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Final report

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Acronyms and Abbreviations

EA	Enumeration Area
Cont	Continued
EDM	Electricidade de Moçambique, public enterprise
HH	Households
IASES	Impact of Access to Sustainable Energy Survey
INE	Instituto Nacional de Estatística/National Statistical Institute
Km²	Square kilometre
KW	Kilowatt
KWh	Kilowatt-hour
LPG	Liquefied petroleum gas
MIREME	Ministry of mineral resources and Energy
N	Total population
Norad	Norwegian Agency for Development Cooperation
Pop	Population
PSU	Primary sampling unit
SEN	Sistema Estatístico Nacional/National Statistical System
SSB	Statistisk sentralbyrå/Statistics Norway
W	Watts
Wh	Watt-hour
WB	World Bank

Symbols in tables	Symbol
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Impact of Access to Sustainable Energy Survey 2022 – Final report

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Clarification for users
Due to rounding, the totals presented in tables may not correspond to the sum of the figures presented.

Preface

This is a translation of a report by the National Statistics Institute (INE) in Mozambique on the impact of sustainable energy from 2023, "*Inquérito sobre o Impacto do Acesso à Energia Sustentável – IAES 2022 Relatório Final*". INE is the legal entity responsible for producing the country's official statistics based on universally accepted methodologies.

In 2022, INE carried out the Impact of Access to Sustainable Energy Survey (IASES) in Mozambique. The aim of IASES is to obtain quality information to feed into the seventh Sustainable Development Goal (SDG7), for national and regional planning, as well as for international comparisons.

The IASES is a harmonised contribution to the World Bank's Sustainable Energy for All (SE4All) international research initiative for coordinated measurement of energy access. The IASES questionnaire is consistent with the SE4All initiative, having included a completely new module, developed jointly by INE and Statistics Norway (SSB), with the aim of knowing and documenting more about the impact, economic activity and human well-being of households and communities that have access to modern energy sources.

In order to carry out this operation, INE had the support of the Norwegian Agency for Development Cooperation (Norad), providing financial resources, as well as SSB providing technical assistance. INE also collaborated with the public enterprise Electricidade de Moçambique (EDM) and the Ministry of Mineral Resources and Energy (MIREME) as well as other public administration at central, provincial, district, municipal and local level.

In this context, INE has launched the report of the first Impact of Access to Sustainable Energy Survey (IASES). The data collection period was from April to June 2022.

INE would like to thank its users, respondents, co-operation partners and the entire National Statistical System (SEN) for their involvement in the production and use of official statistics in decision-making processes and the formulation and adjustment of public policies.

Maputo, July 2024
Eliza Mónica Ana Magaua
INE Precident

Statistics Norway, September 2024
Lasse Sandberg
Director of Economic statistics

Abstract

In 2022, INE carried out a sample survey in cooperation with Statistics Norway between April and June to document the impact of modern energy sources, related to economic activity and human well-being of households and communities.

Mozambique has a population of 31,794,791 inhabitants, of whom 15,370,727 are men and 16,624,064 are women, according to population projections for 2022.

The IASES collected data from 6,367 households out of the 6,486 sampled from the whole country.

The extrapolated results of the survey covered 6,833,550 households. The average household has 4.5 members.

Almost half of the population aged six and over (45.2 per cent) has completed primary school, the highest level, followed by secondary school (27.1 per cent), no schooling completed (23.6 per cent), and higher education (3.2 per cent).

Agriculture, animal production, forestry, hunting and fishing are the main economic activities of the economically active population.

Regarding access to and connection to electricity, 50.1 per cent of households in Mozambique have access, 32.0 per cent through the electricity grid and 18.1 per cent through other sources. This means that 49.9 per cent of households have no connection to the grid or other electricity solutions. Lack of access to electricity is most common in rural areas (86.8 per cent), Tete province (84.7 per cent) and Zambezia (83.3 per cent). The few households with electricity in rural areas have usually access through solar energy (85.3 per cent), rechargeable batteries (74.9 per cent) and dry cell batteries (71.4 per cent), compared to urban areas that use electricity from the national grid (72.2 per cent) and electric generators (58.3 per cent).

Around 73 per cent of households charge their mobile phone at home, of which Maputo City has the highest percentage (95.9 per cent).

As for general levels of access to electricity, the following stand out:

- For capacity, 56.9 per cent of households use electricity with access to less than 3 Watts (W), or use less than per day or less than 12 Watt-hour (Wh), or have no access to electricity, mainly in Tete (78.0 per cent), Cabo Delgado (76.0 per cent), Zambézia (67.8 per cent), Nampula (67.0 per cent) and Niassa (65.6 per cent). 34.0 per cent of households in Mozambique have access to at least 2 kW or a daily consumption of at least 8.2 kWh. They can mainly be found in Maputo City (97.8 per cent) and the provinces of Maputo (72.6 per cent) and Gaza (59.1 per cent).
- For availability, 93.6 per cent of consumers have electricity available for at least 23 hours a day.
- In terms of quality, 78.6 per cent of consumers have not experienced any problems with interruptions that have damaged household appliances. However, 21.4 per cent of consumers experienced power interruptions that damaged household appliances, particularly in the urban area (24.3 per cent), Maputo City (39.6 per cent), Sofala (27.4 per cent), Maputo (26.5 per cent) and Zambezia (22.0 per cent) provinces.
- In terms of the reliability of the energy supplied, 65.9 per cent of consumers experience more than fourteen power cuts a week, with Manica, Inhambane and Maputo City provinces standing out with more than 80 per cent of households in this situation.
- In terms of affordability, 63.0 per cent of consumers spend more than 5 per cent of their annual income on electricity.

- In terms of legality, almost all consumers pay their electricity supplier (96.7 per cent). However, the provinces of Zambézia (15.6 per cent) and Niassa (13.9 per cent) have the highest percentage of consumers who do not pay for electricity consumption.
- For health and safety, almost all electricity consumers (99.0 per cent) have never suffered an accident related to electrical installation, connection, maintenance and repairs. However, 2.6 per cent of consumers in Cabo Delgado and 2.2 per cent in Gaza have suffered some serious or fatal injury as a result of unsafe electrical interventions.

With regard to overall access to fuel and clean energy technologies, 40.3 per cent of households have access to sustainable energy, with a greater deficit in rural areas (24.8 per cent) compared to urban areas (72.7 per cent). Thus, with regard to levels of cooking technologies, there are:

- Approximately 72 per cent of households use low convenience cooking to make food, i.e. every 7 days they spend more than 7 hours acquiring fuel for cooking and more than 15 minutes preparing the stove for cooking.
- Around 95 per cent of households use a safe main cooker, i.e. no accidents linked to the cooker in the last 12 months.
- Almost all households spend more than 5 per cent of their annual income on cooking fuel, the situation being most serious in Maputo City (99.4 per cent), Maputo (93.9 per cent) and Niassa (92.1 per cent) provinces.
- 91.0 per cent of households have experienced lack of access to cooking fuel over the last 12 months, more so in rural areas (94.0 per cent) than in urban areas (84.8 per cent).

In terms of the impact of access to energy, the following stand out:

- For livelihoods, there is a small decrease in "landless" households for agriculture, a slight increase in the extent of cultivated area and small ruminant animals among households with access to electricity relative to households without access to electricity. However, the larger the size of the cultivated area, the percentage of households with access to electricity at the highest levels of access tends to decrease.
- For main occupation, , the number of heads of households with access to electricity increased slightly among workers in the private sector compared to households without access.
- In terms of ownership of goods, households with access to electricity have increased slightly over the last 5 years, especially in the case of television sets and computers.
- As for businesses, both in communities with access to energy (82.4 per cent) and those without (78.1 per cent), the majority have been running businesses for more than 5 years.
- As for education, 24.0 per cent of households with access to electricity with children aged 5-14 use solar energy for homework, compared to 1.0 per cent of households without access to electricity. More than two-thirds of households with access to electricity have their children study homework during the day, as opposed to 85.6 per cent of households without access.
- With regard to public lighting and safety, 22.1 per cent of households with access to electricity have street-lights, compared to 5 per cent of households without access to public lighting. Around 86.1 per cent of households with in areas with street-lights have public lighting on at night.
- Regarding safety on the streets, 18.8 per cent of households live in neighbourhoods with night-time police patrols. Urban areas have a higher percentage of households living in streets with police patrols (28.2 per cent) than the rural area (14.3 per cent).
- More than 60 per cent of households with access to electricity feel completely safe walking alone at home and in public places during the day, but 41.4 per cent of households do not feel safe walking alone at night. For households without access to electricity, 36.6 per cent do not feel safe walking alone at night.

Regarding the impact of the COVID-19 pandemic, according to the perceptions of households, the following stand out:

- 26.2 per cent of households engaged in agriculture, animal production, forestry, hunting and fishing, decreased their income compared to 5.9 per cent of households engaged in non-agricultural business activities.
- 30.8 per cent of households decreased their income, 17.0 per cent decreased consumption and 4.1 per cent sold assets because of the global pandemic.

Sammendrag

Prosjektet " Impact Access to Sustainable Energy Survey" (IASES) ble gjennomført i samarbeid mellom de, Instituto Nacional de Estatística i Mosambik (INE), National Bureau of Statistics i Tanzania (NBS) og Statistisk sentralbyrå i Norge (SSB) i perioden 2018-2024. Prosjektet ble finansiert av Direktoratet for utviklingssamarbeid i Norge (Norad).

Som del av prosjektet gjennomførte INE i 2022 en utvalgsundersøkelse i samarbeid med Statistisk sentralbyrå for å dokumentere tilgangen på og virkningen av moderne energikilder på økonomisk aktivitet og levekår for husholdninger og lokalsamfunn.

IASES samlet inn data fra 6 367 husholdninger av de 6 486 som ble utvalgt fra hele landet. De ekstrapolerte resultatene av undersøkelsen dekket 6 833 550 husholdninger. Den gjennomsnittlige husholdningen i Mosambik har 4,5 medlemmer. Mosambik har en befolkning på 31,8 millioner innbyggere, ifølge befolkningsprognoser for 2022.

50,1 prosent av husholdningene i Mosambik har tilgang til strøm, 32,0 prosent gjennom strømnettet og 18,1 prosent gjennom andre kilder. Dette betyr at 49,9 prosent av husholdningene ikke har tilkobling til strømnettet eller andre strømløsninger. Manglende tilgang til strøm er mest vanlig i rurale områder (86,8 prosent). Husholdningene med strøm i rurale områder har vanligvis tilgang gjennom solenergi.

Når det gjelder generell tilgang til rene energiteknologier for matlaging, har 40,3 prosent av husholdningene tilgang til bærekraftig energi. Tilgangen er lavere i rurale områder (24,8 prosent) enn i urbane områder (72,7 prosent). De aller fleste husholdningene bruker mer enn 5 prosent av sin årlige inntekt på energi til matlaging.

Denne rapporten er oversettelse av rapporten Inquérito sobre o Impacto do Acesso à Energia Sustentável – IAES 2022 Relatório Final, utarbeidet av INE.

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1. Introduction

Access to affordable, reliable, sustainable, and modern energy for all is the seventh Sustainable Development Goal (SDG7) and is part of the 2030 Agenda, adopted by almost all the countries in the world within the context of the United Nations, to which Mozambique belongs. The fulfilment of this goal requires coordinated activities to monitor and evaluate the impact of project implementation.

The National Statistics Institute is presenting the final report of the first Survey on the Impact of Access to Sustainable Energy (IASES 2022), which collected data in all the country's provinces between 18 April and 30 June 2022.

IASES 2022 was a sample survey of households to collect information on access and connection to the electricity grid and other sources, its impact, cooking solutions and the respective types of cookers used in the country.

This survey covered the population aged 5 years and above, of both sexes, in randomly selected households throughout the country. This population is represented in age subgroups ranging from 5 to 14 years and 15 years and above.

The results of the survey will provide national and international public and private institutions with an evidence base for knowledge about access to modern energy at household level and its impact on communities.

The statistical information contained in this report is presented through tables, figures and comments. In addition to this introduction, aspects of the general description of the country, sampling and socio-demographic characterisation are presented. This is followed by information on access, connection and the impact of sustainable energy in Mozambique, in seven themes: access and connection to electricity; access to fuel and clean technologies; joint access to electricity and modern cooking solutions; gender and access to electricity and improved cook cookers; human well-being and income-generating activities; analysing the impact of access to energy; and the impact of the Covid-19 pandemic on access to energy.

