The United Republic of Tanzania

# ENERGYACCESS AND USE SITUATION SURVEYII IN TANZANIA MAINLAND 2019/20

# SUMMARY OF KEY FINDINGS

**April, 2020**

## Foreword

Energy Access and Use Situation Survey II is the second survey conducted by the Ministry of Energy through Rural Energy Agency (REA) where the first was conducted in 2016. The main objective was to provide statistical information on the access and use of energy situation in Tanzania Mainland. The 2019/20 report is more detailed than the previous reports, highlighting the current energy situation in the rural and urban areas in terms of level of electrification, affordability, perceptions of households, benefits and impact of electrification and sources of energy for lighting and cooking.

The importance of energy in different socio-economic sectors should be re-emphasized in the current global situation as a driving factor in the production circle. Understanding the country's desire of achieving industrialized economy and middle income, knowing the current status of accessibility and use of energy is therefore paramount to the nation.

In this regard, the report will enable the Ministry of Energy, REA, Tanzania Electricity Supply Company Limited (TANESCO) and other energy stakeholders to gauge the progress made towards achieving the national electrification targets as stipulated in the Tanzania Development Vision 2025, the Second Five Year Development Plan 2016/17 to 2020/21 and other international development agendas including the East African Vision 2050, the Africa We Want 2063 and Sustainable Development Goals (SDGs) 2030.

The successful completion of this Survey Report owes much to the Technical Team whose members came from the Ministry of Energy, National Bureau of Statistics (NBS), Rural Energy Agency and TANESCO.

It is my hope that the Key Findings Report will furnish a key information to policy makers, program managers and other energy stakeholders to evaluate the target set in the National Energy Policy whilst waiting for the main report to be made available mid May 2020.

Eng. Zena Ahmed Said
Permanent Secretary
Ministry of Energy
April, 2020.

## Acknowledgement

The 2019/20 Energy Access Situation Survey II Report evaluates the current status of energy access and use in Tanzania Mainland. The successful implementation of the survey was result of many individual and institutions. Therefore, I would like to express my gratitude to all individuals and institutions that were involved in the whole process of carrying out the survey as it was planned.

Outmost gratitude is extended to the Government of United Republic of Tanzania through the Rural Energy Agency (REA) under the Ministry of Energy, for the financial support which has led to the successful implementation of the survey.

My gratitude also, extends to all those who in one-way or the other contributed to the successful completion of the Survey. In particular, I wish to note the tremendous effort made by the Planning Group composed of professionals from the National Bureau of Statistics (NBS), the Monitoring and Evaluation section of the Rural Energy Agency, Planning Department of Tanzania Electricity Supply Company and Ministry of Energy.

I would like to extend my appreciation to the President's Office Regional Administration and Local Government for providing valuable support to the Survey by being the forefront in matters concerning their vicinity.

Lastly, I would like to extend my gratitude to all leaders at all levels without forgetting all respondents at household level for providing the required information during the data collection exercise, and also to field enumerators for their commendable work.

This report is expected to facilitate planning within the Government and the business community at large, whilst stimulating further research and in-depth analysis in the energy sector. It is my expectation that this report will be a useful source of information to planners and policy makers, private sector, members from academia and other stakeholders including regional and international organizations.

Eng. Amos W. Maganga
Director General
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April, 2020.

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## Definition of Key Terms

### Energy

Refers to traditional and modern resources and technology used to provide light, power and heat. Sources of energy include: solar; wind; electricity; Liquefied Petroleum Gas (LPG); biogas; natural gas; oil (petrol, diesel and kerosene); coal; bio-energy; energy cells; and biomass (charcoal and firewood).

### Energy Access

Population having a reliable access to modern cooking, communication, lighting facilities and/or living within 600 meters from a distribution transformer. It also includes access to productive energy such as mechanical power which supports value adding activities and/or income generation.

### Electricity

Is a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for machines.

### Household Electricity Connectivity

Is an electric pole in the village and an electric bulb in the house. In this survey, household connected to electricity referred to the household whose source of electricity was either TANESCO/REA or local private entity.

### Electricity Access

Refers to the percentage of people in a given area that have relatively simple, stable access to electricity.

### Household

Is a person or persons living together, shares the same pot and recognizes one of them as the head of household.

### Community

Is the collection of people, essentially residing in one geographical place. In this survey, community was referred to village/mtaa.

### TANESCO/REA electricity

Refers to power supply (electricity) through the National Grid network and off grid managed by TANESCO.

### Local Private Entity

Refers to an electricity distribution network physically isolated from the main grid, which has a generator connected in its network, operated by its owner or a third party.

## 1.0 Introduction

The Government of United Republic of Tanzania recognizes the fundamental role of energy in the efforts to improve the National economy towards industrialization as well as achieving Tanzania Development Vision 2025, East African Vision 2050 and Sustainable Development Goals (SDGs) 2030. The commitment to strengthen and increase access to modern energy services is well articulated in the National Energy Policy (NEP) 2015. The policy sets national policy objectives to ensure availability of reliable and affordable supplies of energy, and to promote its use in a rational and sustainable manner to support development goals.

In gauging the impacts of such projects and programs, the former Ministry of Energy and Minerals through REA undertook Energy Access Situation Survey I in Tanzania Mainland in 2016. The survey aimed at providing data on access and use of energy in Mainland Tanzania, thereby among others establishing a comprehensive socio-economic impact assessment of energy projects and programs in the Country. To update the National statistical information pertaining energy access and use, the Ministry of Energy through REA, carried out Energy Access and Use Situation Survey II 2019/20. The National Bureau of Statistics was contracted to undertake the exercise for all 26 regions of Tanzania Mainland.

### 1.1 Objective of the Survey

The objective of the survey was to collect data and relevant information on energy access and use at household and community levels in Tanzania Mainland. The survey collected information at household level on demographics and socio-economic welfare in line with energy access and use. Studying the benefits and impact of rural electrification as well as capturing household perceptions are other areas that were considered in this survey. Furthermore, studying linkages of the livelihood of the entire communities in connection with electrification is another positiveness of this survey.

The sector Ministries and other stakeholders will use the collected statistical information regarding energy access and utilization pattern in the country as well as to monitor, evaluate progress and impact of energy programs. In addition, these findings will be used to support planning for urban and rural electrification for both on-grid and off-grid areas and for the upcoming electrification projects/programs.

## 2.0 Survey Methodology

### 2.1 Sample Design and Sample Size

The survey sample coverage encompassed both rural and urban households and communities to ensure representativeness. The 2012 National Master Sample Frame was used to select the Enumeration Areas. National Master Sample was developed from the 2012 Population and Housing Census by the National Bureau of Statistics (NBS) to serve as a national framework

for conducting household-based surveys in the country. A two-stage sampling was used. In the first stage, the Enumeration Areas were selected under equal allocation with adjustments method. The total numbers of Enumeration Areas were 840 and 1,250 communities. In the second stage, a sample of 15 households was selected from each Enumeration Area. The Systematic Sampling was used as a last stage that yields a total sample of 12,600 households.

## 2.2 Design of Survey Instruments

Questionnaires (both household and community) for the survey were designed to meet client's demands as it was stipulated in the Terms of Reference (TOR).

Household questionnaire covered information on the following;

i) Household demographics;
ii) Economic activities;
iii) Energy access, consumption, ability and willingness to pay for electricity;
iv) Benefit and impact of electrification;
v) Housing, water and sanitation;
vi) Household assets;
vii) Household business, income source and expenditure;
viii) Time use;
ix) Gender involvement;
x) Household perception on electricity issues;
xi) Household comments on electricity issues; and
xii) Interviewer comments.

Community questionnaire was administered for each of the selected community (villages/mitaa). It covered questions on the following;

i) Population and electricity connection in villages/mitaa;
ii) Social infrastructure/services, access and electricity connection;
iii) Employments created through investment projects;
iv) Economic activities and daily wages;
v) Market prices of alternative energies to TANESCO/REA electricity; and
vi) Village/Mtaa Leaders comments on electricity issues.

## 2.3 Pre-Testing of Questionnaire

Pre-testing of questionnaire was done to test the flow and clarity of the questions, estimation of the interviewing time, manpower requirements etc. Thus, the objectives of the pre-testing were to check the consistency of questions, data collection techniques, time used to finish the interview and logistic issues.

## 2.4 Recruitment and Training

Recruitment and training of field personnel (enumerators and supervisors) was done prior to the data collection field work, based on various criteria. The training was both theoretical and practical, but also intensive for the purpose of enhancing data quality.

## 2.5 Data Collection

Immediately after training of enumerators, data collection exercise commenced. The exercise took about a month, that is from 25th November to 5thJanuary 2020.

## 2.6 Data Analysis and production of Tables of Results

Data analysis and production of tables of results followed after field work. Preliminary results for key indicators were released in early February 2020.

## 3.0 Summary of Key Findings

### 3.1 Population Accessing Electricity

The survey results revealed that, overall, 78.4 percent of the total population in Tanzania Mainland have access to electricity compared to 67.5 percent in 2016/17 equivalent to an increase of 11 percent from 2016/17 to 2019/20. Looking at rural - urban differentials, the 2019/20 findings indicate that, 99.6 percent of urban population have access to electricity compared to 97.3 percent observed in 2016/17.

The rural population with access to electricity in 2019/20 is 69.8 percent compared to 49.3 percent in 2016/17 equivalent to an increase of 21 percent.

Regional wise, Dar es Salaam is the only region with all of its population (100.0 percent) having access to electricity. The top regions that recorded the highest percentage of their population having access to electricity are Dar es salaam (100.0 percent), Kilimanjaro (93.6 percent), Mwanza (89.9 percent), Mbeya (89.0 percent) and Mara (87.7 percent), Pwani (85.8 percent), Geita (84.4 percent) as it can be seen in Table 1, Figure 1 and Map 1& 2.

