwe

ECONOMIC SECTORS	Induced Preparation Phase Jobs	Induced Construction Phase Jobs	Induced O&M Jobs	Secondary Jobs During Operations Phase	Total Jobs in Operations Phase
Agriculture & Food Products	2	71	16	101	118
Textiles, Apparel, Leather	0	21	4	37	42
Wood & Paper Products	0	7	2	64	69
Mining	0	55	13	1,755	1,834
Cement, Mineral, Chemical, Petroleum & Other Products	0	22	3	12	21
Metal Products	0	14	2	31	47
Manufacturing	0	14	2	164	177
Electricity, Gas, and Water Generation & Distribution	0	40	2	7,732	7,740
Construction Labour	0	0	0	6	328
Trade	1	131	22	233	271
Transport	0	52	9	278	298
Communication	0	11	1	43	49
Financial Services	0	5	1	39	41
Business Services	0	5	1	33	149
Other Services	0	5	1	29	30
Public Administration	5	153	34	118	305
Total Average Annual Jobs	**8**	**606**	**113**	**10,675**	**11,404**
Time Period	**2014-2019**	**2019-2026**	**2026-2076**	**2026-2076**	**2026-2076**
Duration (years)	**5**	**7**	**50**	**50**	**50**

Zambia

ECONOMIC SECTORS	Induced Preparation Phase Jobs	Induced Construction Phase Jobs	Induced O&M Jobs	Secondary Jobs During Operations Phase	Total Jobs in Operations Phase
Agriculture & Food Products	3	3,249	519	985	1,541
Textiles, Apparel, Leather	0	1	0	26	26
Wood & Paper Products	1	7	2	106	112
Mining	0	1	0	3	4
Cement, Mineral, Chemical, Petroleum & Other Products	0	8	1	49	52
Metal Products	0	0	0	3	3
Manufacturing	0	0	0	20	20
Electricity, Gas, and Water Generation & Distribution	0	14	0	3,919	3,920
Construction Labour	0	0	0	1	330
Trade	3	144	23	5,690	5,730
Transport	0	19	7	755	772
Communication	0	11	1	257	262
Financial Services	0	20	3	551	557
Business Services	0	9	1	73	167
Other Services	27	12	64	58	126
Public Administration	0	2	1	984	987
Total Average Annual Jobs	**34**	**3,497**	**622**	**13,480**	**13,987**
Time Period	**2014-2019**	**2019-2026**	**2026-2076**	**2026-2076**	**2026-2076**
Duration (years)	**5**	**7**	**50**	**50**	**50**

Job Creation Toolkit Limitations

- As a scalable job estimation model, the Toolkit automates best practices based on I-O Tables, in contrast to one-off studies of infrastructure projects, requiring lengthy and resource intensive processes
- The Toolkit foundations are the Input-Output matrices for countries developed from the available 2011 GTAP database
- Input-output methodology depicts a static view of a country's economy, potentially underrepresenting additional spillovers due to the dramatic impact of infrastructure
  - This limitation is compensated partially by supplementing job estimates with secondary effects
- The accuracy of Toolkit estimates is a function of the quality of data input for each project (cost and allocation by input)
- Job estimates are **potential** – *actions to realize jobs are required!*
- Nine subsectors are covered in the current toolkit

Upgrading the Job Creation Toolkit

Currently underway to:

- Update the I-O tables for all countries as per the new version of GTAP database (with 2014 reference year)
- Add the capability to estimate jobs for more sup-sectors
- Enhancing the scenario manager
- Refine estimation outputs (disaggregation by gender, age and occupation)
- Improve the interface and user interactions

Toolkit for PIDA PAP II Project Selection

Catalyzing Job Creation is one of the project selection criteria for PIDA PAP II

- **Selection Criteria**: Each project under PIDA-PAP 2 should maximize total job creation in adjoining regions
- **Screening methodology**: Average Annual Jobs per Million USD spent will be computed through the PIDA Job Creation toolkit. This job/$ ratio will allow a direct comparison between projects.

Toolkit for PIDA PAP II Project Selection

- **Project Scoring**: Projects which do not produce highest number of Annual Jobs per Million USD spent, receive rounded-up score in proportion to the project with highest job creation
  - E.g. Project creating 200,000 Annual Jobs per Million USD spent when the project with highest job creation per US $1,000,000 creates 300,000 jobs will receive a score of = ROUNDUP[(200,000/300,000) *5] = ROUNDUP[3.34] = 4
  - Project with highest number of Annual Jobs per Million USD spent gets **5 points**

THANK YOU