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This inaugural edition of the PIDA Jobs Outlook is developed by the African Union Development Agency (AUDA-NEPAD) and supported by Gesellschaft für Internationale Zusammenarbeit (GIZ) acting on behalf of the German Ministry for Economic Cooperation and Development (BMZ).

The countries and projects profiled in the PIDA Jobs Outlook are those that have relevant data available in the Virtual PIDA Information Centre (www.pida.africa). The PIDA Job Creation Toolkit uses this data to generate the employment estimates depicted in this PIDA Jobs Outlook.

The PIDA Job Creation Toolkit can be accessed at jobs.au-pida.org

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FOREWORD



Dr Ibrahim Assane Mayaki - CEO AUDA-NEPAD

Africa's growing population is set to reach more than 2 billion by 2050, contributing to rapid urbanisation that will see more than half the population residing in cities and major towns by 2030. While other parts of the world are grappling with an aging population, statistics from the United Nations show that Africa finds itself in the unique position of having close to 70% of its people under the age of 30. This young population currently makes up 40% of the workforce but is also heavily affected by unemployment. Every year, between 10 and 13 million African youths enter a labour market that is only able to absorb less than 30% of them. As such, our youthful population can be a resource for innovation but if not employed or engaged in economic activity, it can also be a liability. The imperative for Africa to create sustainable jobs and employment opportunities at a rapid pace is thus not debatable.

In this respect, Agenda 2063 recognizes the role of infrastructure development as a means to accelerate development and it is widely accepted that infrastructure development is a critical element of both service delivery and employment creation. It is in this spirit that the Programme for Infrastructure Development in Africa (PIDA) was designed

– to not only address Africa's infrastructure deficits but the issue of employment and job creation as well. While investments in cross-border infrastructure are slowly picking up, the benefits of local employment are not being fully realised in part due to a lack of data that can inform policies to prevent many potential "African" jobs to develop and operate infrastructure, being outsourced.

The Job Creation Toolkit has been developed to enable stakeholders to quantify the jobs potential of infrastructure projects so as to situate their development impact and the opportunity cost of slow PIDA project implementation. By analysing the jobs potential over the cycle of implementation and lifetime of operation, project owners and policy makers can take necessary steps to ensure that they are well prepared to reap maximal benefits from the projects.

We hope that the Toolkit will enable us to recognise and deal with the unacceptable costs of

inaction in developing our infrastructure; the current pace of infrastructure development and access to finance is not sufficient, especially in light of the demographic bulge and unmet needs of our people. The Toolkit is thus intended to catalyze renewed focus on African jobs in the development and operation of Africa's infrastructure projects, maximizing the number and quality of African jobs. We urge our stakeholders to use the Toolkit to make jobs estimations an intrinsic part of infrastructure project development, operation, and finance, integrating considerations of African job creation into decisions related to project design and implementation.

The inaugural PIDA Jobs Outlook features jobs estimates from selected projects in the PIDA portfolio. In this edition the countries profiled are those for which there is relevant and essential data as captured in the virtual PIDA Information Center (VPIC). The countries profiled are those that have relevant data on PIDA projects imple-

mented in their countries or those that are direct project beneficiaries. It is the goal of AUDA-NE-PAD to continue to build on this inaugural edition so that eventually all active PIDA projects will be covered and all countries will have jobs estimates for their PIDA projects. We hope that our stakeholders and partners will find value in the PIDA Jobs Outlook and will continue to partner with us as we work to unlock employment opportunities for Africa's people.



INTRODUCTION

As the implementing agency for PIDA, the Afterms of the cross-border and large-scale nature behalf of the German Ministry for Economic Cooperation and Development (BMZ) developed an econometric modeling methodology that estimates the labor market effects of PIDA projects. In 2017 the Ministerial meeting on Infrastructure in Lomé, Togo requested the African Union Commission (AUC) and AUDA-NEPAD to develop a tool to estimate, integrate and promote job creation through infrastructure development. Thus, the PIDA Job Creation Toolkit will be the continent's primary tool to estimate, monitor and evaluate the labor market effects of regional infrastructure.