Five regions with the least population accessing electricity are Kigoma (56.3 percent), Manyara (58.1 percent), Shinyanga (61.7 percent), Songwe (61.9 percent) and Rukwa (64.8 percent) (Table 1, Figure 1, Map 1&2).

**Table 1: Percentage Distribution of Population Accessing Electricity by Region and Place of Residence, Tanzania Mainland, 2019/20**

| Region | Electricity Access | | |
|---|---|---|---|
| | Total | Rural | Urban |
| Dodoma | 74.4 | 70.3 | 100.0 |
| Arusha | 84.5 | 77.8 | 100.0 |
| Kilimanjaro | 93.6 | 91.9 | 100.0 |
| Tanga | 83.5 | 79.6 | 98.6 |
| Morogoro | 74.6 | 67.6 | 100.0 |
| Pwani | 85.8 | 79.1 | 100.0 |
| DSM | 100.0 | 0.0 | 100.0 |
| Lindi | 65.9 | 57.8 | 100.0 |
| Mtwara | 66.3 | 57.4 | 97.8 |
| Ruvuma | 68.2 | 57.0 | 100.0 |
| Iringa | 81.4 | 74.9 | 100.0 |
| Mbeya | 89.0 | 81.3 | 100.0 |
| Singida | 67.2 | 60.5 | 100.0 |
| Tabora | 76.4 | 71.9 | 100.0 |
| Rukwa | 64.8 | 55.1 | 100.0 |

**Table 1 (ctd): Percentage Distribution of Population Accessing Electricity by Region and Place of Residence, Tanzania Mainland, 2019/20**

| Region | Electricity Access | | |
|---|---|---|---|
| | Total | Rural | Urban |
| Kigoma | 56.3 | 45.9 | 100.0 |
| Shinyanga | 61.7 | 56.1 | 100.0 |
| Kagera | 81.8 | 80.0 | 100.0 |
| Mwanza | 89.9 | 84.8 | 100.0 |
| Mara | 87.7 | 84.5 | 100.0 |
| Manyara | 58.1 | 53.7 | 100.0 |
| Njombe | 80.0 | 73.6 | 100.0 |
| Katavi | 67.6 | 59.1 | 96.2 |
| Simiyu | 65.0 | 62.8 | 100.0 |
| Geita | 84.4 | 81.1 | 100.0 |
| Songwe | 61.9 | 50.7 | 96.7 |
| **Total** | **78.4** | **69.8** | **99.6** |

**Table 2: Percentage Distribution of Population Accessing Electricity by Region and Place of Residence, Tanzania Mainland, 2016/17**

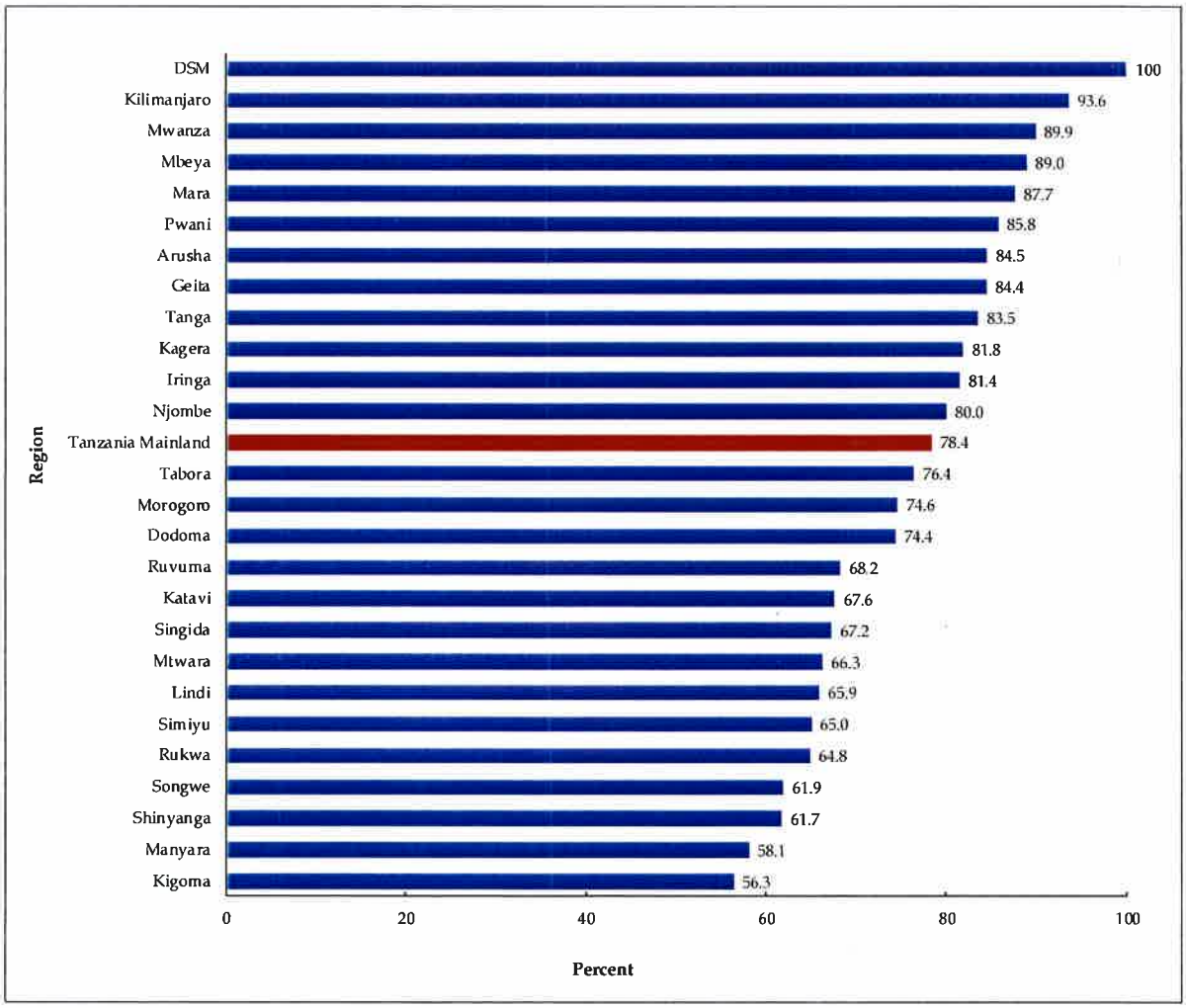
| Region | Access 2016 | | |
|---|---|---|---|
| | Total | Rural | Urban |
| Dodoma | 54.4 | 44.8 | 100.0 |
| Arusha | 80.0 | 67.5 | 100.0 |
| Kilimanjaro | 91.7 | 89.1 | 100.0 |
| Tanga | 72.9 | 66.1 | 85.9 |
| Morogoro | 68.6 | 46.3 | 100.0 |
| Pwani | 80.4 | 48.2 | 100.0 |
| DSM | 100.0 | N/A | 100.0 |
| Lindi | 52.5 | 41.0 | 100.0 |
| Mtwara | 46.4 | 29.2 | 83.1 |
| Ruvuma | 48.0 | 34.2 | 94.9 |
| Iringa | 65.8 | 49.7 | 100.0 |
| Mbeya | 86.0 | 65.7 | 100.0 |
| Singida | 50.5 | 43.0 | 100.0 |
| Tabora | 65.6 | 58.4 | 100.0 |
| Rukwa | 43.8 | 15.4 | 92.6 |
| Kigoma | 46.0 | 27.8 | 92.6 |
| Shinyanga | 45.0 | 23.4 | 100.0 |
| Kagera | 70.1 | 65.3 | 100.0 |

**Table 2 (ctd): Percentage Distribution of Population Accessing Electricity by Region and Place of Residence, Tanzania Mainland, 2016/17**