This report is a translated version of the report "Inquérito sobre o Impacto do Acesso à Energia Sustentável – IAES 2022 Relatório Final" published by INE.

2. Country overview

Mozambique is located on the east coast of southern Africa, between parallels 10º27' and 26º52' South latitude and between meridians 30º12' and 40º51' East longitude. It is bordered to the north by Tanzania; to the north-west by Malawi and Zambia; to the west by Zimbabwe, South Africa and Eswatini; to the south by South Africa and to the east by the Indian Ocean. The country covers a land area of 799,380 km^2.

According to population projections based on the IV General Population and Housing Census (RGPH) of 2017, the total population of Mozambique in 2022 was 31,794,791 inhabitants, of which 15,370,727 were men, representing 48.3 per cent of the total population, and 16,424,064 (51.7 per cent) were women. The urban area comprised 10,961,467 (34.5 per cent) and the rural area 20,833,324 (65.5 per cent). The provinces of Nampula and Zambézia are the most populous in the country, totalling more than 12 million inhabitants. The national population density was 39.8 inhabitants per km^2.

The country is made up of 10 provinces and Maputo City, which has provincial status. Niassa Province has the largest surface area but the lowest population density, while Maputo City has the smallest surface area and the highest population density, see table 2.1.

Table 2.1 Population, surface area and population density by province. Mozambique, 2022

	Population					Area	Population
Province	Men	Women	Total	Urban	Rural	(km^2)	density (Pop/km^2)
Mozambique	15 370 727	16 424 064	31 794 791	10 961 467	20 833 324	799 380	39,8
Niassa	1 145 590	1 203 605	2 349 195	632 112	1 717 083	129 056	18,2
Cabo Delgado	1 299 258	1 370 820	2 670 078	641 227	2 028 851	82 625	32,3
Nampula	3 163 853	3 326 418	6 490 271	2 182 848	4 307 423	81 606	79,5
Zambézia	2 803 194	3 013 934	5 817 128	1 067 528	4 749 600	105 008	55,4
Tete	1 516 015	1 564 431	3 080 446	739 837	2 340 609	100 724	30,6
Manica	1 079 222	1 156 614	2 235 836	809 354	1 426 482	61 661	36,3
Sofala	1 266 428	1 334 326	2 600 754	1 109 661	1 491 093	68 018	38,2
Inhambane	726 330	837 959	1 564 289	470 239	1 094 050	68 615	22,8
Gaza	667 686	798 116	1 465 802	473 051	992 751	75 709	19,4
Maputo	1 153 513	1 237 160	2 390 673	1 705 291	685 382	26 058	91,7
Maputo City	549 638	580 681	1 130 319	1 130 319	-	300	3 767,70

Source: Population projections, 2017 -2050

2.1. Mozambique's energy profile

Mozambique currently has an installed power generation potential of 2,966 MW. The main source of energy production is hydroelectric. Renewable energy accounts for 77.7 per cent of its capacity. In 2021 energy production totalled 18,662 GWh, with renewables accounting for 83.2 per cent of total production. Production from natural gas is the main source of non-renewable energy, contributing around 15.0 per cent of national production. In Mozambique, 50.0 per cent of the energy produced is exported to neighbouring countries, with the Republic of South Africa being the main destination, accounting for around 80.0 per cent of exports. Per capita consumption in 2021 was 196 kWh. In terms of billing, the average energy billed per consumer was 1 383 kWh/consumer in 2021. The percentage of consumers connected to the national grid in 2021 was 36.9 per cent, of which 92.0 per cent are domestic consumers (MIREME: Energy Statistical Report 2020-2021[1]).

The current hydrocarbon reserve is around 180 trillion cubic feet (tcf), of which 126 tcf in the Rovuma Basin and 4 tcf in the Mozambique Basin. Natural gas production in 2021 was 4,592.8 million cubic metres and condensate production was 0.3 million cubic metres. Coal reserves are currently estimated at around 20 billion tonnes, with production in 2021 standing at 9,761.9 tonnes.

[1] clubofmozambique.com/wp-content/uploads/2023/04/RELATORIO-ESTATISTICO-ENERGIA-2020_21-MIREME.pdf

3. Sample: The Impact of Access to Sustainable Energy Survey (IASES)

3.1. Population

The IASES is representative for the population living in Mozambique. As customary in surveys, it does however exclude the population living in collective accommodation (hospitals, barracks, penitentiaries, student homes, hotels and similar), the homeless and residents of embassies or their representations.

3.2. Sampling frame

The IASES sample was selected on the basis of a cartographic base that INE uses to carry out intercensal household surveys, based on cartographic data and the 2017 General Population and Housing Census.

3.3. Sample design

The IASES sample was sized independently for each of the 10 provinces and also for Maputo City (as a domain of analysis).

The sample was drawn at a 95 per cent confidence level for the planned domains of analysis (national, urban or rural and provincial). Within each domain of analysis, the sample was made up of existing strata (urban and rural) and the following substrata:

- Households with access to electricity before 2016;
- Households with access to electricity from 2016 to 2020; and
- Households without access to electricity.

The geographical dispersion of the selected enumeration areas in each province was ensured in the sample of this survey. The enumeration areas selected in Cabo Delgado Province suffered some spatial concentration in their distribution to the districts in the centre and south of the province, due to the current context (insecurity) in the northern districts.

The IASES sample is probabilistic, stratified and was selected in two stages:

First stage: Selection of the Primary Sampling Units (PSU), which are a set of Enumeration Areas (EA). An EA is a territorial partition designed by the National Statistics Institute for the purposes of statistical operations. The UPA were selected with probability proportional to household size, where size is the number of households in the 2017 Census in each stratum and substratum. In total, 285 Enumeration Areas were selected.

Second stage: Selection of Households within the EA. In the Urban area of residence, 21 Households were selected and in the Rural area of residence 24 Households were selected. The selection of households was based on the application of a selection table adapted from Kish, built into the tablet.

Table 3.1 Distribution of the sample of enumeration areas and households by province. Mozambique, 2022

Province	Number of EA in sample			Expected households		
	Urban	Rural	Total	Urban	Rural	Total
Mozambique	120	165	285	2 478	4 008	6 486
Niassa	6	14	20	126	336	462
Cabo Delgado	6	17	23	105	432	537
Nampula	16	28	44	315	696	1011
Zambézia	8	30	38	168	720	888
Tete	7	18	25	147	432	579
Manica	8	13	21	168	312	480
Sofala	12	12	24	252	288	540
Inhambane	7	14	21	147	336	483
Gaza	8	13	21	168	312	480
Maputo	18	6	24	378	144	522
Maputo City	24	0	24	504	0	504

3.4. Coverage and response rates

Of the 285 planned enumeration areas, divided into urban and rural, 100 per cent coverage was achieved. During the post-stratification of EAs following the fieldwork it was realised that some EAs classified as urban were in fact rural. This happened to some EAs in the provinces Cabo Delgado, Nampula and Maputo. Table 3.2 illustrated the magnitude of the problem. The point estimates will not be affected by this, but the accuracy of the estimates will be marginally lower for urban areas in the affected provinces.

Table 3.2 Coverage and response rates of IASES sampling units (PSUs) and households by province. Mozambique, 2022

Province	Number of EA in sample			Number of EA visited			Coverage		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Mozambique	120	165	285	116	169	285	96,7	102,4	100,0
Niassa	6	14	20	6	14	20	100,0	100,0	100,0
Cabo Delgado	6	17	23	5	18	23	83,3	105,9	100,0
Nampula	16	28	44	15	29	44	93,8	103,6	100,0
Zambézia	8	30	38	8	30	38	100,0	100,0	100,0
Tete	7	18	25	7	18	25	100,0	100,0	100,0
Manica	8	13	21	8	13	21	100,0	100,0	100,0
Sofala	12	12	24	12	12	24	100,0	100,0	100,0
Inhambane	7	14	21	7	14	21	100,0	100,0	100,0
Gaza	8	13	21	8	13	21	100,0	100,0	100,0
Maputo	18	6	24	16	8	24	88,9	133,3	100,0
Maputo City	24	--	24	24	--	24	100,0	--	100,0

The overall response rate at household level corresponds to the ratio between the number of valid interviews (6,367) and the sample size (6,486), i.e. 98.1 per cent. The minimum response rate was 94.0 per cent in Maputo City and the maximum was 99.6 per cent in Gaza and Maputo provinces (table 3.3).

Table 3.3 Response rate by area of residence by province. Mozambique, 2022

	Expected households			Households interviewed			Response rate		
Province	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Mozambique	2 478	4 008	6 486	2401	3966	6367	96,9	98,9	98,1
Niassa	126	336	462	124	331	455	98,4	98,5	98,5
Cabo Delgado	105	432	537	99	424	523	94,3	98,1	97,4
Nampula	315	696	1011	303	686	989	96,2	98,6	97,8
Zambézia	168	720	888	161	718	879	95,8	99,6	98,9
Tete	147	432	579	146	432	578	99,3	100,0	99,8
Manica	168	312	480	166	301	467	98,8	96,5	97,3
Sofala	252	288	540	242	285	527	96,0	99,0	97,6
Inhambane	147	336	483	144	333	477	98,0	99,1	98,8
Gaza	168	312	480	166	312	478	98,8	100,0	99,6
Maputo	378	144	522	376	144	520	99,5	100,0	99,6
Maputo City	504	..	504	474	..	474	94,0	..	94,0

3.5. Calculation of Weights

The IASES data was weighted to match the size and structure of households by stratum (urban and rural) and sub-strata at the household level. The data was also adjusted for non-response.

The IASES weights were adjusted to the size and structure of the population halfway through the data collection period (23 May 2022).

3.6. Level of Precision of Estimates and Calculation of Sampling Errors

As with all surveys, the results are affected by two types of errors; sampling errors and non-sampling errors. Sampling errors occur due to a deviation or bias of the sample data in relation to the true value of the population. In IASES 2022, sampling errors were minimised by applying the sample design effect.

Non-sampling errors can occur in the process of collecting, processing and/or validating the data. To this end, they were minimised with good design of data collection instruments, use of the application, training of field staff, adequate supervision at all stages of the survey process, quality control in data collection and careful and thorough data validation.

3.7. Cartography

The IASES is a statistical sampling operation, carried out among households. Therefore, to ensure that the survey took place within the selected enumeration areas, a cartography component was used under the GVSIG mobile application installed on tablets, with Global Positioning System (GPS) functionality. This application integrated dynamic maps of the selected enumeration areas, associated with the country's administrative division hierarchy (province, district, administrative post, locality, neighbourhoods and towns).

In the data collection phase, the EAs were coupled to the GVSIG Mobile application, allowing each brigade to carry out the listing and interviews within the selected areas, thus guaranteeing quality coverage of both the EAs and the selected households.

3.8. Organisation of IASES Activities

To collect data for IASES 2022, 13 teams were set up. The provinces of Zambézia and Nampula had two (2) teams each and the remaining provinces had one each.

Each team consisted of:

- 1 Controller,
- 3 Inquirers and
- 1 Driver.

On average, each enquirer interviewed 7 households in urban areas and 8 households in rural areas, over three (3) days in each EA.

A total of 65 candidates were hired, including controllers, enquirers and drivers. The training of supervisors, controllers and surveyors was conducted at the same time and in the same place by technicians from INE's central services.

3.9. Collection and processing of data

In order to compare the results of IASES 2022 with the data from the same survey carried out in Tanzania, the same questionnaires were used in both countries:

- Household questionnaire; and
- Community questionnaire (completed by the controller), applied in each enumeration area to a minimum group of 7 influential individuals from various sectors in the community.

Data collection was through direct interviews with the selected households using Computer Assisted Personal Interview (CAPI). In each selected household, the interviews were carried out through one or several visits to the same household during the team's time in the enumeration area.

Once the data had been collected in each household, the interviewer had to send it to the controller, who in turn sent it to the central server where the data was managed by the technical IT team and then shared with the analysis team.

After the end of the data collection period, the database was cleaned and converted into a statistical package for later analysis.

4. Socio-demographic characteristics

This chapter presents the characteristics of the household in terms of their distribution by gender and age, size of the household, level of education, position in the labour process, main activities and some aspects of housing. The IASES considers a household to be made up of a person or group of people, whether they are related or not, who live in the same house, share meals and most of the household expenses.

4.1. Household size and composition

The results show that there are 6,833,550 households in the country (table 4.1), of which 70.1 per cent are headed by men and 67.5 per cent live in rural areas. The provinces of Nampula and Zambézia have the highest number of households, corresponding to 19.7 per cent and 19.1 per cent of the total number of households in Mozambique, respectively. In contrast, Maputo City (3.9 per cent) and Gaza Province (4.5 per cent) have the lowest number of households.