The demonstration of labor market effects helps to raise the political and financial commitment necessary for PIDA project implementation. In

rican Union Development Agency (AUDA-NE- of infrastructure projects in Africa, the develop-PAD), support by the Deutsche Gesellschaft für ment of such a consistent and practical method-Internationale Zusammenarbeit (GIZ) acting on ology is unprecedented. Moreover, PIDA project owners and their partners can use the Toolkit as a policy planning instrument to assess how alternative project designs may impact African job creation and skills development.



METHODOLOGY

The PIDA Job Creation Toolkit methodology estimates direct, indirect and induced labor market effects during the planning, construction and operation & maintenance (O&M) phases of PIDA projects. Additionally, the methodology estimates secondary job effects, which are those jobs that are being created in other sectors of the economy due to the operational infrastructure service provided (e.g., improved energy access). The employment results illustrated in this brochure are expressed in job years: The total number of job years over the lifetime of a project. One job for one year is one "job year." If that job continues for another 12 months, it is two "job years." For example, if a project worker is working 5 years, the total job years for that worker is 5 years.

The methodology's underlying foundation assumes that project total investment costs will lead to the purchase of goods and services

within an economy, which will then create employment. To categorize between the type of jobs and project phases, total project investment costs are broken down per preparation: construction and O&M phase costs. These project costs are considered as industry inputs to the economy, which will yield outputs in the form of direct, indirect and induced jobs i.e. project costs investment split between inputs for project phases purchase of goods and services. Toolkit users thus have to input the project investment data per project phase and specific inputs into the toolkit survey to retrieve job estimates. The minimum data required for the Toolkit to estimate jobs are construction costs. If only this value is provided, the Toolkit uses sector-specific benchmarks for the other inputs.

To generate job estimates Input-Output (I-O) tables are required and as such national

I-O tables for all African countries have been generated. The I-O tables are used by governments, development institutions, and international organizations worldwide as best practice, these describe the sale and purchase-relationships between producers and consumers in an economy. As I-O tables depict the interindustrial flow of goods and services per input to the economy, inter-sectoral coefficients can be used to estimate the additional employment being generated by the project investments (purchase of goods and services) on each host country's national economy.

The methodology can account for missing data: as not all projects provide the investment breakdown for preparation, construction and O&M costs, sub-sector specific industry ratios per project phase serve as a benchmark to provide

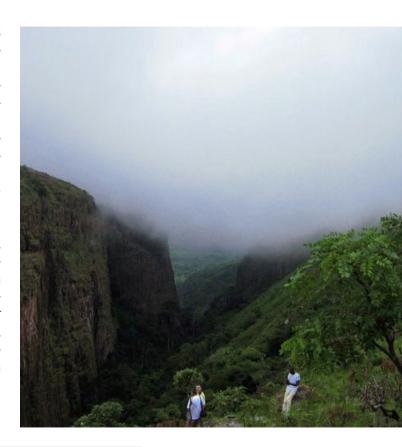
the needed investment input to the economy.

The estimation of secondary iob effects is sectorspecific and uses chain ratio analysis to estimate the economic spillover effects based on the specific sector. For example: in the case of energy generation, the methodology begins by subtracting distribution and transmission losses from the projected additional power supply of the respective project. This adjusted number is then converted to the dollar value of additional supply per kWh to calculate the total electrical input in USD value, which is then entered as additional electricity input in the I-O table to calculate its overall economic impact. The secondary job impact of a PIDA Project is usually the largest, given its transformative impacts, such as increasing a country's supply of energy or the ability to increase trade flows across countries.