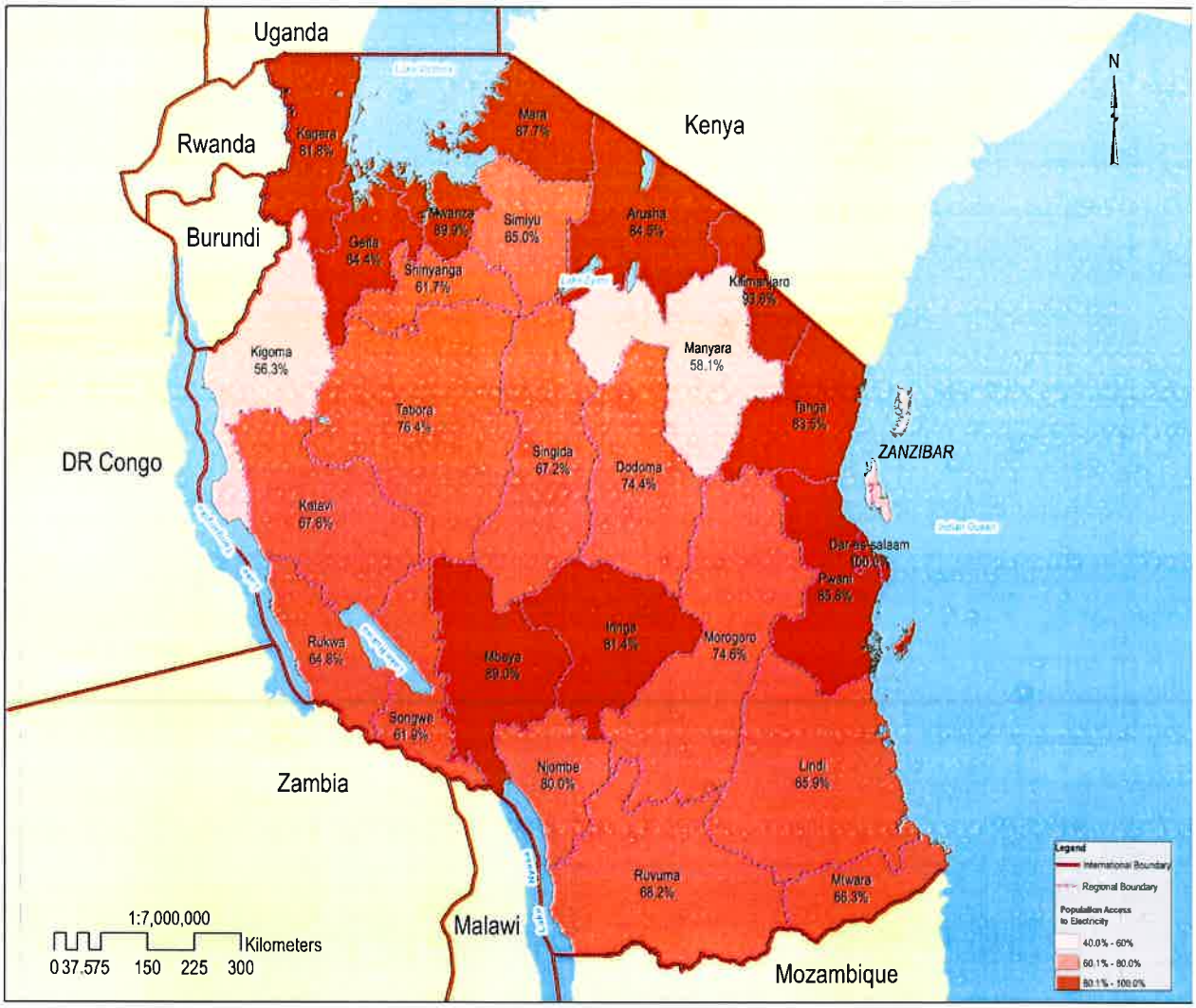
| Region | Access 2016 | | |
|---|---|---|---|
| | Total | Rural | Urban |
| Mwanza | 72.6 | 51.2 | 96.7 |
| Mara | 70.8 | 66.1 | 100.0 |
| Manyara | 49.4 | 38.1 | 100.0 |
| Njombe | 68.3 | 52.9 | 100.0 |
| Katavi | 59.4 | 37.2 | 70.6 |
| Simiyu | 51.2 | 49.2 | 100.0 |
| Geita | 56.6 | 43.4 | 94.3 |
| Songwe | 45.2 | 24.5 | 91.3 |
| **TOTAL** | **67.5** | **49.3** | **97.3** |

**Source:** 2016/17 Energy Access Situation Survey I

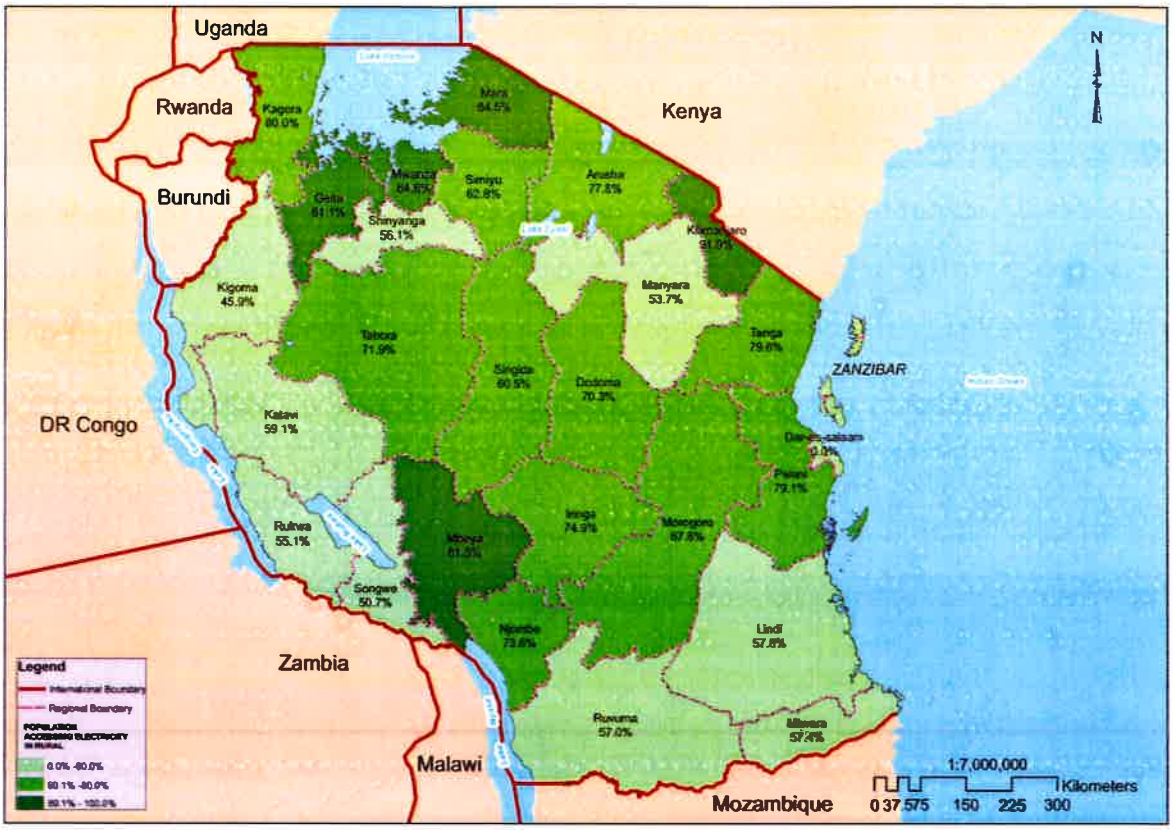
**Figure 1: Percentage Distribution of Population Accessing Electricity by Region, Tanzania Mainland, 2019/20**



**Map 1: Percentage Distribution of Population Accessing Electricity by Region, Tanzania Mainland, 2019/20**



**Map 2: Percentage Distribution of Rural Population Accessing Electricity by Region, Tanzania Mainland, 2019/20**




## 3.2 Households Connected to Electricity

The 2019/20 survey results portray that, 37.7 percent of all households in Tanzania Mainland are connected to electricity compared to 32.8 percent in 2016/17. Looking at rural - urban differentials, findings reveal that, 73.2 percent of urban households are connected to electricity compared to65.3 percent observed in 2016/17. In rural area, household connected to electricity accounted for 24.5 percent in 2019/20 compared to 16.9 percent in 2016/17. This is an increase of about 8 percent of total household connected to electricity from 2016/17 to 2019/20 (Table 3 and 4).

It is evident from Table 3and 4 that, Dar es Salaam region has recorded the highest percentage of households connected to electricity (85.7 percent) compared to other regions in Tanzania Mainland between 2016/17 to 2019/20. Those regions above national average includes; Dar es Salaam (85.7 percent), Njombe (61.2 percent), Arusha (47.8 percent), Kilimanjaro (47.6 percent) and Mbeya (46.9 percent).The remaining regions its connectivity is below national average as it was observed in 2019/20 (Table 3, Figure 2, Map 3and 4).

**Table 3: Percentage Distribution of Households Connected to Electricity by Region and Place of Residence, Tanzania Mainland, 2019**