Table 4.1 Percentage distribution of households. Mozambique, 2022

	Weighted number of households	Per cent
National	6 833 550	100,0
Sex of the head of household		
Men	4 787 989	70,1
Women	2 045 561	29,9
Area of residence		
Urban	2 217 727	32,5
Rural	4 615 822	67,5
Province		
Niassa	473 412	6,9
Cabo Delgado	577 991	8,5
Nampula	1 346 766	19,7
Zambézia	1 305 855	19,1
Tete	674 671	9,9
Manica	416 778	6,1
Sofala	539 088	7,9
Inhambane	364 432	5,3
Gaza	306 011	4,5
Maputo	561 985	8,2
Maputo City	266 561	3,9

The household size referred to above corresponds to a population of 30,890,953 inhabitants, 45 per cent of whom are aged 0-14, 52.2 per cent aged 15-64 and 2.8 per cent aged 65 or over. This distribution by age at national level didn't show much difference by gender (Table 4.2).

According to area of residence, rural areas have a higher percentage of the population aged 0-14 (47.4 per cent) than urban areas, where a higher percentage of the population aged 15-64 is concentrated (57.4 per cent).

In terms of distribution by province, the results indicate that more than 60 per cent of the population of Maputo City and Province is between 15 and 64 years old.

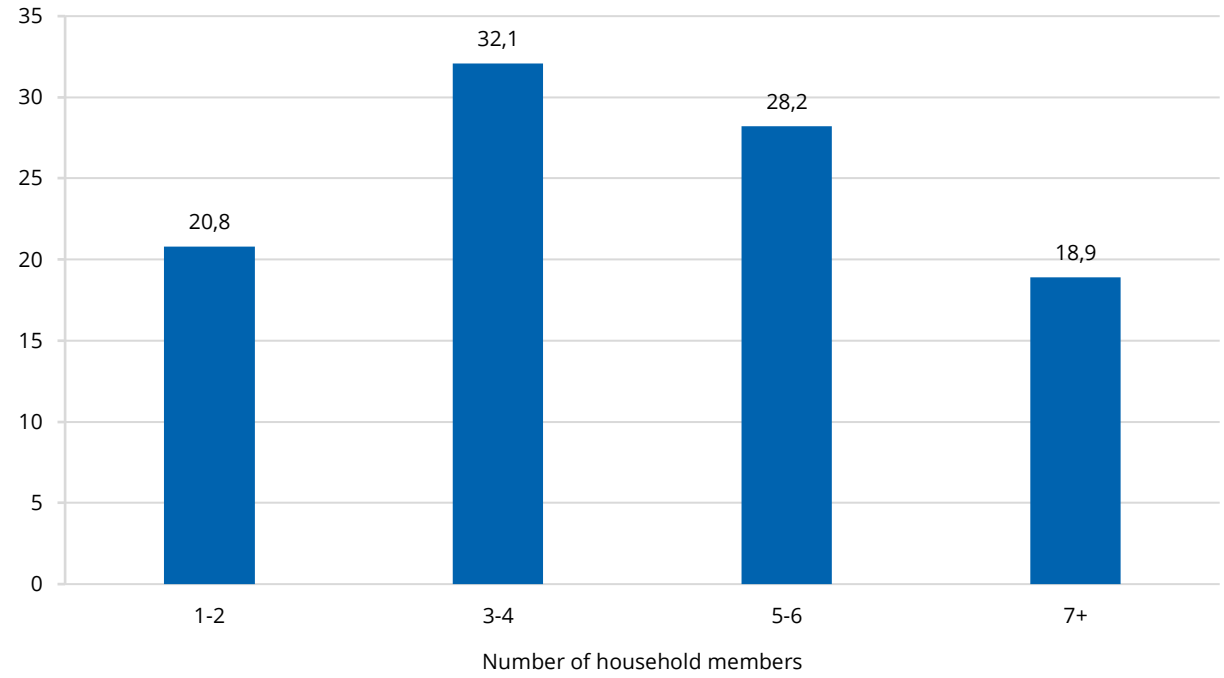
Table 4.2 Percentage distribution of the population by age group. Mozambique, 2022

	Age groups				
	0-14	15-64	65+	Total	N*
National	45,0	52,2	2,8	100,0	30 890 953
Sex					
Men	45,2	52,1	2,7	100,0	15 198 349
Women	44,7	52,2	3,0	100,0	15 692 604
Area of residence					
Urban	40,2	57,4	2,5	100,0	10 220 897
Rural	47,4	49,6	3,1	100,0	20 670 056
Province					
Niassa	48,6	47,7	3,8	100,0	2 125 488
Cabo Delgado	48,8	48,3	2,9	100,0	2 623 586
Nampula	49,4	49,0	1,6	100,0	5 887 310
Zambézia	47,6	50,2	2,2	100,0	5 838 109
Tete	45,6	51,8	2,7	100,0	3 070 703
Manica	45,7	51,5	2,8	100,0	2 227 822
Sofala	42,9	54,0	3,0	100,0	2 581 656
Inhambane	39,3	54,7	6,0	100,0	1 562 538
Gaza	40,7	54,8	4,5	100,0	1 464 707
Maputo	35,8	61,0	3,2	100,0	2 379 009
Maputo City	27.3	68.8	3.9	100.0	1 130 025

*Weighted population figure based on the sample up to May 2022.

FIgure 4.1 shows the percentage distribution of households by number of members. 32.1 per cent of households have 3 to 4 people, followed by those with 5 to 6 members (28.2 per cent).

Figure 4.1 Percentage distribution of households by number of members. Mozambique, 2022



According to gender, female-headed households have a higher percentage of 1-2 members (29.6 per cent) and 3-4 members (35.8 per cent) than male-headed households, which are predominantly 5-6 members, with 31 per cent of the total. By area of residence, there are no major differences in the distribution of family composition by number of people (table 4.3).

As for the geographical distribution of the number of people per family unit, Manica province, with 32.3 per cent of family units made up of five to six members and 28.8 per cent of family units made up of seven or more members, is the province with the highest number of family units in the country.

The average number of people per household across the country is 4.5, slightly higher among male-headed households (4.8). Manica Province has the highest average in the country with 5.4 members.

Table 4.3 Percentage distribution of households by number of members. Mozambique, 2022

	Number of household members						Average number
	1-2	3-4	5-6	7+	Total	N	og members
Nacional	20,8	32,1	28,2	18,9	100,0	6 833 550	4,5
Sex of household head							
Men	17,1	30,5	31,0	21,4	100,0	4 787 989	4,8
Women	29,6	35,8	21,7	12,9	100,0	2 045 561	3,9
Area of residence							
Urban	20,2	32,6	27,5	19,7	100,0	2 217 727	4,6
Rural	21,1	31,9	28,5	18,5	100,0	4 615 822	4,5
Province							
Niassa	19,8	32,1	32,4	15,6	100,0	473 412	4,5
Cabo Delgado	21,4	31,5	27,4	19,8	100,0	577 991	4,5
Nampula	22,9	31,2	27,9	18,0	100,0	1 346 766	4,4
Zambézia	21,0	31,0	29,7	18,3	100,0	1 305 855	4,5
Tete	17,1	35,5	29,3	18,2	100,0	674 671	4,6
Manica	12,5	26,4	32,3	28,8	100,0	416 778	5,4
Sofala	19,4	35,1	24,8	20,7	100,0	539 088	4,8
Inhambane	24,0	29,9	30,5	15,6	100,0	364 432	4,3
Gaza	21,3	30,6	23,3	24,8	100,0	306 011	4,8
Maputo	23,1	37,5	22,8	16,6	100,0	561 985	4,2
Maputo City	25,7	31,2	27,8	15,3	100,0	266 561	4,2

4.2. Education

The information on education in this section only covers the highest level of schooling completed both for the household member with the highest education (table 4.4), and for the household head (table 4.5). The level of schooling refers to formal, institutionalised education, which in the case of Mozambique is structured hierarchically: primary level (first and second grade or equivalent), secondary level (first and second cycle secondary education or equivalent) and higher level (bachelor's, master's and doctorate).

The results show that 45.2 per cent of households have primary education as the highest level completed, followed by secondary education with 27.1 per cent and none (23.6 per cent). It should also be noted that 3.2 per cent of households have a member with higher education as the highest level, see table 4.4.

More male than female headed households have education. This applies for all types of education. While 20.0 per cent of male headed households have no education, as many as 31.9 per cent of female headed households do not have any members with education.

In urban areas 14.1 per cent of households have no education, and in rural areas the share not having any education is twice as high. The proportion having secondary education is almost three times as high in urban areas compared to rural, and the proportion having higher education is five times higher in urban areas.

Nampula is the province with the highest share of households with no education. In almost half of the households (47.6 per cent), there are no members reporting to have education. In contrast, only one in then (9.4 per cent) of households lack education in Maputo province. Maputo City have the highest share of households with higher education, with one in six households (16.6 per cent) having higher education. In Nampula (60.9 per cent) and Zambézia (56.0 per cent) more than half of households have primary education as the highest level completed by a member. In contrast, Maputo (50.3 per cent), Maputo City (50.2 per cent), Sofala (45.3 per cent) and Manica (40.9 per cent) have a higher percentage of households with at least one member who have completed secondary school (table 4.4).

Table 4.4 Percentage distribution of households by highest level of education completed by a household member. Mozambique, 2022

Selected features	Level of education completed					
	None	Primary	Secondary	Higher	Total	N
National	23,6	45,2	27,1	3,2	100,0	6 833 550
Sex of household head						
Men	20,0	47,2	28,2	3,7	100,0	4 787 989
Woman	31,9	40,6	24,5	2,0	100,0	2 045 561
Area of residence						
Urban	14,1	29,6	46,9	6,9	100,0	2 217 727
Rural	28,2	52,7	17,6	1,4	100,0	4 615 822
Province						
Niassa	33,4	43,1	17,8	5,7	100,0	473 412
Cabo Delgado	47,6	37,5	13,7	1,2	100,0	577 991
Nampula	19,9	60,9	18,5	0,7	100,0	1 346 766
Zambezia	26,0	56,0	16,5	1,5	100,0	1 305 855
Tete	30,8	41,7	24,9	2,6	100,0	674 671
Manica	14,4	40,0	40,9	4,7	100,0	416 778
Sofala	17,1	29,4	45,3	8,2	100,0	539 088
Inhambane	15,4	48,0	30,1	6,6	100,0	364 432
Gaza	16,5	41,6	37,9	4,0	100,0	306 011
Maputo	9,4	30,1	50,3	10,1	100,0	561 985
Maputo City	18,6	14,7	50,2	16,6	100,0	266 561

There is a higher percentage of heads of households without a completed education (36.9 per cent) than the highest education within the household (23.6 per cent). There is 45.2 per cent of household heads reporting to have primary level as their highest education.

By gender, female-headed households have a higher percentage without a completed degree (54.0 per cent) than male-headed households (29.5 per cent). Almost half of male household heads have primary level (46.1 per cent), while the same applies for one in three female household heads (33.6 per cent).

The rural area shows a higher percentage of household heads without a completed degree (41.9 per cent), compared to 26.5 per cent in urban areas. Households in rural areas have the highest share of primary level education (45.5 per cent) compared to urban household heads (35.6 per cent). Secondary and higher education among household heads is much more common in urban than in rural areas, a similar situation observed for the highest education of any household member.

At provincial level, 62.4 per cent of household heads in Cabo Delgado, 44.9 per cent in Niassa and 47.6 per cent in Tete have not completed any level of education. The provinces of Nampula (56.3 per cent) and Zambézia (49.1 per cent) have a higher percentage of households with primary level education, a situation similar to that observed for the highest education among household members.