In this PIDA Job Outlook you will find:

- Estimates of direct, indirect and induced jobs in job years during the preparation, construction and O&M phase
- Estimates of secondary jobs in job years resulting from anticipated improved infrastructure services
- Data on countries top three performing economic sectors based on secondary jobs estimations in job years and selected projects
- Country population statistics to contextualize job estimates in job years

Kindly note that the Outlook only captures PIDA transport and energy projects under construction and O&M for which relevant data has been reported under the Virtual PIDA Information Center (VPIC). AUDA-NEPAD encourages Member States to provide updated data for their PIDA projects; the number of PIDA projects per country are listed in Annex 1. For more information on the Job Creation Toolkit visit: jobs.au-pida.org

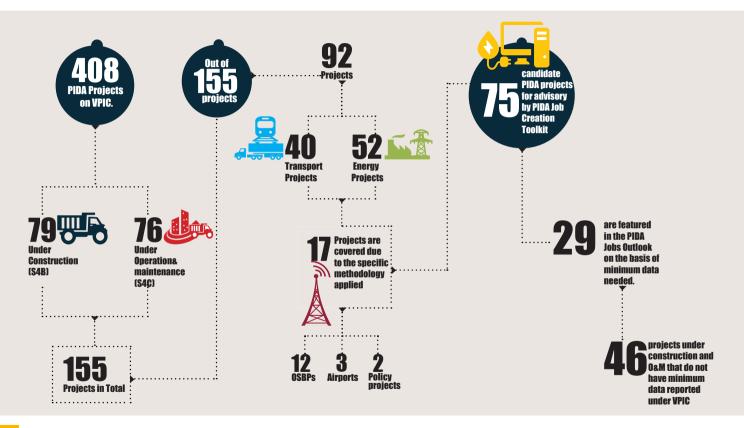


DEFINITIONS

Term	Definition	
Direct Jobs	Jobs created directly by the project activities	
Indirect Jobs	Jobs created by suppliers to the project	
Induced Jobs	Jobs created due to the additional spending arising from direct and indirect jobs created.	
Secondary Jobs	Jobs created in the wider economy due to the infrastructure service provided	
Job years The total number of job years over the lifetime of a project. One job for one ye is one "job year." If that job continues for another 12 months, it is two "job years For example, if a project worker is working 5 years, the total job years for that worker is 5 years.		

Based on the above definitions, the job categories reported per country may vary depending on type of project and whether the country is a direct implementer or beneficiary.

PIDA PROJECT SELECTION FLOWCHART







9 PIDA Projects

5 UNDER CONSTRUCTION

IN THE PIDA TOOLKIT



BENIN

Direct Jobs Years: 1,636 Indirect Jobs Years: 1,065 Induced Jobs Years: 727

Secondary Jobs Years: **241,753**Total Jobs Years estimated: **245,180**

PIDA Projects:

• 330 kV Ghana – Togo – Benin Transmission Interconnection Project

Top 3 Economic Sectors:

Electricity, Gas, and Water Generation & Distribution, Business Services, and Financial Services.





BURUNDI

Direct Jobs Years: 2,067 Indirect Jobs Years: 2,033 Induced Jobs Years: 2,158 Secondary Jobs Years: 12, 447

Total Jobs Years estimated in Burundi: 18,707

PIDA Projects:

- Nyakarara Mwaro Mweya -Gitega (RN18)
 Road Upgrade, and
- Dar es Salaam Chalinze Morogoro Road Capacity Upgrade.

Top 3 Economic Sectors:

Agriculture & Food Products, Mining and Manufacturing





CAMEROON

Direct Jobs Years: **76,411** Indirect Jobs Years: **167,360** Induced Jobs Years: **185,055** Secondary Jobs Years: **556,591**

Total Jobs Years estimated in Cameroon: 985,423

PIDA Projects:

- Yaounde-Brazzaville Road (Cameroon section),
- Kribi Port Upgrade,
- Garoua Boulai N'Gaoundéré Road and
- Ketta-Djoum Road

Top 3 Economic Sectors:

Agriculture & Food Products, Trade, and Cement, Mineral, Chemical, Petroleum & Other products





CONGO

Direct Jobs Years: **7,135** Indirect Jobs Years: **6,597** Induced Jobs Years: **7,202** Secondary Jobs Years: **52,168**