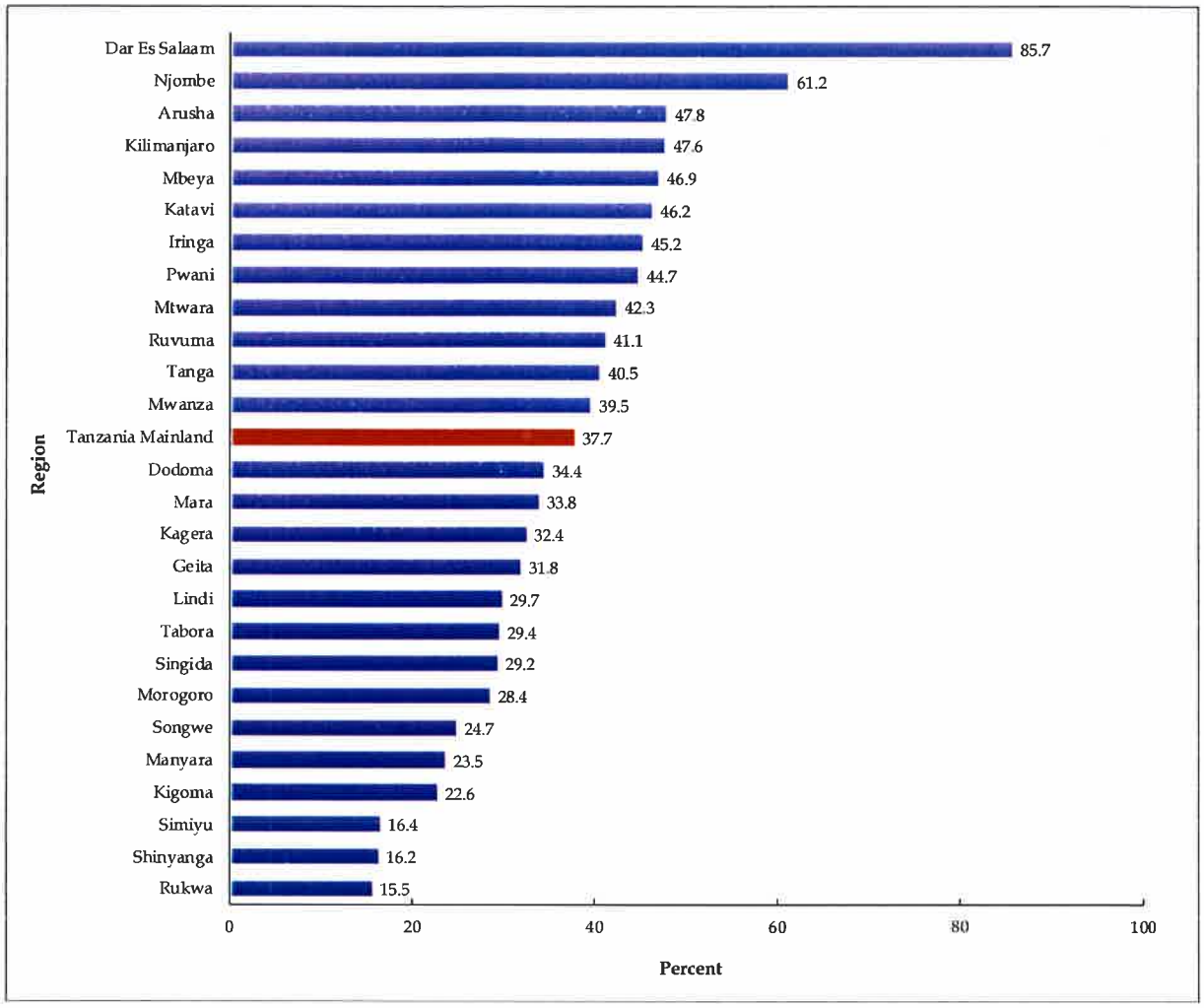
| Region | Electricity Connectivity | | |
|---|---|---|---|
| | Total | Rural | Urban |
| Dodoma | 34.4 | 27.7 | 78.3 |
| Arusha | 47.8 | 31.5 | 78.1 |
| Kilimanjaro | 47.6 | 35.7 | 86.8 |
| Tanga | 40.5 | 30.5 | 73.4 |
| Morogoro | 28.4 | 18.0 | 62.9 |
| Pwani | 44.7 | 32.0 | 70.0 |
| DSM | 85.7 | N/A | 85.7 |
| Lindi | 29.7 | 26.0 | 44.4 |
| Mtwara | 42.3 | 32.3 | 77.0 |
| Ruvuma | 41.1 | 30.6 | 70.0 |
| Iringa | 45.2 | 33.2 | 78.3 |
| Mbeya | 46.9 | 24.4 | 80.8 |
| Singida | 29.2 | 18.4 | 83.3 |
| Tabora | 29.4 | 18.1 | 73.6 |
| Rukwa | 15.5 | 9.2 | 36.2 |
| Kigoma | 22.6 | 12.7 | 62.2 |
| Shinyanga | 16.2 | 9.4 | 43.3 |
| Kagera | 32.4 | 25.7 | 92.9 |
| Mwanza | 39.5 | 22.2 | 65.4 |
| Mara | 33.8 | 23.1 | 70.7 |
| Manyara | 23.5 | 16.0 | 88.8 |
| Njombe | 61.2 | 51.7 | 87.5 |
| Katavi | 46.2 | 36.1 | 74.2 |
| Simiyu | 16.4 | 12.1 | 76.7 |
| Geita | 31.8 | 25.7 | 56.3 |
| Songwe | 24.7 | 13.9 | 60.0 |
| **Total** | **37.7** | **24.5** | **73.2** |

**Table 4: Percentage Distribution of Households Connected to Electricity by Region and Place of Residence, Tanzania Mainland, 2016/17**

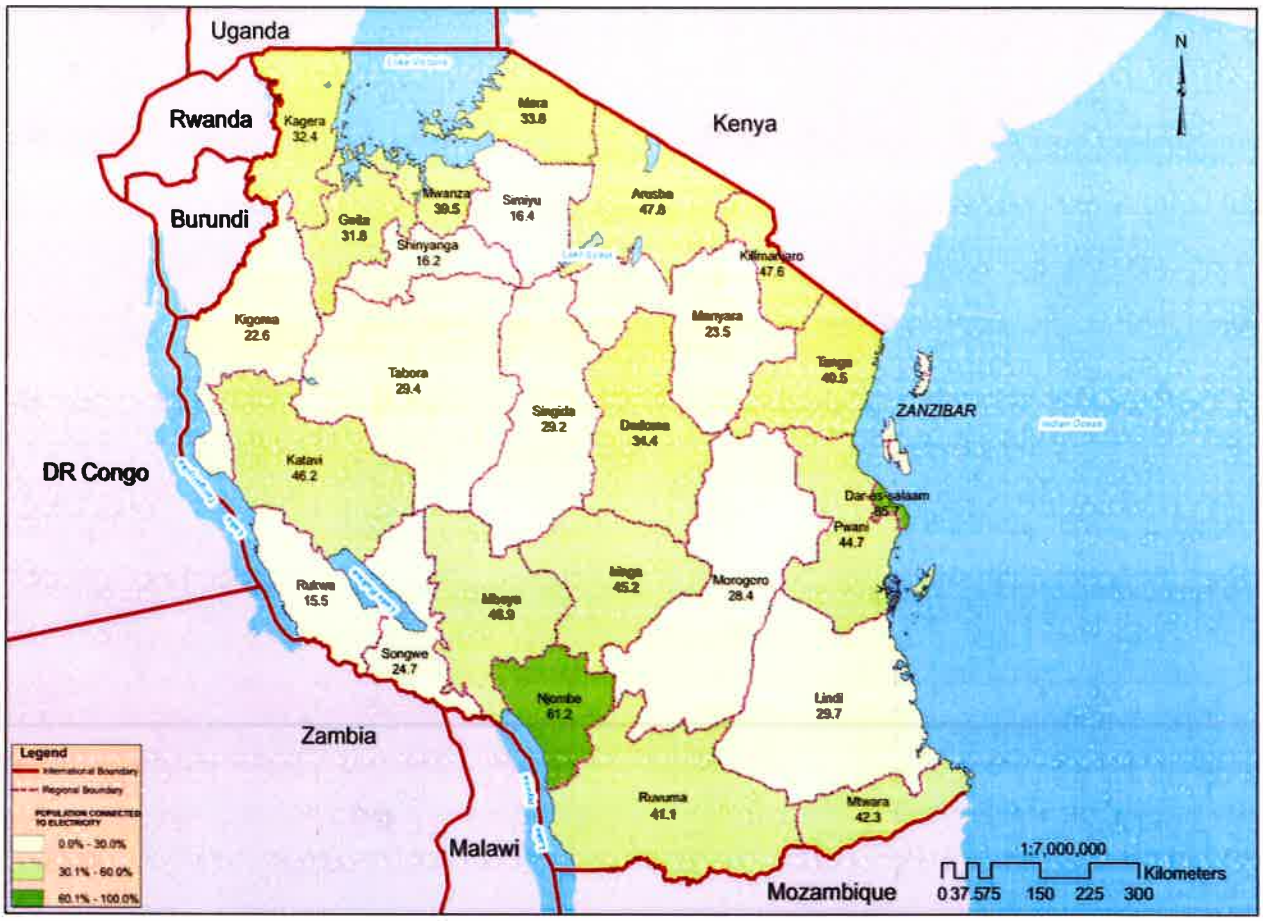
| Region | 2016/17 Electricity Connectivity | | |
|---|---|---|---|
| | Total | Rural | Urban |
| **Total** | **32.8** | **16.9** | **65.3** |
| Dodoma | 23.5 | 16.9 | 60.0 |
| Arusha | 39.7 | 25.1 | 67.4 |
| Kilimanjaro | 42.6 | 32.4 | 76.7 |
| Tanga | 30.5 | 19.3 | 67.8 |
| Morogoro | 24.3 | 11.8 | 52.4 |
| Pwani | 32.8 | 22.5 | 51.8 |
| DSM | 75.2 | 0.0 | 75.2 |
| Lindi | 20.0 | 18.0 | 28.0 |
| Mtwara | 33.0 | 24.1 | 60.3 |
| Ruvuma | 31.8 | 23.2 | 55.2 |
| Iringa | 39.5 | 29.5 | 66.7 |
| Mbeya | 34.1 | 12.9 | 68.0 |
| Singida | 22.3 | 15.0 | 77.6 |
| Tabora | 21.8 | 13.9 | 65.0 |
| Rukwa | 8.7 | 3.3 | 26.6 |
| Kigoma | 16.2 | 6.7 | 56.7 |
| Shinyanga | 12.8 | 7.0 | 32.2 |
| Kagera | 24.6 | 16.2 | 88.7 |
| Mwanza | 32.8 | 17.9 | 56.6 |
| Mara | 21.3 | 14.2 | 50.7 |
| Manyara | 20.6 | 9.4 | 81.8 |
| Njombe | 50.5 | 45.9 | 62.8 |
| Katavi | 40.0 | 31.5 | 62.8 |
| Simiyu | 11.5 | 9.3 | 66.5 |
| Geita | 14.0 | 10.3 | 30.6 |
| Songwe | 15.9 | 6.0 | 48.9 |