Table 4.5 Percentage distribution of households by highest level of education completed by the head. Mozambique, 2022

Selected features	Level of education completed					
	None	Primary	Secondary	Higher	Total	N
National	36,9	42,3	17,7	3,2	100,0	6 833 550
Sex of household head						
Men	29,5	46,1	20,7	3,7	100,0	4 787 989
Woman	54,0	33,6	10,4	2,0	100,0	2 045 561
Area of residence						
Urban	26,5	35,6	31,0	6,9	100,0	2 217 727
Rural	41,9	45,5	11,2	1,4	100,0	4 615 822
Province						
Niassa	44,9	34,8	16,1	4,3	100,0	473 412
Cabo Delgado	62,4	27,3	9,2	1,1	100,0	577 991
Nampula	30,1	56,3	13,1	0,5	100,0	1 346 766
Zambezia	38,1	49,1	11,7	1,1	100,0	1 305 855
Tete	47,6	35,0	14,8	2,5	100,0	674 671
Manica	30,7	37,9	26,9	4,4	100,0	416 778
Sofala	25,9	34,6	33,1	6,3	100,0	539 088
Inhambane	32,3	48,8	14,0	5,0	100,0	364 432
Gaza	40,5	39,9	16,5	3,2	100,0	306 011
Maputo	22,7	39,4	30,6	7,2	100,0	561 985
Maputo City	31,3	25,3	31,8	11,6	100,0	266 561

4.3. Main occupation and economic activity

The main occupation seen in relation to both the type of activity and ownership of the workplace. Table 4.6 shows that the majority of household members work as self-employed within agriculture and fishing (42.3 per cent) and only a small proportion as civil servants or in public companies (3.4 per cent).

More women are self-employed in agriculture and fishing (47.9 per cent), than is the case for men (36.4 per cent).

By area of residence, there are more self-employed workers in agriculture and fishing in rural areas (57.1 per cent) than in urban areas (15.4 per cent).

In all provinces, the percentage of self-employed workers in agriculture and fishing is high (between 24 and 64 per cent), except for Maputo Province (5.0 per cent) and Maputo City (0.5 per cent).

Table 4.6 Percentage distribution of the population aged 10 and over by main occupation. Mozambique, 2022

	Main occupation						
Selected features	Self-employed/ in agriculture and fishing	Self-employed/ in non-agricultural activities	Civil servant or public company employee	Private sector worker	Other[1]	Total	N
National	42,3	11,5	3,4	7,4	35,4	100,0	19 385 525
Sex							
Men	36,4	16,3	4,6	10,4	32,4	100,0	9 509 997
Women	47,9	6,8	2,3	4,5	38,4	100,0	9 875 528
Area of residence							
Urban	15,4	14,1	6,1	15,0	49,5	100,0	6 906 290
Rural	57,1	10,0	1,9	3,2	27,7	100,0	12 479 235
Province							
Niassa	63,3	3,4	3,8	1,9	27,6	100,0	1 256 165
Cabo Delgado	46,8	10,9	1,8	2,1	38,3	100,0	1 538 501
Nampula	64,1	8,1	1,3	2,1	24,3	100,0	3 415 949
Zambezia	49,0	21,9	1,7	2,2	25,2	100,0	3 474 505
Tete	55,8	9,6	2,5	2,7	29,4	100,0	1 931 371
Manica	24,0	8,3	5,6	3,5	58,5	100,0	1 413 003
Sofala	31,9	8,7	6,7	8,0	44,6	100,0	1 690 807
Inhambane	37,9	17,3	3,1	6,2	35,5	100,0	1 091 187
Gaza	32,5	17,6	4,9	7,3	37,8	100,0	988 198
Maputo	5,0	1,7	5,6	41,0	46,6	100,0	1 698 940
Maputo City	0,5	15,3	6,8	17,8	59,6	100,0	886 900

[1] Other refers to household members whose occupation does not generate income (pensioners, students, domestic workers...)

As far as the main activity of the economically active population is concerned, table 4.7 shows that the majority of household members are involved in agriculture, animal production, forestry, hunting and fishing (76.3 per cent).

By gender, the percentage in agriculture, animal production, forestry, hunting and fishing is 87.1 per cent for women and 65.8 per cent for men. There are more household members who farm in rural areas (88.7 per cent) than in urban areas (39.8 per cent).

In almost all provinces, the percentage of household members who practise agriculture, animal production, forestry, hunting and fishing as their main activity exceeds 60 per cent, with the exception of Maputo City (2.2 per cent) and Maputo Province (16.6 per cent).

Table 4.7 Percentage distribution of the population aged 10 and over in employment by main activity. Mozambique, 2022

	Main activity						
	Agriculture, animal production, forestry, hunting and fishing	Extractive and manufacturing industries	Wholesale and retail trade	Service activities	Public administration, defence and state security	Total	N
National	76,3	3,5	8,3	9,8	2,1	100,0	11 788 537
Sex							
Men	65,8	5,7	9,5	15,7	3,3	100,0	5 983 704
Women	87,1	1,3	7,0	3,8	0,8	100,0	5 804 833
Area of residence							
Urban	39,8	7,0	22,0	24,8	6,3	100,0	2 999 188
Rural	88,7	2,3	3,6	4,7	0,7	100,0	8 789 349
Province							
Niassa	91,0	0,5	2,3	4,5	1,6	100,0	880 918
Cabo Delgado	84,2	3,7	3,5	6,5	2,1	100,0	932 097
Nampula	88,3	2,4	3,4	5,0	0,9	100,0	2 503 327
Zambezia	85,6	1,9	8,3	3,9	0,2	100,0	2 540 476
Tete	89,0	2,5	2,5	4,7	1,3	100,0	1 330 836
Manica	61,9	5,9	10,4	17,1	4,8	100,0	558 925
Sofala	68,0	3,3	10,0	15,2	3,5	100,0	828 588
Inhambane	67,3	7,3	11,3	12,1	2,0	100,0	665 929
Gaza	62,9	2,5	11,6	19,7	3,2	100,0	567 747
Maputo	16,6	9,2	34,1	32,4	7,7	100,0	692 026
Maputo City	2,2	16,5	25,8	46,7	8,8	100,0	287 669

4.4. Housing

Housing is one of the basic needs of the population. Adequate housing is therefore an essential condition for everyone's well-being. Housing not only refers to the physical qualities of a construction, but also about access to drinking water supply and sanitation services (toilets, latrines, etc.).

At national level, the most households have a house occupied by only one household (95.0 per cent), table 4.8. In rural areas 97.0 per cent of households have a single house occupied by only one household, compared to (90.6 per cent) in urban areas.

Most provinces have more than 90 per cent of their houses occupied by a single household, with the exception of Gaza Province (67.7 per cent) and Maputo City (75.0 per cent). Gaza Province (32.3 per cent) and Maputo City (5.2 per cent) have a higher percentage of households who have a house occupied by several households compared to the other provinces.

Table 4.8 Percentage distribution of households by dwelling and occupancy. Mozambique, 2022

	Housing and Occupation								
	A single house occupied by one household	A house occupied by several households	Multi-storey building occupied by one household	Multi-storey building occupied by several households	A gated community with several households	A gated community with a household	Other	Total	N
National	95,0	2,4	0,1	0,4	1,9	0,2	0,1	100,0	6 833 550
Sex of household head									
Men	95,1	2,2	0,0	0,4	1,9	0,3	0,1	100,0	4 787 989
Women	94,7	2,8	0,1	0,3	1,8	0,1	0,1	100,0	2 045 561
Area of residence									
Urban	90,6	3,5	0,2	1,2	3,9	0,4	0,1	100,0	2 217 727
Rural	97,0	1,8	0,0	0,0	0,9	0,1	0,1	100,0	4 615 822
Province									
Niassa	98,5	0,3	0,0	0,0	0,2	0,2	0,8	100,0	473 412
Cabo Delgado	99,2	0,3	0,0	0,0	0,3	0,2	0,0	100,0	577 991
Nampula	99,9	0,1	0,0	0,0	0,0	0,0	0,0	100,0	1 346 766
Zambezia	99,0	1,0	0,0	0,0	0,0	0,0	0,1	100,0	1 305 855
Tete	92,6	2,0	0,0	0,0	4,1	1,1	0,2	100,0	674 671
Manica	96,2	1,6	0,0	0,0	1,8	0,3	0,0	100,0	416 778
Sofala	94,1	0,4	0,0	0,5	4,4	0,7	0,0	100,0	539 088
Inhambane	98,1	1,2	0,4	0,4	0,0	0,0	0,0	100,0	364 432
Gaza	67,7	32,3	0,0	0,0	0,0	0,0	0,0	100,0	306 011
Maputo	91,4	0,8	0,0	0,0	7,3	0,2	0,3	100,0	561 985
Maputo City	75,0	5,2	1,4	8,2	9,9	0,4	0,0	100,0	266 561

Figure 4.2 shows the distribution of households who share the same dwelling. At a national level, 58.0 per cent of households live in shared housing with less than 3 households, 31.4 per cent of households live in shared housing with 3 to 6 households and 10.5 per cent of households live in housing with more than 7 households.

Figure 4.1 Percentage distribution of households sharing housing, by number of households. Mozambique, 2022

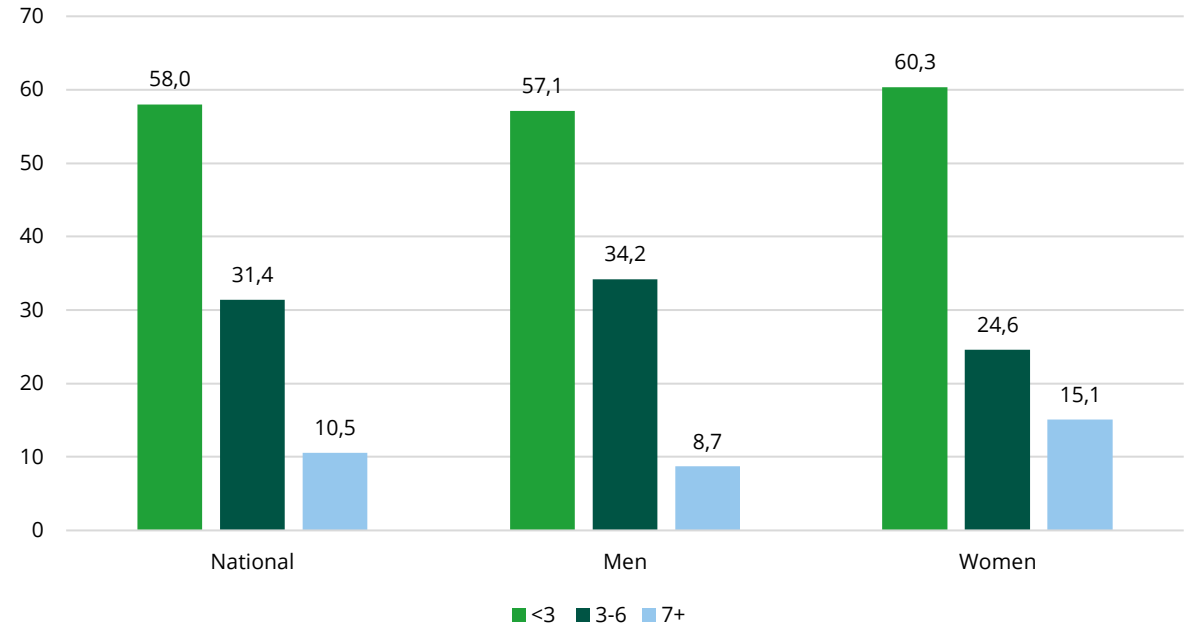


Table 4.9 shows the percentage distribution of households by ownership, highlighting that 89.1 per cent of households own their own home, with the rural area having a higher percentage (93.9 per cent) than the urban area (79.1 per cent). Maputo City and Sofala Province also has a higher percentage of households renting their own home than the other provinces, with 22.3 per cent in Maputo City and 18.6 per cent in Sofala Province.

Table 4.9 Percentage distribution of households by home ownership type. Mozambique, 2022

	Home ownership					
	Own	Rentedd	Transferred	Other	Total	N
National	89,1	6,1	4,7	0,1	100,0	6 833 550
Sex of household head						
Men	89,2	6,2	4,5	0,1	100,0	4 787 989
Women	88,7	6,0	5,2	0,1	100,0	2 045 561
Area of residence						
Urban	79,1	13,9	7,0	0,0	100,0	2 217 727
Rural	93,9	2,4	3,6	0,2	100,0	4 615 822
Province						
Niassa	96,4	2,2	1,4	0,0	100,0	473 412
Cabo Delgado	93,0	1,4	5,6	0,0	100,0	577 991
Nampula	91,8	2,0	6,0	0,3	100,0	1 346 766
Zambezia	92,9	4,4	2,4	0,3	100,0	1 305 855
Tete	90,8	6,4	2,8	0,0	100,0	674 671
Manica	88,0	9,6	2,4	0,0	100,0	416 778
Sofala	73,0	18,6	8,3	0,2	100,0	539 088
Inhambane	91,7	3,0	5,4	0,0	100,0	364 432
Gaza	90,6	2,6	6,8	0,0	100,0	306 011
Maputo	84,1	9,6	6,3	0,0	100,0	561 985
Maputo City	70,3	22,3	7,0	0,4	100,0	266 561

Table 4.10 shows the percentage distribution of households according to the material used to build the walls of the house. As for the variation in the type of material used in wall construction by area of residence, in the urban areas, houses whose walls were built with cement blocks stand out (76.9 per cent), while in the rural clay or clay bricks are just as common (35 per cent).