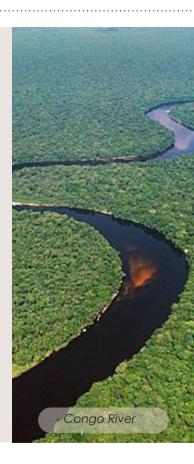
Total Jobs Years estimated in Congo: 73,101

PIDA Projects:

- Ndende-Doussala-Dolisie Road
- Ketta-Djoum Road

Top 3 Economic Sectors:

Mining, Agriculture & Food Products and Trade





CÔTE D'IVOIRE

Direct Jobs Years: **2,157** Induced Jobs Years: **2,248** Indirect Jobs Years: **2,206**

Secondary Jobs Years: 739,964

Total Jobs Years estimated in Cote D'Ivoire: 746,576

PIDA Projects:

 225 kV Côte d'Ivoire – Liberia - Sierra Leone -Guinea Interconnection Project

Top 3 Economic Sectors:

Electricity, Gas, and Water Generation & Distribution, Mining, and Business Services





PIDAPROJECTS

GUNDER CONSTRUCTION

IN THE PIDA

105M POPULATION

ETHIOPIA

Direct Jobs Years: 1,177,348 Indirect Jobs Years: 1153101 Induced Jobs Years: 2,603,042 Secondary Jobs Years: 22,399,110

Total Jobs Years estimated in Ethiopia: 27,332,603

PIDA Projects:

• Grand Ethiopian Renaissance Dam

Top 3 Economic Sectors:

Electricity, Gas, and Water Generation & Distribution, Agriculture & Food Products and Business Services





GABON

Direct Jobs Years: **37,332** Indirect Jobs Years: **34,525** Induced Jobs Years: **37,694** Secondary Jobs Years: **42,818**

Total Jobs Years estimated in Gabon:152,369

PIDA Projects:

- Libreville-Brazzaville Road (Gabon section) and
- Ndende Doussala Dolisie Road

Top 3 Economic Sectors:

Mining, Agriculture & Food Products and Transport.





PROJECTS

UNDER CONSTRUCTION

IN THE PIDA TOOLKIT

28,83M POPULATION

GHANA

Direct Jobs Years: 1,743 Indirect Jobs Years: 1,023 Induced Jobs Years: 307

Secondary Jobs Years: 719,864

Total Jobs Years estimated in Ghana: 722,936

PIDA Projects:

• 330 kv Ghana-Togo-Benin Transmission Interconnection Project, and

Top 3 Economic Sectors:

Electricity, Gas, and Water Generation& Distribution, Transport, and Construction Labour





GUINEA

Direct Jobs Years: 227,818 Indirect Jobs Years: 58,872 Induced Jobs Years: 65,018 Secondary Jobs Years: 139,075

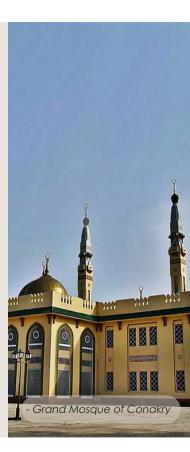
Total Jobs estimated in Guinea: 490,783

PIDA Projects:

- Kaleta Hydropower Plant and,
- 225 kV Côte d'Ivoire Liberia Sierra Leone -Guinea Interconnection Project

Top 3 Economic Sectors:

Electricity, Gas, and Water Generation& Distribution, Mining and Business Services





KENYA

Direct Jobs Years: 11,317,747 Indirect Jobs Years: 1,347,695 Induced Jobs Years: 1,201,635 Secondary Jobs Years: 4,110,247

Total Jobs Years estimated in Kenya: 17,977,323

PIDA Projects:

- Mombasa-Nairobi Standard Gauge Railway,
- Mombasa Port New Container Terminal,
- Nairobi Southern Bypass Road,
- Bachuma Gate Maji ya Chumvi Road,
- Mombasa Southern Upgrading and
- ZTK Transmission Interconnection Project(Kenya section)
- Eldoret-Nadapal Road

Top 3 Economic Sectors;

Agriculture & Food Products, Cement, Mineral, Chemical, Petroleum & Other products and Transport.