**Source: 2016/17 Energy Access Situation Survey**

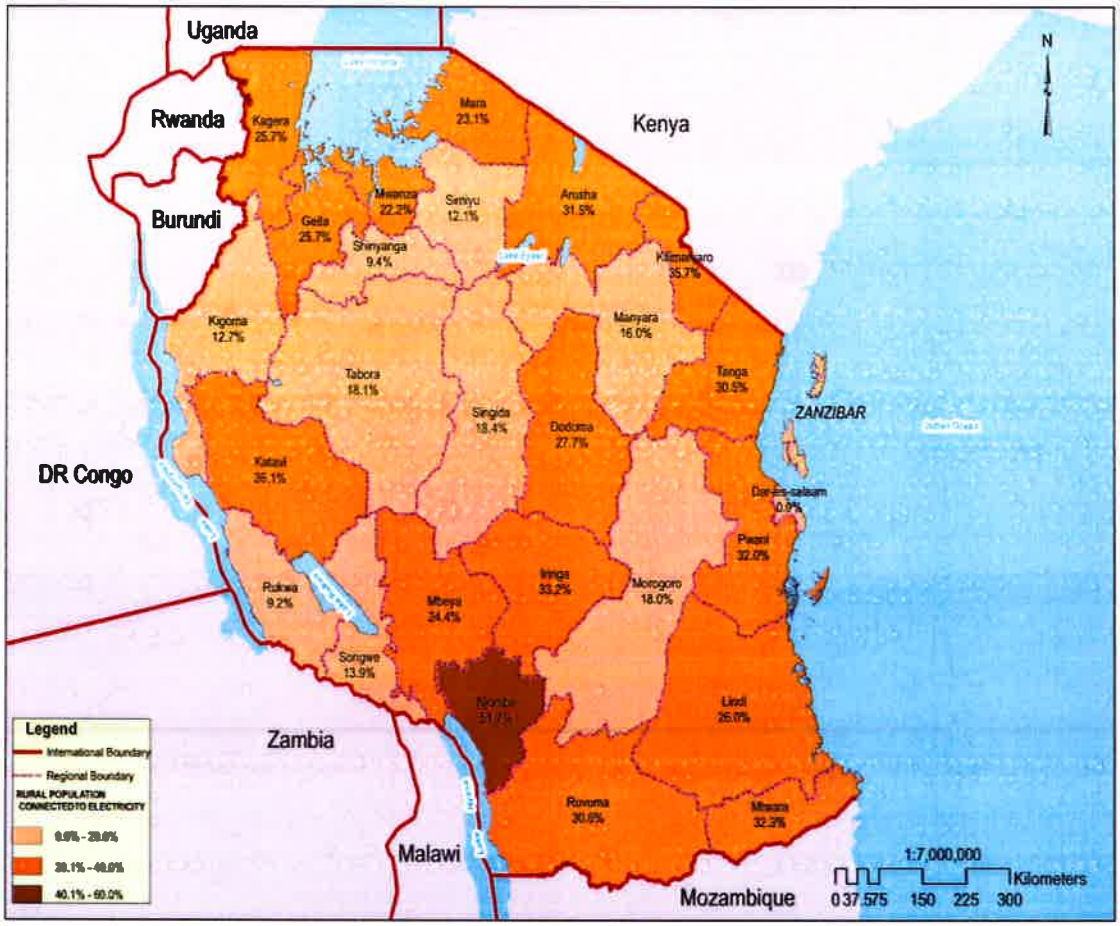
**Figure 2: Percentage Distribution of Households Connected to Electricity by Region, Tanzania Mainland, 2019/20**



**Map 3: Percentage Distribution of Households Connected to Electricity by Region, Tanzania Mainland, 2019/20**



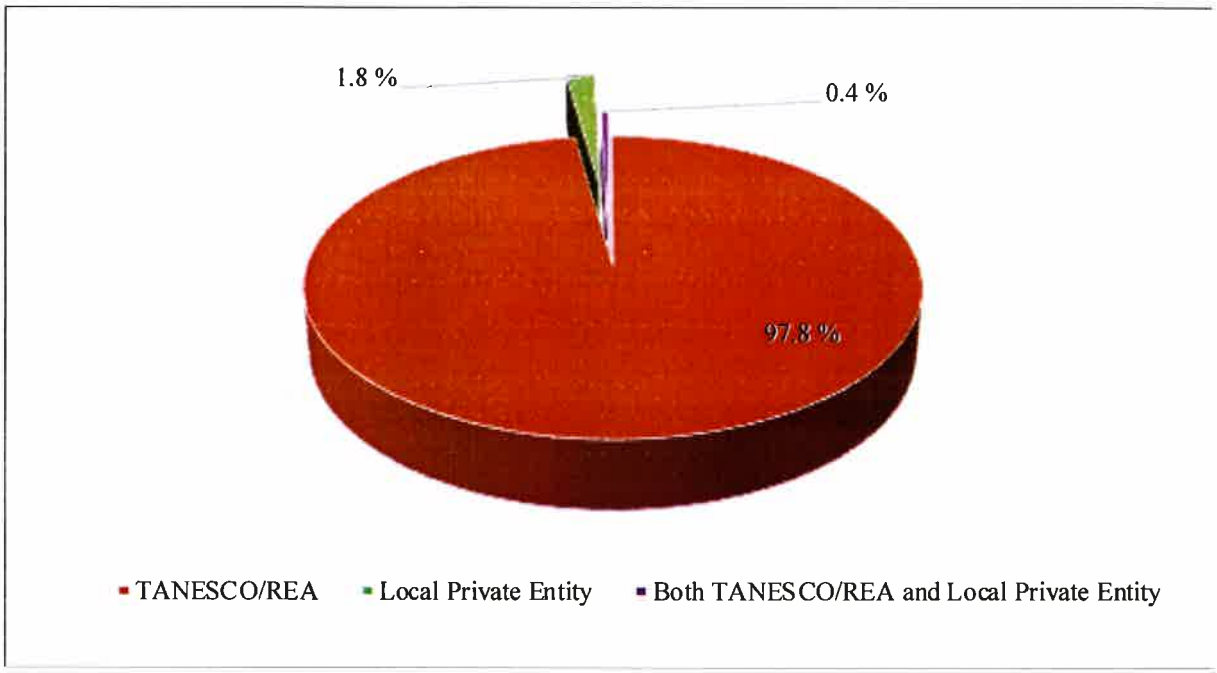
**Map 5: Percentage Distribution of Rural Households Connected to Electricity by Region, Tanzania Mainland, 2019/20**




## 3.2 Villages Connected to Electricity

Findings show that, 58.8 percent of villages covered by the survey in Tanzania Mainland are connected to electricity. Majority of villages (97.8 percent) are connected to TANESCO/REA electricity, 1.8 percent are connected to local private entity and 0.4 percent are connected to both TANESCO/REA and local private entity (Figure 3).

**Figure 3: Percentage Distribution of Villages Connected to Electricity by Source of Electricity, Tanzania Mainland, 2019/20**




## 3.3 Infrastructure/Services Connected to Electricity and Main Source of Connection

Electricity infrastructure provides essential conditions for provision of services such as; medical services, educational facilities, safe water and sanitation, ICT and other socio-economic activities which enhances development. Rural electrification projects focus on increasing access to electricity in rural areas and to scale-up the supply of renewable energy in rural areas.

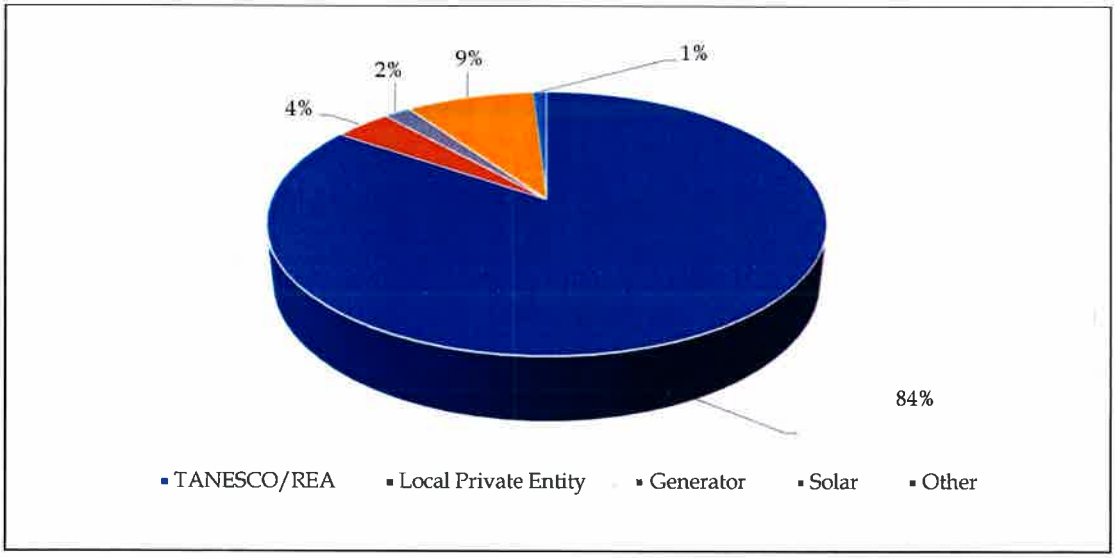
During the survey, Villages/Mitaa leaders were asked to provide information on the availability of social facilities. The social facilities covered include Village/Mitaa offices, education, health, financial, industry/manufacturing related services, religious services, water pumping stations and other social facilities.

In general, the survey results show that 90.7 percent of social infrastructure/services covered in the survey are connected to electricity whereby 84.0 percent of these infrastructure/service are connected to TANESCO/REA, followed by solar (9.0 percent), local private entity (4.0 percent) and 2.0 percent are connected to generator, 1.0 percent of infrastructure/services are using other sources of connection such as wind and biogas (Table 3 and Figure 4).