By province, in Niassa, Tete and Zambézia, houses built with clay or clay brick walls predominate, while in Cabo Delgado and Sofala there are more houses with wooden and zinc walls. In the provinces of Inhambane and Gaza, there are more bamboo/cane walls and, finally, Maputo City and Province have the most houses built with cement blocks.

Table 4.10 Percentage distribution of households by housing wall material. Mozambique, 2022

	Wall material						
	Wood and zinc	Blocks (brick and cement)	Clay or clay bricks	Bamboo/ reed	Others	Total	N
National	19,7	48,4	27,6	4,3	0,1	100,0	6 833 550
Sex of household head							
Men	19,7	48,2	28,8	3,1	0,1	100,0	4 787 989
Women	19,5	48,7	24,6	7,2	0,0	100,0	2 045 561
Area of residence							
Urban	9,5	76,9	11,3	2,3	0,0	100,0	2 217 727
Rural	24,5	34,7	35,4	5,3	0,2	100,0	4 615 822
Province							
Niassa	1,6	43,4	52,4	2,6	0,0	100,0	473 412
Cabo Delgado	80,3	13,7	5,2	0,8	0,0	100,0	577 991
Nampula	15,1	43,1	37,6	4,2	0,0	100,0	1 346 766
Zambezia	16,0	32,7	48,5	2,8	0,0	100,0	1 305 855
Tete	10,0	38,2	44,9	6,0	1,0	100,0	674 671
Manica	4,0	68,2	22,4	5,4	0,0	100,0	416 778
Sofala	40,3	49,3	9,5	0,9	0,0	100,0	539 088
Inhambane	29,9	53,0	0,5	16,5	0,0	100,0	364 432
Gaza	11,6	69,8	4,5	13,9	0,2	100,0	306 011
Maputo	1,0	96,6	0,0	2,4	0,0	100,0	561 985
Maputo City	2,5	96,2	0,7	0,6	0,0	100,0	266 561

The majority of household live in houses covered in grass, thatch or palm leaves (52.1 per cent) and zinc sheets (43.1 per cent). In terms of area of residence, in rural areas people live in houses covered in grass, thatch or palm leaves (67.6 per cent), followed by those made of zinc sheets (29.5 per cent), and in urban areas they live in houses covered in zinc sheets (71.3 per cent). More than 70.0 per cent of household in Niassa (75.1 per cent), Nampula (74.9 per cent), Zambézia (73.0 per cent) and Cabo Delgado (72.7 per cent) live in houses covered by grass, thatch or palm leaves, see table 4.11.

Table 4.11 Percentage distribution of households by main material of the roof of the house. Mozambique, 2022

	Main ceiling material								
	Concrete slab	Tiles	Lusalite sheets	Zinc sheets	Grass, thatch or palm leaves	Plastic	Others	Total	N
National	1,7	0,7	1,3	43,1	52,1	0,7	0,4	100,0	6 833 550
Sex of household head									
Men	1,7	0,7	1,2	42,8	52,3	0,9	0,4	100,0	4 787 989
Women	1,8	0,7	1,4	43,8	51,7	0,2	0,3	100,0	2 045 561
Area of residence						**0**			
Urban	4,1	0,5	2,8	71,3	19,8	0,7	0,8	100,0	2 217 727
Rural	0,6	0,9	0,5	29,5	67,6	0,7	0,1	100,0	4 615 822
Province									
Niassa	0,0	0,0	0,6	21,8	75,1	2,2	0,3	100,0	473 412
Cabo Delgado	0,2	0,0	0,0	25,6	72,7	1,5	0,0	100,0	577 991
Nampula	0,0	0,0	0,5	24,1	74,9	0,4	0,1	100,0	1 346 766
Zambezia	0,0	0,0	0,3	26,6	73,0	0,1	0,0	100,0	1 305 855
Tete	0,1	0,0	0,0	38,9	59,2	1,7	0,1	100,0	674 671
Manica	0,5	9,6	3,8	59,3	26,6	0,1	0,0	100,0	416 778
Sofala	2,3	0,0	8,2	45,1	38,3	2,1	4,0	100,0	539 088
Inhambane	2,8	0,3	0,2	74,5	22,2	0,0	0,0	100,0	364 432
Gaza	3,3	0,3	0,5	88,1	7,6	0,0	0,2	100,0	306 011
Maputo	8,6	0,3	0,7	90,5	0,0	0,0	0,0	100,0	561 985
Maputo City	12,6	2,6	2,4	82,4	0,0	0,0	0,0	100,0	266 561

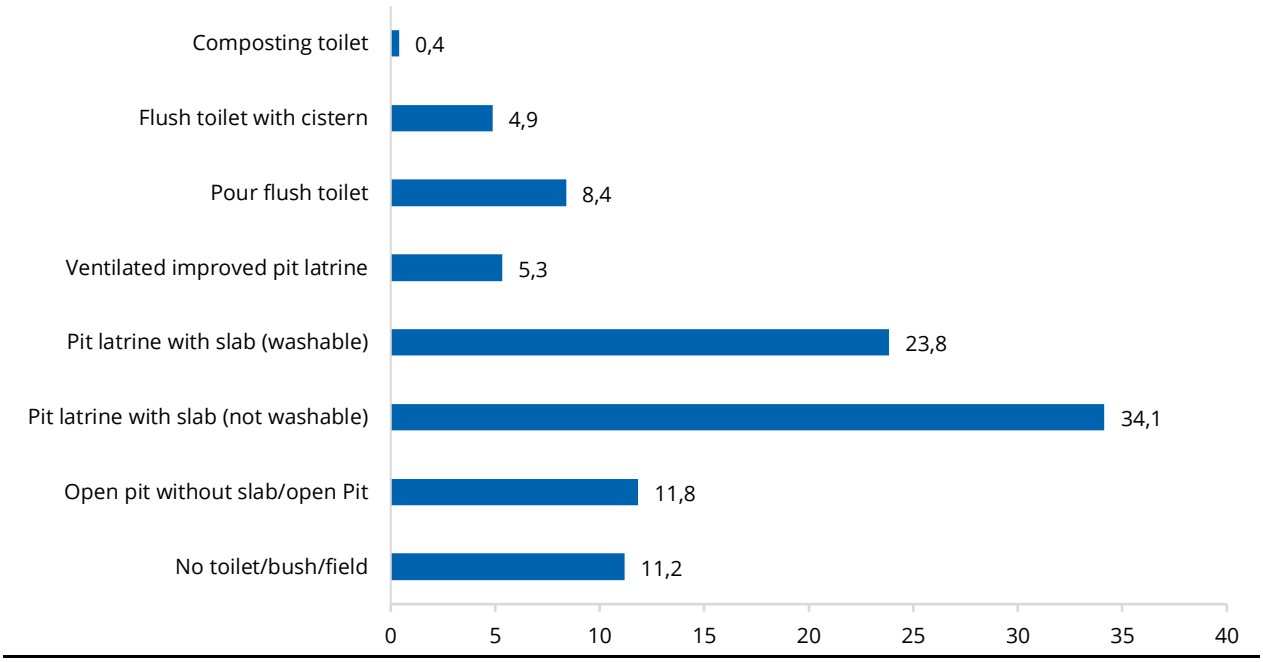
With regard to the material used for floors, the majority of households live in houses with natural floors (32.4 per cent), clay or hard-trodden soil (31.7 per cent) and cement (31.7 per cent). In urban areas, the majority live in houses with cement floors (58.6 per cent), while in rural areas the majority live in houses with floors made of clay or hard-trodden soil (39.3 per cent) and natural floors (40.7 per cent). It can be seen that the provinces of Niassa (69.5 per cent) and Tete (61.9 per cent) have the majority of their households living in houses with a floors made of clay or hard-trodden soil, while the provinces of Maputo (79.3 per cent), Gaza (76.2 per cent), Maputo City (73.9 per cent) and Inhambane (72.9 per cent) have the majority of households living in houses with cement floors, see table 4.12.

Table 4.12 Percentage distribution of households by main material of the house floor. Mozambique, 2022

	Main flooring material							
	Wood/ Parquet	Marble or Granite	Cement	Mosaic or terracotta tiles	Clay (hard-trodden soil)	Natural Floors	Total	N
National	0,5	0,1	31,7	3,6	31,7	32,4	100,0	6 833 550
Sex of household head								
Men	0,5	0,1	30,8	3,8	32,3	32,5	100,0	4 787 989
Women	0,6	0,2	34,0	3,1	30,2	32,0	100,0	2 045 561
Area of residence								
Urban	1,4	0,4	58,6	8,6	16,0	15,0	100,0	2 217 727
Rural	0,1	0,0	18,8	1,2	39,3	40,7	100,0	4 615 822
Province								
Niassa	0,0	0,0	15,6	2,3	69,5	12,6	100,0	473 412
Cabo Delgado	0,2	0,0	11,1	0,5	31,2	57,0	100,0	577 991
Nampula	0,0	0,0	14,3	0,9	43,0	41,9	100,0	1 346 766
Zambezia	0,0	0,2	9,3	0,6	21,3	68,7	100,0	1 305 855
Tete	0,0	0,0	28,1	1,0	61,9	9,0	100,0	674 671
Manica	0,0	0,0	42,6	3,5	29,6	24,3	100,0	416 778
Sofala	1,1	1,0	38,3	3,2	35,4	21,1	100,0	539 088
Inhambane	0,0	0,0	72,9	5,4	11,4	10,3	100,0	364 432
Gaza	0,0	0,0	76,2	6,1	8,2	9,5	100,0	306 011
Maputo	0,3	0,1	79,3	16,9	0,3	3,2	100,0	561 985
Maputo City	9,8	0,2	73,9	15,5	0,0	0,6	100,0	266 561

With regard to sanitation, Figure 4.2 shows that the majority of household use a covered pit latrine either non-flushable (34.1 per cent) and or flushable (23.8 per cent). Around 8.0 per cent of household use a flush toilet.

Figure 4.2 Percentage distribution of households by type of sanitation. Mozambique, 2022



5. Availability of electricity

This chapter looks at access to electricity used by households, the different sources of electricity and determines the main source of electricity in terms of supply and demand. Access levels are measured by seven dimensions: capacity, availability, reliability, quality, accessibility, legality, and health and safety.

The problems caused by electricity and solutions used to charge mobile phones are also identified.

Access and connection to electricity is measured by:

- Domestic electricity connection;
- Community access to an electricity grid;
- Access to electricity in the neighbouring village/community and
- Access to charge a mobile phone.
    4. 5.1 Access and connection to electricity

5.1. Access and connection to electricity

In Mozambique, 50.1 per cent of households have access to electricity, of which 32.0 per cent through the grid and 18.1 per cent through other sources. This means that 49.9 per cent of households have no connection to the grid or other electricity solutions, table 5.1.

Regarding the area of residence, the results show that 71.2 per cent of households in urban areas have access to electricity from the national grid, while in rural areas, the greatest access to electricity is from other sources (23.6 per cent). It should be noted that in rural areas the majority of households live without a connection to the grid, without other electricity solutions (63.3 per cent).

In terms of geographical distribution, Maputo City and Maputo Province have the highest percentage of households with access to electricity through the national/local grid, with 96.5 per cent and 69.8 per cent respectively.

The following provinces have a high percentage of households without access to any source of electricity: Cabo Delgado (73.4 per cent), Tete (69.8 per cent), Zambézia (59.1 per cent) and Niassa (57.6 per cent), see table 5.1.