LIBERIA

Direct Jobs Years: 7,739 Indirect Jobs Years: 3,756 Induced Jobs Years: 3,037 Secondary Jobs Years: 541,817

Total Jobs Years estimated in Liberia: 556,349

PIDA Projects:

 225 kV Côte d'Ivoire – Liberia - Sierra Leone -Guinea Interconnection Project

Top 3 Economic Sectors:

Electricity, Gas, and Water Generation & Distribution, Business Services, and Mining





MOZAMBIQUE

Direct Jobs Years: **588,692** Indirect Jobs Years: **219,276** Induced Jobs Years: **188,585** Secondary Jobs Years: **7,495,735**

Total Jobs Years estimated in Mozambique: 8,492,287

PIDA Projects:

- Maputo Port Expansion,
- · Nacala Port New Coal Terminal,
- Sena Railway Line Rehabilitation
- · Nacala Railway Line, and
- Beira Port Dredging

Top 3 Economic Sectors:

Agriculture & Food Products, Mining, and Trade.





NIGER

Direct Jobs Years: **7,465**Indirect Jobs Years: **3,499**Induced Jobs Years: **3,454**Secondary Jobs Years: **207,507**

Total Jobs Years estimated in Niger: 221,926

PIDA Projects:

• TAH2: Algiers to Lagos - Missing Road Links in Niger

Top 3 Economic Sectors:

Agriculture & Food Products, Mining, and Business Services





RWANDA

Direct Jobs Years: **87,451**Indirect Jobs Years: **19,789**Induced Job Years: **23,895**Secondary Jobs Years: **207, 260**

Total Jobs Years estimated in Rwanda: 338,394

PIDA Projects:

- Regional Rusumo Falls Hydroelectric Power Project II.
- Dar es Salaam Isaka Mwanza/Kigali Standard Gauge Railway, and
- Dar es Salaam Chalinze Morogoro Road Capacity Upgrade

Top 3 Economic Sectors:

Agriculture & Food Products, Mining, and Business Services.



PROJECTS **IN THE PIDA** TOOLKIT

SIERRA LEONE

Direct Jobs Years: **7,757**Indirect Jobs Years: **3,755**Induced Jobs Years: **3,036**Secondary Jobs Years: **287,495**

Total Jobs Years estimated in Sierra Leone: 302,044

PIDA Projects:

 225 kV Côte d'Ivoire – Liberia - Sierra Leone -Guinea Interconnection Project

Top 3 Economic Sectors:

Electricity, Gas, and Water Generation & Distribution, Business Services, and Mining





SOUTH AFRICA

Direct Jobs Years: 111,588 ndirect Jobs Years: 51,584 IInduced Jobs Years: 42,395 Secondary Jobs Years: 600,829

Total Jobs Years estimated in South Africa: 806,397

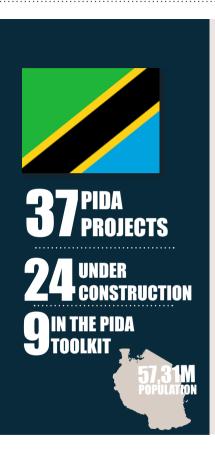
PIDA Projects:

• Durban Port Expansion

Top 3 Economic Sectors:

Trade, Agriculture & Food Products, and Mining.