**Table 5: Percentage distribution of Main Social Infrastructure/Services Connected to Electricity, Tanzania Mainland, 2019/20**

| Infrastructure/Service | Percent of Infrastructure/Service connected to Electricity |
|---|---|
| Government hospital | 100.0 |
| Private hospital | 100.0 |
| Government health centre | 100.0 |
| Private health centre | 100.0 |
| Government dispensary | 100.0 |
| Private dispensary | 100.0 |
| Bank | 100.0 |
| ATM | 100.0 |
| Mobile Money Agent Point (MPESA TigoPesaetc) | 99.7 |
| Welding workshops | 98.8 |
| Guest house (s) | 97.9 |
| Water wells using electricity powered motor pumps | 97.2 |
| Air dressing salon(s) | 94.7 |
| Barber shop(s) | 93.7 |
| Private Secondary school | 92.6 |
| Shop(s) | 88.5 |
| Private Primary school | 88.4 |
| Post office | 86.7 |
| Recreation places (e.g. music hall/restaurant groceries) | 80.4 |
| Police station or post | 76.6 |
| Private Pre-primary school or nursery school | 74.6 |
| **Total** | **90.7** |

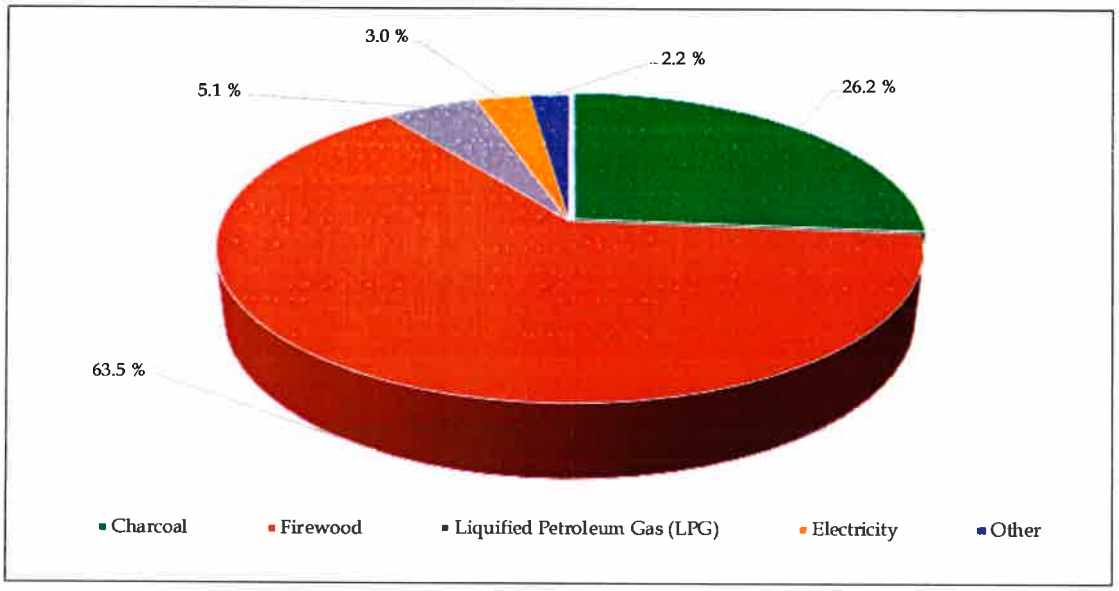
**Figure 4: Percentage Distribution of Sources of Electricity Connected to Social Infrastructure/Services, Tanzania Mainland, 2019/20**



## 3.4 Main Source of Energy for Cooking

In overall, 63.5 percent of the households in Tanzania Mainland use firewood as the main source of energy for cooking, followed by charcoal (26.2 percent), Liquified Petroleum Gas (5.1 percent) and electricity (3.0 percent). Other energy sources used for cooking comprises of 2.2 percent (Figure 5).

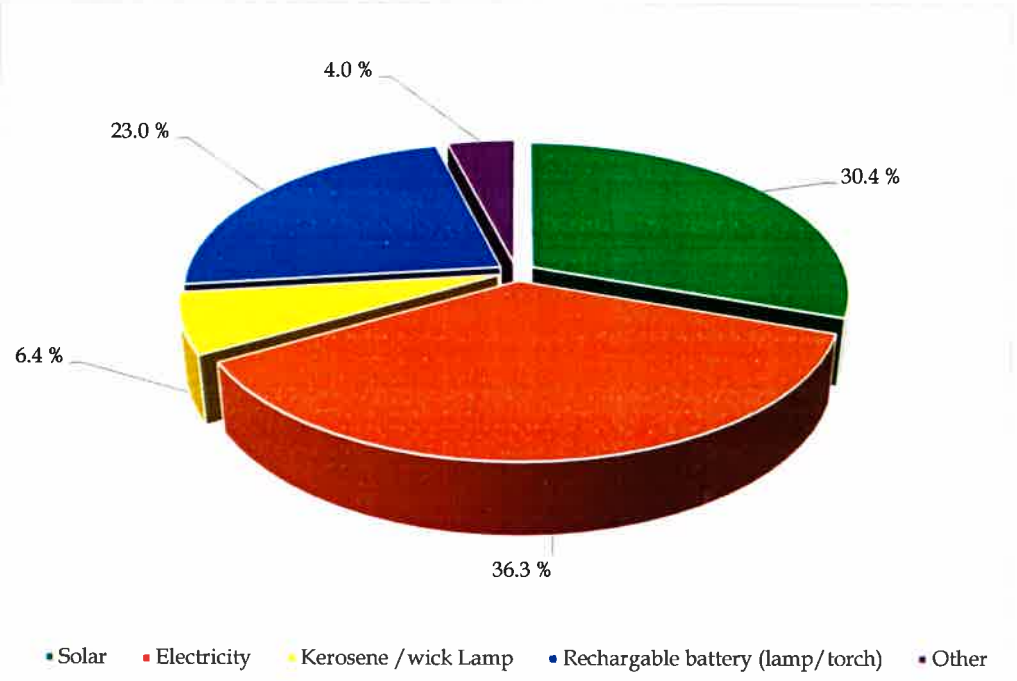
**Figure 5: Percentage Distribution of Households by Main Source of Energy for Cooking, Tanzania Mainland 2019/20**




## 3.5 Main Source of Energy for Lighting

It has been observed from the survey results an increase of modern sources of lighting coming from electricity and solar systems. Results show that, 36.3 percent of households are using electricity as the main source of energy for lighting, followed by solar (30.4 percent) and rechargeable battery lamp/torch (23.0 percent). Traditional source of energy for lighting from kerosene has decreases from 22.3 percent in 2016/17 to 6.4 percent in 2019/20. Other energy sources used for lighting comprises of 4.0 percent of households (Figure 6).

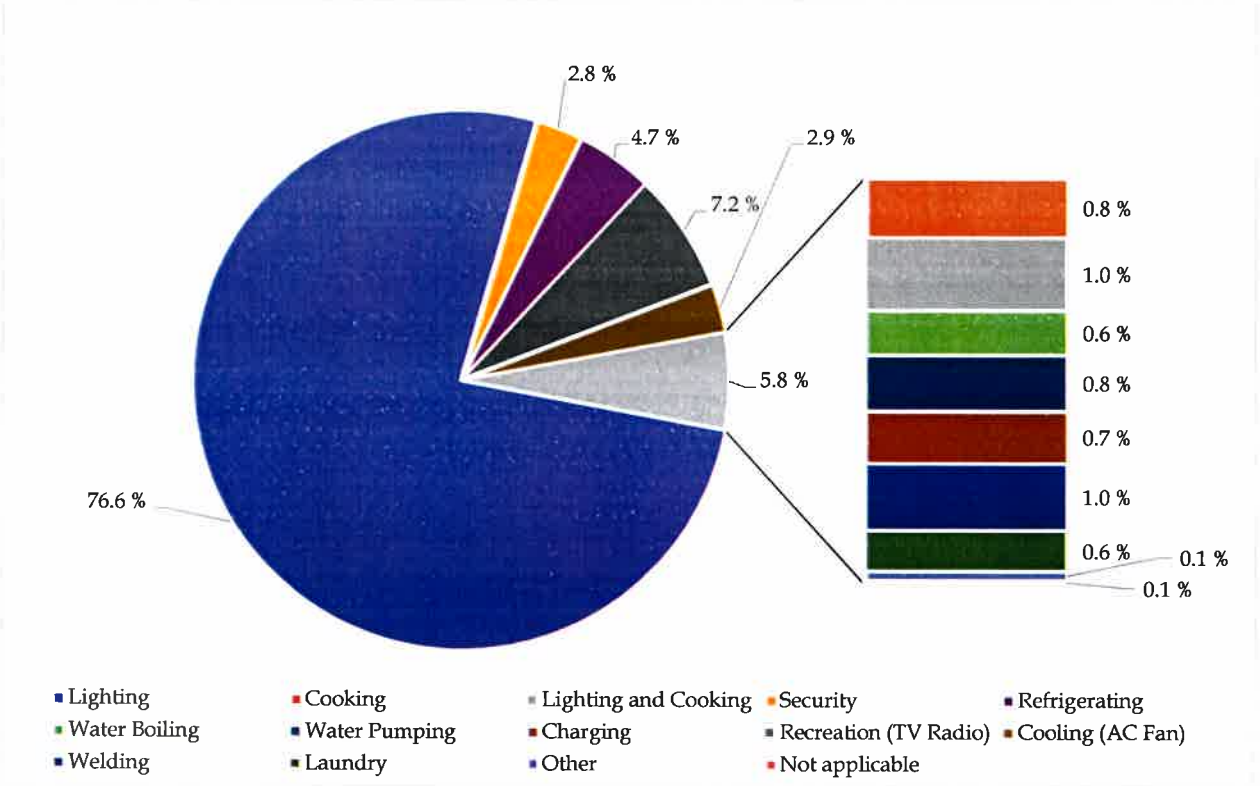
**Figure 6: Percentage Distribution of Households by Main Source of Energy for Lighting, Tanzania Mainland 2019/20**




## 3.6 Main Uses of Electricity in Households

The results show that, 76.6 percent of the households connected to electricity reported lighting as the main use of electricity. Few households reported usage of electricity for recreation (7.2 percent), followed by refrigerating (4.7 percent), cooling (2.9 percent) and security (2.8 percent). Other usage of electricity comprises of 5.8 percent of households as shown in Figure 7.