Table 5.1 Percentage distribution of households by type of electricity connection. Mozambique, 2022

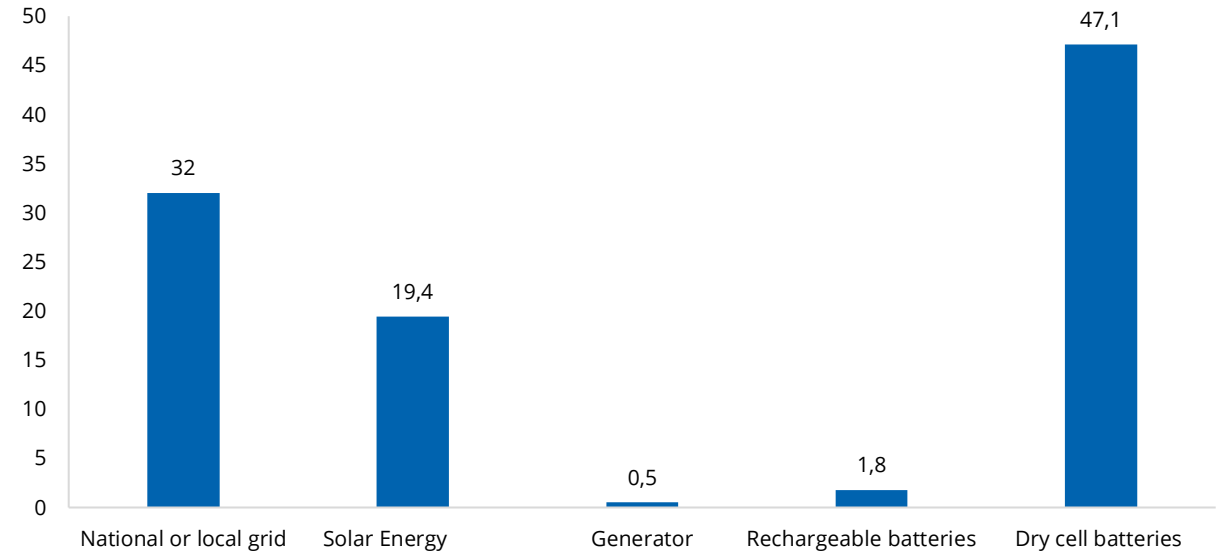
	Connecting to electricity in the household				
	National or local network	Other off-grid solutions	No connection	Total	N
National	32,0	18,1	49,9	100,0	6 833 550
Sex of household head					
Man	31,2	21,3	47,5	100,0	4 787 989
Woman	33,7	10,9	55,5	100,0	2 045 561
Area of residence					
Urban	71,2	6,8	22,0	100,0	2 218 071
Rural	13,1	23,6	63,3	100,0	4 615 479
Province					
Niassa	31,1	11,3	57,6	100,0	473 412
Cabo Delgado	21,3	5,4	73,4	100,0	577 991
Nampula	20,1	19,2	60,8	100,0	1 346 766
Zambezia	16,7	24,2	59,1	100,0	1 305 855
Tete	15,3	14,9	69,8	100,0	674 671
Manica	39,2	29,3	31,5	100,0	416 778
Sofala	43,0	10,0	47,0	100,0	539 088
Inhambane	27,1	48,1	24,8	100,0	364 432
Gaza	58,3	11,6	30,1	100,0	306 011
Maputo	69,8	16,4	13,8	100,0	561 985
Maputo City	96,5	0,9	2,5	100,0	266 561

With regard to the electrical grid, 32.0 per cent of households have access to a grid. According to the gender of the head of the household, there are no major differences between men and women in terms of access to grid, with 31.2 per cent and 33.7 per cent respectively.

In urban areas, 71.0 per cent of households have access to an electrical grid and 13.2 per cent of households in rural areas have grid access.

The energy sources most used by households in Mozambique are dry cell batteries (47.1 per cent), the national or local electricity grid (32.0 per cent) and solar energy (19.4 per cent). Less than one per cent of households use an electric generator as a source of electricity, Figure 5.1.

Figure 5.1 Percentage of households with access to electricity by type of source. Mozambique, 2022



The majority of households using solar energy live in rural areas (85.3 per cent), rechargeable batteries (74.9 per cent) and dry cell batteries (71.4 per cent). Most households in urban areas use electricity from the national or local grid (72.2 per cent), see Figure 5.2.

Figure 5.2 Percentage distribution of households with access to electricity by type of source, according to area of residence. Mozambique, 2022

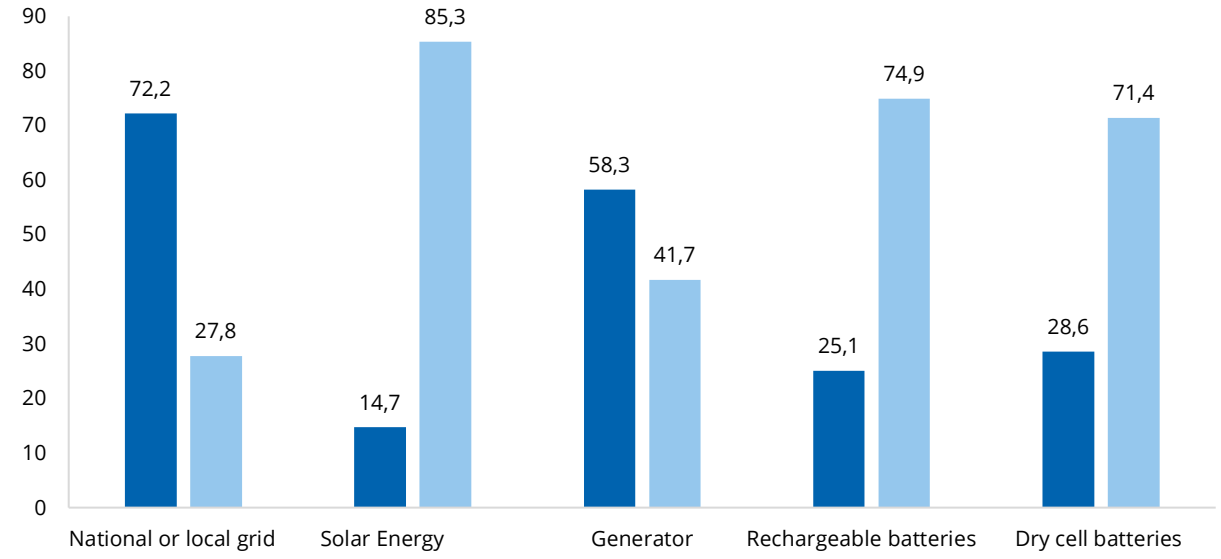


Table 5.3 shows the percentage distribution of households by where they charge their mobile phone, showing that 72.7 per cent of households charge their mobile phone in their own home. According to gender, 74.6 per cent of male-headed households charge their mobile phone at home, compared to 67.8 per cent of female-headed households.

Almost all households in Maputo City (95.9 per cent) charge their mobile phones at home, while a significant proportion of households in the provinces of Cabo Delgado (46.0 per cent), Nampula (33.4 per cent) and Tete (32.8 per cent) charge their mobile phones outside their own homes.

Table 5.2 Percentage distribution of households with a mobile phone by charging location. Mozambique, 2022

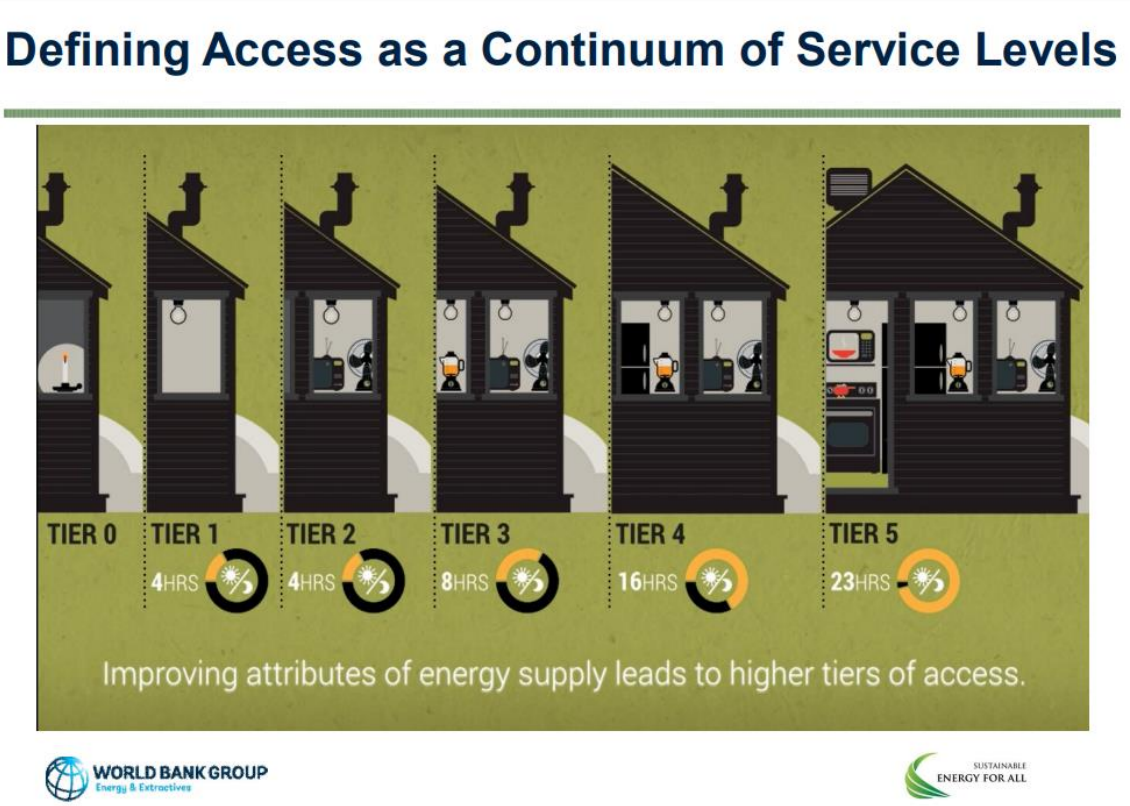
	Mobile phone charging location				
	Inside the house	Away from home	Don't know	Total	N
Total	72,7	27,1	0,2	100,0	4 558 291
Sex of household head					
Man	74,6	25,3	0,2	100,0	3 321 959
Woman	67,8	32,1	0,1	100,0	1 236 332
Area of residence					
Urban	83,4	16,5	0,1	100,0	1 933 058
Rural	64,8	35,0	0,2	100,0	2 625 233
Provinces					
Niassa	69,5	30,0	0,5	100,0	297 354
Cabo Delgado	53,8	46,0	0,2	100,0	316 275
Nampula	66,6	33,4	0,0	100,0	615 593
Zambezia	72,8	26,7	0,5	100,0	700 164
Tete	67,2	32,8	0,0	100,0	412 267
Manica	77,5	22,5	0,0	100,0	363 817
Sofala	68,7	31,3	0,0	100,0	423 141
Inhambane	72,7	27,3	0,0	100,0	331 837
Gaza	74,7	25,3	0,0	100,0	284 021
Maputo	84,0	16,0	0,0	100,0	548 826
Maputo City	95,9	3,6	0,5	100,0	264 997

5.2. Level of access to electricity

5.2.1 Multi-dimensional framework for measuring access to electricity

The multidimensional approach to understanding access to electricity was elaborated in a Multi-Level Framework (MTF), which classifies access on a scale of 0 to 5, with 5 being the highest level. The MTF considers two topics:

- Electricity
- Cooking solutions



Levels of energy access (Source: World Bank Group)

5.2.2 Levels of access to electricity

Most household in Mozambique consume little electricity. The percentage distribution of the summary of the dimensions of access to electricity indicates that 56.9 per cent of the population is at level 0, i.e. they consume less than 1 kWh of electricity per day (see table 5.4).

The households who have some electricity solution are concentrated in levels 2 and 3, with 14.4 per cent and 20.8 per cent respectively. It should be noted that 3.0 per cent of households have access to full-time electricity, without significant cuts, stable and safe, and for all household appliances (level 5). The majority of female-headed households (59.6 per cent) are at level 0, compared to 55.7 per cent of male-headed households.

In rural areas, 72.1 per cent of households are at level 0, while in urban areas they are concentrated at level 3 (40.9 per cent). According to province, Tete has the highest percentage of household at level 0 (78.0 per cent) and Inhambane has the highest percentage at level 5 (9.5 per cent) Table 5.3.