TANZANIA

Direct Jobs Years: 106,093 Indirect Jobs Years: 453,542 Induced Jobs Years: 551,889

Secondary Jobs Years: 26,058,502

Total Jobs Years estimated in Tanzania: 27,170,027

PIDA Projects:

- Dar es Salaam Isaka Mwanza/Kigali Standard Gauge Railway,
- Dar es Salaam Port Modernisation,
- Dar es Salaam Chalinze Morogoro Road Capacity Upgrade,
- Mpanda-Kasulu-Nyakanazi and Kasulu-Kigoma Roads
- Tabora-Nyahua Road,
- Regional Rusumo Falls Hydroelectric Power Project II,
- ZTK Transmission Interconnection Project(Tanzania section - Singida to Namanga), and
- ZTK Transmission Interconnection Project (Tanzania section - Iringa to Shinyanga)
- ZTK Transmission Interconnection Project(Kenya section)

Top 3 Economic Sectors:

Agriculture & Food Products, Trade, and Mining





OPIDA **O**PROJECTS

QUNDER CONSTRUCTION

IN THE PIDA TOOLKIT

7,79M POPULATION

TOGO

Direct Jobs Years: 1,880 Indirect Jobs Years: 1,794 Induced Jobs Years: 1,845 Secondary Jobs Years: 43,228

Total Jobs Years estimated in Togo: 48,746

PIDA Projects:

• 330 kV Ghana – Togo – Benin Transmission Interconnection Project

Top 3 Economic Sectors:

Electricity, Gas, and Water Generation & Distribution, Trade, and Business Services





5 PIDA PROJECTS

UNDER CONSTRUCTION

IN THE PIDA

11,53N POPULATION

TUNISIA

Direct Jobs Years: 1,056 Indirect Jobs Years: 771 Induced Jobs Years: 340

Secondary Jobs Years: 95,798

Total Jobs Years estimated in Tunisia: 97,964

PIDA Projects:

 Algeria - Tunisia section of ELTAM Transmission Interconnection Project (Tunisia part)

Top 3 Economic Sectors:

Electricity, Gas, and Water Generation & Distribution, Trade, and Business Services





MALAWI

Secondary Jobs Years: **20,514**Total Jobs Years estimated in Malawi: **20,514**

PIDA Projects:

 Dar es Salaam - Chalinze - Morogoro Road Capacity Upgrade

Top 3 Economic Sectors:

Agriculture & Food Products, Other Services, and Transport.





UGANDA

Secondary Jobs Years: **79,002**Total Jobs Years estimated in Uganda: **79,002**

PIDA Projects:

 Dar es Salaam - Isaka - Mwanza/Kigali Standard Gauge Railway

Top 3 Economic Sectors:

Agriculture & Food Products, Trade, and Cement, Mineral, Chemical, Petroleum & Other products





ZAMBIA

Secondary Jobs Years: 548,260

Total Jobs Years estimated in Zambia: 548,260

PIDA Projects:

- Dar es Salaam Chalinze Morogoro Road Capacity Upgrade.
- ZTK Transmission Interconnector

Top 3 Economic Sectors:

Agriculture & Food Products, Trade, and Metal Products



PIDA PROJECTS PER COUNTRY

Country	Projects
Algeria	9
Angola	10
Benin	9
Botswana	2
Burkina Faso	8
Burundi	14
Cabo Verde	1
Cameroon	22
Central African Republic (CAR)	11
Chad	14
Comoros	1
Democratic Republic of Congo	25
Cote d'Ivoire	13
Congo	19

Country	Projects
Djibouti	4
Egypt	6
Equatorial Guinea	8
Eritrea	2
Eswatini	1
Ethiopia	7
Gabon	7
Gambia	1
Ghana	9
Guinea	9
Guinea-Bissau	2
Kenya	27
Lesotho	1
Liberia	3

Country	Projects
Libya	9
Madagascar	1
Malawi	6
Mali	13
Mauritania	3
Mauritius	1
Morocco	3
Mozambique	17
Namibia	5
Niger	12
Nigeria	11
Rwanda	9
Sao Tome and Principe	1
Senegal	9

Country	Projects
Seychelles	1
Sierra Leone	3
Somalia	3
South Africa	5
South Sudan	9
Sudan	8
Tanzania	37
Togo	7
Tunisia	5
Uganda	21
Zambia	12
Zimbabwe	20

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