**Figure 7: Percentage Distribution of Households Reported the Main Uses of Electricity in Households, Tanzania Mainland 2019/20**

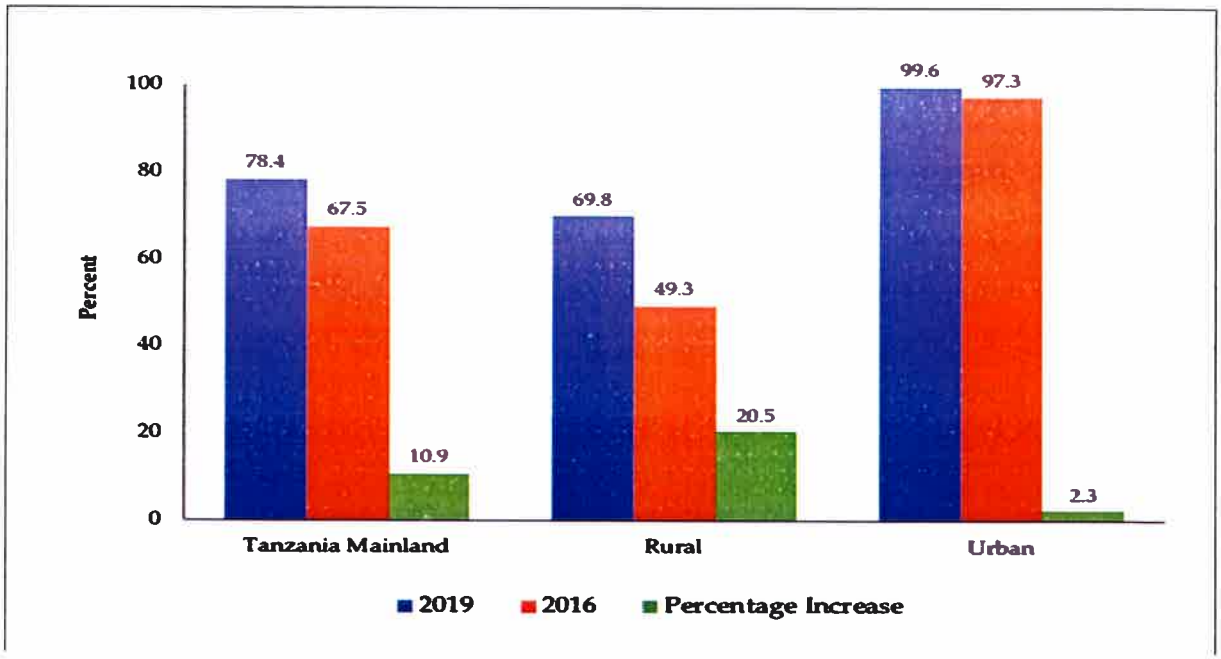



## 3.7 Percentage Increase of Population with Access to Electricity from 2016/17 2019/20

From 2016/17 to 2019/20, in overall, there has been an increase of 10.9 percent of population with access to electricity where by rural population with access to electricity has increased by 20.5 percent and urban population by 2.3 percent.

Geita region had the highest increase in terms of its population accessing electricity with an increase of 27.8 percent, followed by Rukwa (21.0 percent), Ruvuma (20.2 percent), Dodoma (20.0 percent) and Mtwara (19.9 percent). Region with the smallest increase in population accessing electricity was Kilimanjaro (1.9 percent), followed by Mbeya (3.0 percent), Arusha (4.5 percent), Pwani (5.4 percent) and Morogoro (6.0 percent) (Figure 8, Map 5).

**Figure 8: Percentage Increase of Population with Access to Electricity by Place of Residence, Tanzania Mainland, 2019/20**

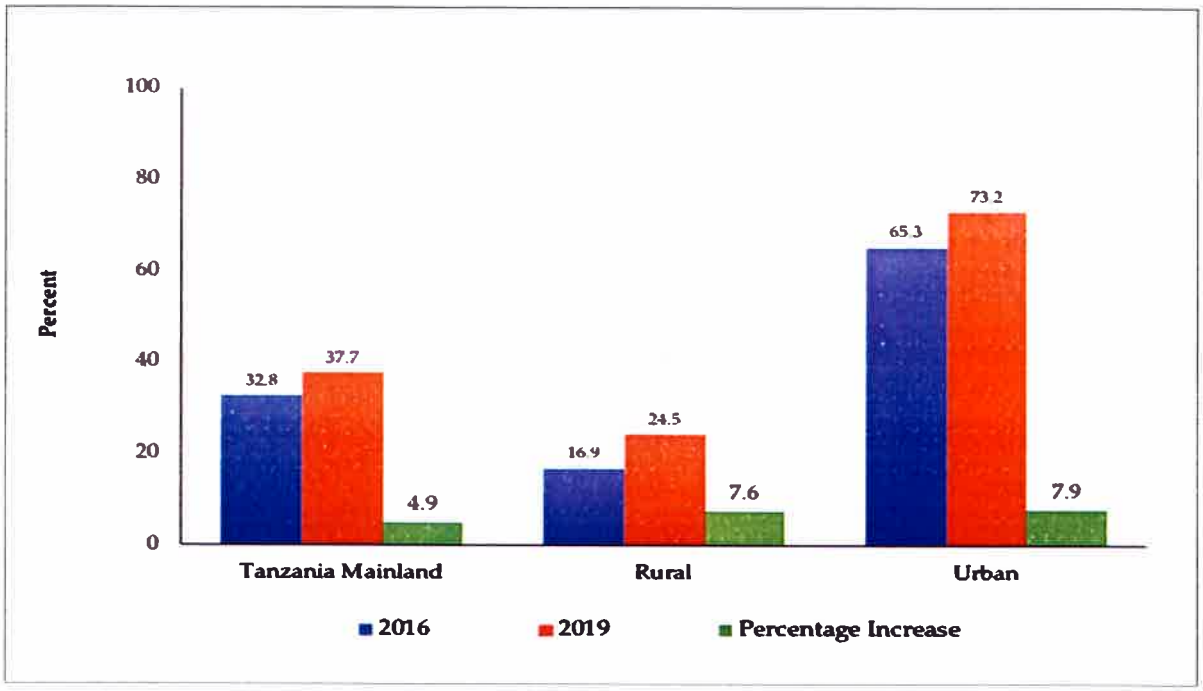



## 3.8 Percentage Increase of Households Connected to Electricity from 2016/17 2019/20

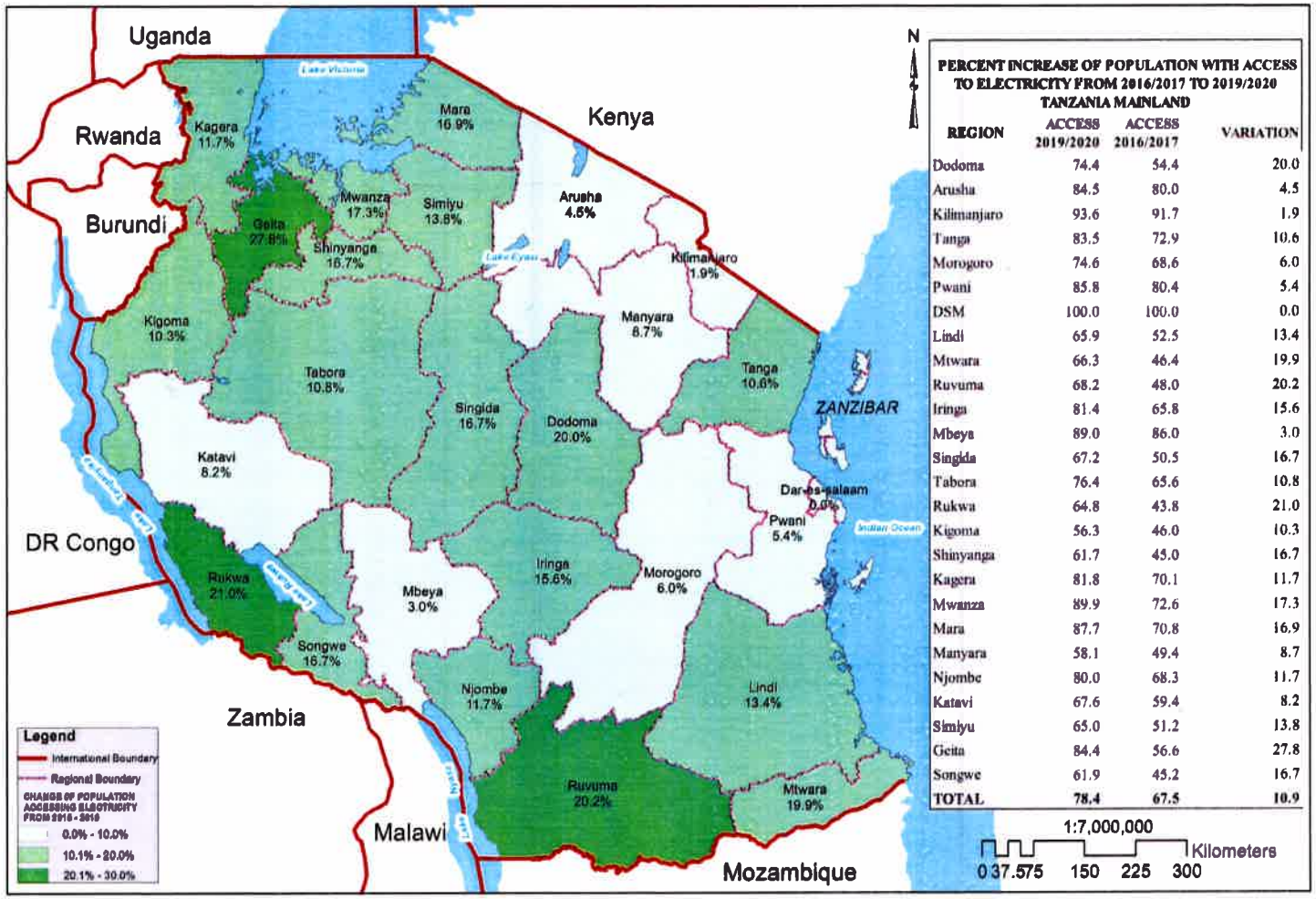
There has been an overall increase of 4.9 percent of households connected to electricity from 2016/17 to 2019/20, where by rural households connected to electricity has increased by 7.6 percent and urban households by 7.9 percent.