Table 5.3 Percentage distribution of households by level of access to electricity. Mozambique, 2022

	Level of access to electricity							
	0	1	2	3	4	5	Total	N
National	56,9	0,4	14,4	20,8	4,5	3,0	100,0	6 833 550
Sex of household head								
Man	55,7	0,3	14,4	21,3	5,1	3,2	100,0	4 787 989
Woman	59,6	0,5	14,5	19,7	3,0	2,6	100,0	2 045 561
Area of residence								
Urban	25,1	0,9	22,7	40,9	7,4	3,1	100,0	2 218 320
Rural	72,1	0,1	10,5	11,2	3,1	3,0	100,0	4 615 230
Province								
Niassa	65,6	0,0	16,4	13,8	3,1	1,1	100,0	473 412
Cabo Delgado	76,0	0,0	12,0	7,7	3,3	1,0	100,0	577 991
Nampula	67,0	0,4	14,8	14,9	1,8	1,1	100,0	1 346 766
Zambezia	67,8	0,2	13,9	12,2	2,5	3,4	100,0	1 305 855
Tete	78,0	0,0	7,0	9,0	4,7	1,4	100,0	674 671
Manica	41,8	0,0	13,4	36,9	2,6	5,4	100,0	416 778
Sofala	49,7	1,0	10,3	28,0	9,2	1,8	100,0	539 088
Inhambane	43,4	0,2	14,1	26,1	6,7	9,5	100,0	364 432
Gaza	33,9	0,7	23,7	31,5	5,2	5,0	100,0	306 011
Maputo	20,2	1,3	15,2	43,9	12,4	6,9	100,0	561 985
Maputo City	2,0	0,6	34,2	55,5	5,0	2,7	100,0	266 561

5.3. Dimensions of access to electricity

The seven dimensions for access to electricity in households are as follows:

1. Capacity;
2. Availability;
3. Reliability;
4. Quality;
5. Accessibility;
6. Legality;
7. Health and safety.

Dimensions 3-6 are only relevant to the electricity grid (national or local) and dimension 7 is relevant to the electricity grid and electricity generator (Table 5.4).

Table 5.4 Multi-Tier Framework for measuring access to electricity*

ATTRIBUTES		TIER 0	TIER 1	TIER 2	TIER 3	TIER 4	TIER 5
Capacity	Power capacity ratings (W or daily Wh)	Less than 3 W	At least 3 W	At least 50 W	At least 200 W	At least 800 W	At least 2 kW
		Less than 12Wh	At least 12 Wh	At least 200 Wh	At least 1 kWh	At least 3.4 kWh	At least 8.2 kWh
	Services		Lighting of 1,000 lmhr per day	Electrical lighting, air circulation, television, and phone charging are possible			
Availability	Daily Availability	Less than 4 hours	At least 4 hours		At least 8 hours	At least 16 hours	At least 23 hours
	Evening Availability	Less than 1 hour	At least 1 hour	At least 2 hours	At least 3 hours	At least 4 hours	
Reliability		Not applicable	Not applicable	More than 14 disruptions per week		At most 14 disruptions per week or at most 3 disruptions per week with total duration of more than 2 hours"	At most 3 disruptions per week with total duration of less than 2 hours
Quality		Not applicable	Not applicable	Household experiences voltage problems that damage appliances		Voltage problems do not affect the use of desired appliances	
Affordability		Not applicable for overall Tiers, but as a separate measure	Not applicable for overall Tiers, but as a separate measure	Cost of a standard consumption package of 365 kWh per year is more than 5 of household income	Cost of a standard consumption package of 365 kWh per year is less than 5 of household income		
Legality		Not applicable	Not applicable	No bill payments made for the use of electricity		Bill is paid to the utility, prepaid card seller, or authorized representative	
Health & Safety		Not applicable	Not applicable	Serious or fatal accidents due to electricity connection		Absence of past accidents	

* In this and all other Tier charts, the Tiers are listed in 6 groups from Tier 0 to Tier 5.

5.3.1 Capacity

This dimension aims to classify households into levels of electricity access capacity in watts or watt-hours used daily by the households, which is the standard measure for households connected to the national/local electricity grid. Thus, all households connected to the national/local grid, whose capacity is 220 V, are at level 5 (at least 2 kW). In Mozambique, 56.9 per cent of households are at level 0 in the capacity dimension. This means that they use less than 3 W per day or less than 12 Wh, or have no access to electricity. At national level 34.0 per cent of households have access to grid electricity with a daily consumption capacity of 8.2 kWh, level 5.

In the following provinces, a large share of the households is at the lowest capacity level. Households in Tete (78.0 per cent), Cabo Delgado (76.0 per cent), Zambézia (67.8 per cent), Nampula (67.0 per cent) and Niassa (65.6 per cent) use less than 3 W per day or less than 12 Wh and are hence classified as belonging in tier 0. In contrast, Maputo City (97.8 per cent) and the provinces of Maputo (72.6 per cent) and Gaza (59.1 per cent) have the highest proportion of households using at least 2 kW per day or at least 8.2 kWh, defining them in tier 5, with the highest level of capacity, see table 5.5.

Table 5.5 Percentage distribution of households by level of capacity of main source of electricity. Mozambique, 2022

	Energy capacity level							
	0	1	2	3	4	5	Total	N
National	56,9	0,0	3,2	4,4	1,6	34,0	100,0	6 833 550
Sex of household head								
Man	55,7	0,0	3,9	5,0	1,9	33,5	100,0	4 787 989
Woman	59,6	0,0	1,6	3,0	0,9	35,0	100,0	2 045 561
Area of residence								
Urban	25,0	0,0	0,5	1,4	1,0	72,1	100,0	2 219 705
Rural	72,2	0,0	4,5	5,9	1,8	15,6	100,0	4 613 845
Province								
Niassa	65,6	0,0	1,4	1,4	0,4	31,3	100,0	473 412
Cabo Delgado	76,0	0,0	0,9	0,9	0,3	21,9	100,0	577 991
Nampula	67,0	0,0	5,1	6,3	0,7	20,8	100,0	1 346 766
Zambezia	67,8	0,1	6,4	4,5	1,5	19,7	100,0	1 305 855
Tete	78,0	0,0	1,3	3,7	1,4	15,6	100,0	674 671
Manica	41,8	0,0	4,1	9,5	1,0	43,6	100,0	416 778
Sofala	49,7	0,0	0,0	3,1	2,7	44,5	100,0	539 088
Inhambane	43,4	0,0	4,8	11,0	4,6	36,2	100,0	364 432
Gaza	33,9	0,0	1,8	3,9	1,4	59,1	100,0	306 011
Maputo	20,2	0,0	0,8	2,1	4,3	72,6	100,0	561 985
Maputo City	2,0	0,0	0,2	0,0	0,0	97,8	100,0	266 561

5.3.2 Availability

This dimension deals with the duration of the period electricity is available in the household during the day and night (levels 0 to 5). Of the households that have access to the electricity grid, 93.6 per cent have electricity available for at least 23 hours (level 5). There is no variation by gender of the head of the households, area of residence or province. In this dimension, no households were found at tier 0 or 4 (table 5.6).

Table 5.6 Percentage distribution of households by size of electricity availability. Mozambique, 2022

	Level of electricity availability					
	1	2	3	5	Total	N
National	1,2	2,3	2,9	93,6	100,0	2 170 812
Sex of household head						
Man	1,0	2,3	2,7	94,0	100,0	1 487 175
Woman	1,4	2,5	3,5	92,6	100,0	683 638
Area of residence						
Urban	1,3	2,5	3,0	93,3	100,0	1 575 961
Rural	0,9	1,9	2,8	94,4	100,0	594 852
Province						
Niassa	0,0	1,6	3,9	94,5	100,0	145 645
Cabo Delgado	0,0	0,8	4,0	95,2	100,0	121 865
Nampula	2,2	1,1	1,1	95,7	100,0	270 285
Zambezia	0,9	0,5	0,5	98,0	100,0	218 454
Tete	0,0	2,1	2,6	95,3	100,0	101 752
Manica	0,0	2,1	5,0	92,9	100,0	162 626
Sofala	2,2	3,9	0,4	93,4	100,0	231 639
Inhambane	0,7	0,0	0,8	98,5	100,0	98 692
Gaza	1,2	1,5	1,2	96,0	100,0	178 148
Maputo	1,9	6,3	8,6	83,1	100,0	384 420
Maputo City	0,6	0,8	0,4	98,1	100,0	257 288

5.3.3 Reliability

This dimension addresses interruptions to the electricity supply in households per week. It only applies to tier 2 to 5, as it is only relevant for households with a certain level of capacity and availability of electricity.

According to the reliability of the electricity supplied, 65.9 per cent of households with access to grid electricity have more than fourteen power cuts a week (level 2 and 3), followed by 27.2 per cent with three to fourteen cuts a week or more than two hours a day (level 4). Only 6.9 per cent of households have recorded less than two hours of cuts or at least three cuts a week. The situation is similar both for female and male headed households, and both in urban and rural areas (table 5.8).

Regarding the provinces, more than 80 per cent of the households in Manica, Inhambane and Maputo City separately register more than 14 power cuts per week (level 2-3).

Table 5.7 Percentage distribution of households by level of electricity reliability. Mozambique, 2022

	Electricity reliability level				
	2-3	4	5	Total	N
National	65,9	27,2	6,9	100,0	2 170 812
Sex of household head					
Man	65,1	28,3	6,6	100,0	1 487 175
Woman	67,6	24,9	7,5	100,0	683 638
Area of residence					
Urban	66,8	26,0	7,3	100,0	1 575 961
Rural	63,6	30,5	5,9	100,0	594 852
Province					
Niassa	58,8	36,3	4,9	100,0	145 645
Cabo Delgado	54,3	43,8	1,8	100,0	121 865
Nampula	68,2	22,8	8,9	100,0	270 285
Zambezia	55,7	36,2	8,1	100,0	218 454
Tete	50,3	41,0	8,8	100,0	101 752
Manica	84,8	10,9	4,3	100,0	162 626
Sofala	67,2	30,3	2,4	100,0	231 639
Inhambane	82,5	14,3	3,2	100,0	98 692
Gaza	63,1	23,5	13,4	100,0	178 148
Maputo	56,4	33,0	10,6	100,0	384 420
Maputo City	84,1	12,2	3,7	100,0	257 288

5.3.4 Quality

This dimension deals with the problems faced by households in the electrical voltage or current, which cause voltage problems capable of damaging devices or household appliances (levels 2-3 experience problems and 4-5 does not).

Table 5.8 shows the percentage distribution of households by power quality dimension. Almost four out of five, that is 78.6 per cent, have never experienced power fluctuations that damaged their appliances (level 4-5).

In terms of provinces, Manica (92.5 per cent), Niassa (90.0 per cent) and Tete (89.6 per cent) stand out, with a large proportion of households that do not experience damage to appliances due to voltage fluctuations, hence classified at level 4-5.

Table 5.8 Percentage distribution of households by level of electricity quality. Mozambique, 2022

	Power quality level			
	2-3	4-5	Total	N
National	21,4	78,6	100,0	2 169 821
Sex of household head				
Man	22,5	77,5	100,0	1 486 183
Woman	19,1	80,9	100,0	683 638
Area of residence				
Urban	24,3	75,7	100,0	1 573 808
Rural	13,6	86,4	100,0	596 012
Province				
Niassa	10,0	90,0	100,0	145 645
Cabo Delgado	16,0	84,0	100,0	120 873
Nampula	17,9	82,1	100,0	270 285
Zambezia	22,0	78,0	100,0	218 454
Tete	10,4	89,6	100,0	101 752
Manica	7,5	92,5	100,0	162 626
Sofala	27,4	72,6	100,0	231 639
Inhambane	16,4	83,6	100,0	98 692
Gaza	15,6	84,4	100,0	178 148
Maputo	26,5	73,5	100,0	384 420
Maputo City	39,6	60,4	100,0	257 288

5.3.5 Affordability

This dimension refers to the cost of a standard electricity consumption package of 365 KWh per year in households (levels 2 and 3-5).

37.0 per cent of household spend more than 5 per cent of their annual income on electricity (level 2) and the remaining 63.0 per cent spend less than 5 per cent of their annual income on electricity (level 5).

The majority of both male-headed households (65.1 per cent) and female-headed households (58.5 per cent) spend less than 5 per cent of their annual income on electricity (level 3-5).

In the provinces Niassa, Cabo Delgado, Nampula and Zambézia the majority of households spend more than 5 per cent of their annual income on electricity (level 2), while households in the rest of the provinces spend less than 5 per cent of their annual income on electricity (level 3-5), see table 5.9.

The majority spend less than 5 per cent of their annual income on electricity (level 3-5). The higher the level of education of the head of the household, the proportion that spend more than 5 per cent on electricity (level 2) tends to decrease, table 5.9.