Regional wise, Geita region had the highest increase in terms of its households connected to electricity with an increase of 17.8 percent, followed by Mbeya (12.8 percent), Mara (12.5 percent), Pwani (11.9 percent) and Dodoma (10.9 percent). The region with the smallest increase in households connected to electricity was Manyara (2.9 percent), followed by Shinyanga (3.4 percent), Morogoro (4.1 percent), Simiyu (4.9 percent) and Kilimanjaro (5.0 percent) (Figure 9, Map 6).

**Figure 9: Percentage Increase of Households Connected to Electricity by Place of Residence,Tanzania Mainland, 2019/20**



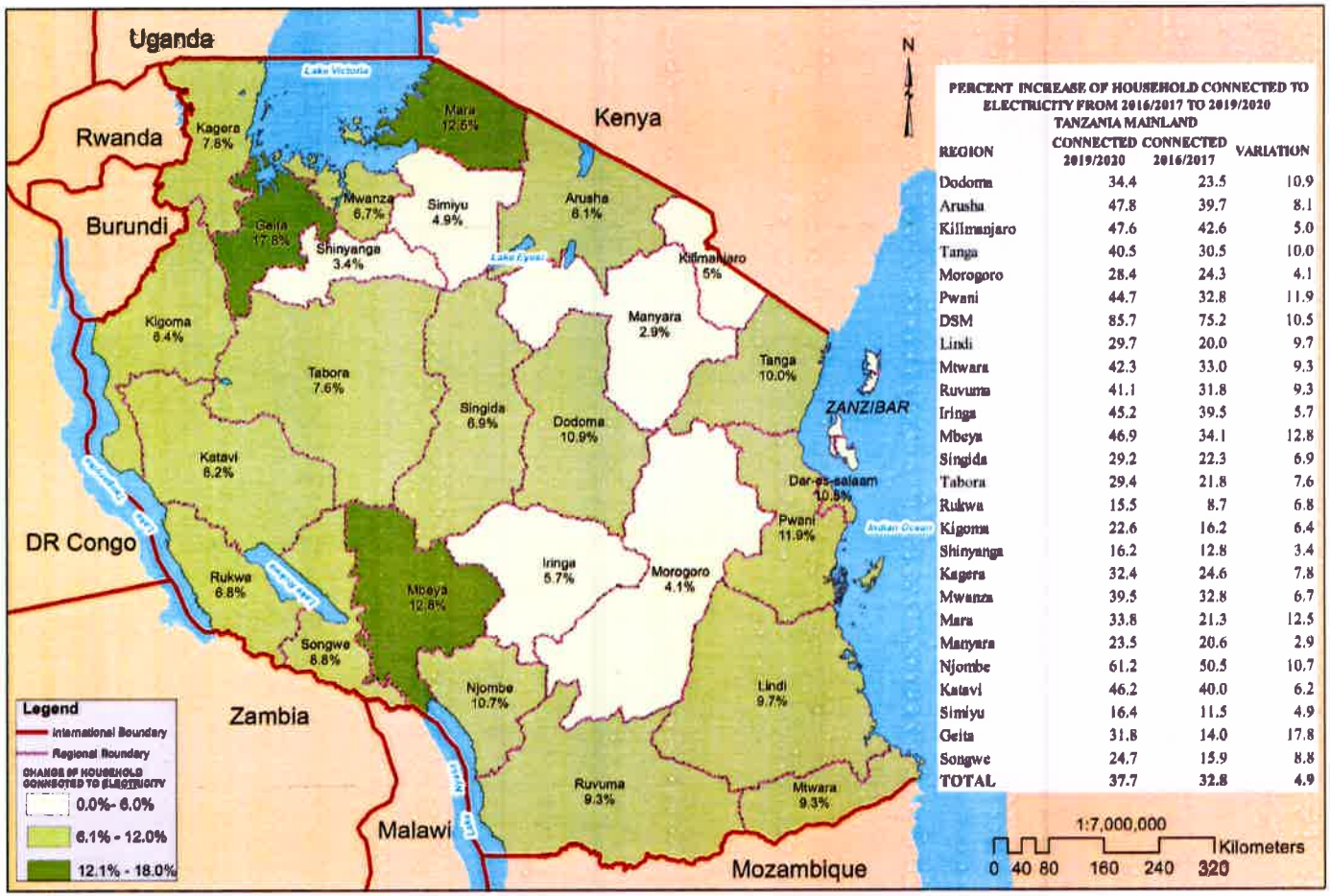
**Map 5: Percentage Increase of Population with Access to Electricity by Region from 2016/17 to 2019/20**




**PERCENT INCREASE OF POPULATION WITH ACCESS TO ELECTRICITY FROM 2016/2017 TO 2019/2020 TANZANIA MAINLAND**

| REGION | ACCESS 2019/2020 | ACCESS 2016/2017 | VARIATION |
|---|---|---|---|
| Dodoma | 74.4 | 54.4 | 20.0 |
| Arusha | 84.5 | 80.0 | 4.5 |
| Kilimanjaro | 93.6 | 91.7 | 1.9 |
| Tanga | 83.5 | 72.9 | 10.6 |
| Morogoro | 74.6 | 68.6 | 6.0 |
| Pwani | 85.8 | 80.4 | 5.4 |
| DSM | 100.0 | 100.0 | 0.0 |
| Lindi | 65.9 | 52.5 | 13.4 |
| Mtwara | 66.3 | 46.4 | 19.9 |
| Ruvuma | 68.2 | 48.0 | 20.2 |
| Iringa | 81.4 | 65.8 | 15.6 |
| Mbeya | 89.0 | 86.0 | 3.0 |
| Singida | 67.2 | 50.5 | 16.7 |
| Tabora | 76.4 | 65.6 | 10.8 |
| Rukwa | 64.8 | 43.8 | 21.0 |
| Kigoma | 56.3 | 46.0 | 10.3 |
| Shinyanga | 61.7 | 45.0 | 16.7 |
| Kagera | 81.8 | 70.1 | 11.7 |
| Mwanza | 89.9 | 72.6 | 17.3 |
| Mara | 87.7 | 70.8 | 16.9 |
| Manyara | 58.1 | 49.4 | 8.7 |
| Njombe | 80.0 | 68.3 | 11.7 |
| Katavi | 67.6 | 59.4 | 8.2 |
| Simiyu | 65.0 | 51.2 | 13.8 |
| Geita | 84.4 | 56.6 | 27.8 |
| Songwe | 61.9 | 45.2 | 16.7 |
| TOTAL | 78.4 | 67.5 | 10.9 |

**Map 6: Percentage Increase of Household to Electricity by Region from 2016/17 to 2019/20**




PERCENT INCREASE OF HOUSEHOLD CONNECTED TO ELECTRICITY FROM 2016/2017 TO 2019/2020 TANZANIA MAINLAND

| REGION | CONNECTED 2019/2020 | CONNECTED 2016/2017 | VARIATION |
|---|---|---|---|
| Dodoma | 34.4 | 23.5 | 10.9 |
| Arusha | 47.8 | 39.7 | 8.1 |
| Kilimanjaro | 47.6 | 42.6 | 5.0 |
| Tanga | 40.5 | 30.5 | 10.0 |
| Morogoro | 28.4 | 24.3 | 4.1 |
| Pwani | 44.7 | 32.8 | 11.9 |
| DSM | 85.7 | 75.2 | 10.5 |
| Lindi | 29.7 | 20.0 | 9.7 |
| Mtwara | 42.3 | 33.0 | 9.3 |
| Ruvuma | 41.1 | 31.8 | 9.3 |
| Iringa | 45.2 | 39.5 | 5.7 |
| Mbeya | 46.9 | 34.1 | 12.8 |
| Singida | 29.2 | 22.3 | 6.9 |
| Tabora | 29.4 | 21.8 | 7.6 |
| Rukwa | 15.5 | 8.7 | 6.8 |
| Kigoma | 22.6 | 16.2 | 6.4 |
| Shinyanga | 16.2 | 12.8 | 3.4 |
| Kagera | 32.4 | 24.6 | 7.8 |
| Mwanza | 39.5 | 32.8 | 6.7 |
| Mara | 33.8 | 21.3 | 12.5 |
| Manyara | 23.5 | 20.6 | 2.9 |
| Njombe | 61.2 | 50.5 | 10.7 |
| Katavi | 46.2 | 40.0 | 6.2 |
| Simiyu | 16.4 | 11.5 | 4.9 |
| Geita | 31.8 | 14.0 | 17.8 |
| Songwe | 24.7 | 15.9 | 8.8 |
| TOTAL | 37.7 | 32.8 | 4.9 |

## 3.9 Conclusion

For the past four years, population accessing electricity in Tanzania Mainland has increased from 67.5 percent in 2016/17 to 78.4 percent in 2019/20. It has been observed regional variations in terms population accessing electricity in 2019/20 whereby Dar es Salaam region the whole population has an access to electricity.

Household connectivity for the past four years has increased from 32.8 percent in 2016/17 to 37.7 percent in 2019/20. There has been an overall increase of 4.9 percent of households connected to electricity from 2016/17 to 2019/20, where by rural households connected to electricity has increased by 7.6 percent and urban households by 7.9 percent.

Geita region had the highest increase in terms of its households connected to electricity with an increase of 17.8 percent, followed by Mbeya (12.8 percent), Mara (12.5 percent), Pwani (11.9 percent) and Dodoma (10.9 percent).