Table 5.9 Percentage distribution of households by level of electricity accessibility. Mozambique, 2022

	Level of accessibility			
	2	3-5	Total	N
National	37,0	63,0	100,0	1 974 376
Sex of household head				
Man	34,9	65,1	100,0	1 360 144
Woman	41,5	58,5	100,0	614 232
Area of residence				
Urban	32,1	67,9	100,0	1 436 761
Rural	50,1	49,9	100,0	537 616
Province				
Niassa	57,9	42,1	100,0	122 577
Cabo Delgado	56,6	43,4	100,0	113 273
Nampula	52,4	47,6	100,0	249 496
Zambezia	53,6	46,4	100,0	183 108
Tete	38,0	62,0	100,0	97 368
Manica	34,8	65,2	100,0	103 917
Sofala	21,3	78,7	100,0	227 907
Inhambane	34,9	65,1	100,0	97 139
Gaza	37,3	62,7	100,0	174 122
Maputo	15,3	84,7	100,0	367 689
Maputo City	37,4	62,6	100,0	237 781
Highest level of education completed				
None	51,0	49,0	100,0	95 752
Primary	43,1	56,9	100,0	677 029
Basic	30,9	69,1	100,0	290 798
Medium	24,1	75,9	100,0	383 743
Higher	19,6	80,4	100,0	179 730

5.3.6 Legality

This dimension is intended to measure the proportions of households who have a connection to the electricity grid and who pay the concessionaire, either to the seller or to the representative of the electricity supply company. Households who pay for their electricity consumption or can at least explain the formal reason why they don't pay are considered legal (levels 2-3 and 4-5).

The results in Table 5.10 show that almost all households with access to energy pay the concessionaire, the prepaid vendor or the authorised representative for their electricity consumption (96.7 per cent). In terms of provinces, Zambézia (15.6 per cent) and Niassa (13.9 per cent) have the highest number of households who do not pay for their consumption.

Table 5.10 Percentage distribution of households by level of electricity legality. Mozambique, 2022

	Level of electricity legality			
	2-3	4-5	Total	N
National	3,3	96,7	100,0	2 170 812
Sex of household head				
Man	3,0	97,0	100,0	1 487 175
Woman	4,1	95,9	100,0	683 638
Area of residence				
Urban	4,3	95,7	100,0	1 573 808
Rural	0,6	99,4	100,0	597 004
Province				
Niassa	13,9	86,1	100,0	145 645
Cabo Delgado	3,6	96,4	100,0	121 865
Nampula	1,1	98,9	100,0	270 285
Zambezia	15,6	84,4	100,0	218 454
Tete	1,3	98,7	100,0	101 752
Manica	0,0	100,0	100,0	162 626
Sofala	0,4	99,6	100,0	231 639
Inhambane	0,0	100,0	100,0	98 692
Gaza	1,7	98,3	100,0	178 148
Maputo	0,9	99,1	100,0	384 420
Maputo City	0,5	99,5	100,0	257 288

5.3.7 Health and safety

This dimension is intended to gauge the level of safety of electrical installations, connections, maintenance and repairs. Work is considered safe when carried out by competent people (level 4-5), otherwise it can lead to serious or fatal accidents (level 2-3).

Households connected to the electricity grid have a high level of safety. Almost all households (99.0 per cent) have never suffered an accident (level 4-5), also by sex of the head of the household, area of residence and at provincial level. However, 2.6 per cent of Cabo Delgado households and 2.2 per cent of Gaza households have suffered serious or fatal injuries as a result of unsafe electrical interventions, table 5.11.

Table 5.11 Percentage distribution of households by level of access to health and safety. Mozambique, 2022

	Health and safety level			
	2-3	4-5	Total	N
National	1,0	99,0	100,0	2 172 749
Sex of household head				
Man	0,7	99,3	100,0	1 489 111
Woman	1,6	98,4	100,0	683 638
Area of residence				
Urban	1.0	99,0	100,0	1 573 808
Rural	1,1	98,9	100,0	598 940
Province				
Niassa	0,0	100,0	100,0	145 645
Cabo Delgado	2,6	97,4	100,0	120 873
Nampula	0,9	99,1	100,0	270 285
Zambezia	1.0	99.0	100,0	218 454
Tete	1,8	98,2	100,0	104 680
Manica	0,0	100,0	100,0	162 626
Sofala	1,9	98,1	100,0	231 639
Inhambane	0.0	100.0	100,0	98 692
Gaza	2,2	97,8	100,0	178 148
Maputo	0,7	99,3	100,0	384 420
Maputo City	0,4	99,6	100,0	257 288

5.3.8 Summary of dimensions

In Mozambique, the dimensions of health/safety (99.0 per cent), legality (96.7 per cent) and availability (93.6 per cent) have high levels of access (level 5). However, a significant proportion of households have experienced cuts and interruptions in the supply of electricity, dimension reliability (65.9 per cent). It should also be noted that 56.9 per cent of households have level 0 capacity (no access), see table 5.12.

Table 5.12 Percentage distribution of households by general level of access to electricity according the dimensions described by the tiers. Mozambique, 2022

Dimensions	Levels							
	0	1	2	3	4	5	Total	N
Capacity	56,9	0,0	3,2	4,4	1,6	34,0	100,0	6 833 550
Availability		1,2	2,3	2,9		93,6	100,0	2 170 812
Reliability				65,9	27,2	6,9	100,0	2 170 812
Quality				21,4		78,6	100,0	2 169 821
Accessibility			37,0			63,0	100,0	1 974 376
Legality			3,3			96,7	100,0	2 170 812
Health/safety				1,0		99,0	100,0	2 172 749

5.4. Barriers to accessing electricity

A significant proportion of households without a grid connection expect to be connected to the electricity grid in the future4 (3.6 per cent). Male-headed households have higher expectations (46.3 per cent) than female-headed households (37.1 per cent). In terms of area of residence, in urban areas the majority of households expect to be connected to the electricity grid (57.2 per cent), while in rural areas less than half (41.4 per cent). In the provinces of Maputo (77.5 per cent) and Gaza (71.6 per cent) there are more households who expect to be connected to the electricity grid. The higher the level of education of the head of the household, the greater the expectation of obtaining a connection to the electricity grid (table 5.13).

Table 5.13 Percentage distribution of households without electricity and expecting to be connected to the electricity grid. Mozambique, 2022

	Expecting to get connected to the electricity grid in the future				
	Yes	No	Don't know	Total	N
National	43,6	15,3	41,1	100,0	4 650 168
Sex of household head					
Man	46,3	14,9	38,8	100,0	3 293 097
Woman	37,1	16,4	46,5	100,0	1 357 071
Area of residence					
Urban	57,2	7,7	35,1	100,0	642 222
Rural	41,4	16,5	42,0	100,0	4 007 946
Province					
Niassa	54,9	15,1	30,0	100,0	326 205
Cabo Delgado	39,9	8,9	51,1	100,0	455 134
Nampula	47,5	7,5	44,9	100,0	1 076 481
Zambezia	27,9	20,1	52,0	100,0	1 087 401
Tete	38,6	32,3	29,1	100,0	571 610
Manica	27,3	23,7	48,9	100,0	253 470
Sofala	58,0	5,4	36,6	100,0	307 449
Inhambane	59,0	16,7	24,3	100,0	265 740
Gaza	71,6	11,0	17,5	100,0	127 563
Maputo	77,5	0,9	21,5	100,0	169 840
Maputo City	48,1	15,1	36,8	100,0	9 273
Level of education of the Head of Household					
None	36,5	12,0	51,5	100,0	544 285
Primary	48,0	13,5	38,5	100,0	2 153 149
Basic	59,6	12,8	27,5	100,0	290 968
Medium	62,7	12,6	24,7	100,0	167 529
Higher	82,8	0,0	17,2	100,0	9 908

The households who expect to be connected to the electricity grid indicate that the main reason for their household not already being connected is the unavailability of the grid in the community (50.6 per cent) and the high cost of the initial connection (18.2 per cent). There is also a significant number of households reporting the network to be too far from the household or not available (17.6 per cent). The distance to the grid can both make connection impossible, or drastically increase the cost of connecting.

The reason for not being connected does not differ significantly by sex and level of education of the head of the household. However, by area of residence, those in urban areas point more to the cost of the initial connection (30.6 per cent, compared to 15.5 per cent in rural areas), while in rural areas they point more to the unavailability of the network in the community (56.6 per cent, compared to 23.2 in urban areas), as reasons for not having access. In all the provinces, the unavailability of the grid in the community is the main reason why households are not connected to the electricity grid, with the exception of Maputo City where the households point to the high cost of the monthly fee

(13.7 per cent) and the initial connection fee (12.5 per cent), among other unspecified reasons (53.2 per cent), table 5.14.

Table 5.144 Percentage distribution of households expecting to be connected to the electricity grid and the main reason for their residence not being connected to the electricity grid. Mozambique, 2022

	Main reason why your home is not connected to the electricity grid												
	Electricity network not available in the community	The network is too far from the household / not available	Initial connection costs too high	Monthly fee is too high	Satisfied with current energy solution	When renting, the landlord's decision	Unreliable service	Adminis-trative procedure is very complicated	Submitting documents and waiting for connection	Company refused to connect to the house-hold	Others	Total	N
National	50,6	17,6	18,2	0,9	0,1	0,9	0,0	2,0	2,4	0,1	7,3	100,0	2 028 128
Sex of household head													
Man	51,9	17,1	18,1	1,0	0,1	0,9	0,0	1,9	2,6	0,2	6,3	100,0	1 524 718
Woman	46,5	19,1	18,6	0,5	0,0	0,8	0,0	2,3	2,0	0,0	10,3	100,0	503 410
Area of residence													
Urban	23,2	18,0	30,6	0,9	0,0	2,0	0,0	3,8	4,9	0,0	16,7	100,0	367 064
Rural	56,6	17,5	15,5	0,9	0,1	0,6	0,0	1,6	1,9	0,1	5,2	100,0	1 661 064
Province													
Niassa	45,0	19,4	18,4	0,4	0,0	0,9	0,0	2,1	1,4	0,0	12,4	100,0	179 046
Cabo Delgado	48,9	1,3	17,6	2,7	0,0	1,8	0,0	4,0	2,1	0,0	21,6	100,0	181 707
Nampula	38,7	19,8	28,9	0,8	0,0	0,3	0,0	2,3	1,7	0,0	7,4	100,0	511 646
Zambezia	82,5	2,8	9,1	0,6	0,0	0,0	0,0	0,0	2,0	0,0	3,0	100,0	303 311
Tete	53,4	32,1	8,7	0,5	0,5	0,5	0,0	1,9	0,3	0,0	2,2	100,0	220 502
Manica	33,5	22,8	24,2	0,0	0,0	5,8	0,0	6,5	4,7	0,0	2,5	100,0	69 270
Sofala	40,5	18,9	23,3	1,7	0,0	2,4	0,0	2,3	2,2	0,0	8,7	100,0	178 435
Inhambane	57,5	28,7	6,0	0,0	0,0	0,0	0,0	0,6	5,1	0,0	2,0	100,0	156 742
Gaza	47,9	26,4	18,1	0,6	0,0	0,0	0,0	2,5	1,7	0,8	2,0	100,0	91 298
Maputo	46,2	15,2	18,7	0,4	0,0	1,9	0,0	1,2	7,8	1,2	7,5	100,0	131 710
Maputo City	0,0	0,0	12,5	13,7	0,0	0,0	0,0	9,5	11,1	0,0	53,2	100,0	4 460
Highest level of education completed													
None	60,7	10,2	12,1	0,7	0,5	0,3	0,0	1,8	0,8	0,0	12,8	100,0	198 679
Primary	51,8	19,3	18,0	0,9	0,0	0,7	0,0	1,7	2,3	0,0	5,3	100,0	1 033 555
Basic	45,8	14,4	21,0	0,0	0,0	3,4	0,0	1,0	3,7	0,9	9,7	100,0	173 543
Medium	46,4	17,9	11,9	5,8	0,0	0,9	0,0	3,0	5,4	0,0	8,8	100,0	105 072
Higher	22,0	0,0	41,2	0,0	0,0	9,3	0,0	0,0	27,6	0,0	0,0	100,0	8 201

The majority of households who use solar home systems are satisfied with this energy source (61.3 per cent). According to the sex of the head of the household, there are more satisfied households headed by men (62.7 per cent, compared to 55.6 of households headed by women) and households living in rural areas (63.1 per cent, compared to 48.7 in urban). In most of the provinces, the majority of household are satisfied with the solar system, but close to half of the household are dissatisfied in the provinces of Niassa (45.8 per cent), Gaza (44.6 per cent), Maputo (46.5 per cent) and Maputo City (49.2 per cent). There are however few households using home solar systems in Maputo City, see table 5.15.

Table 5.15 Percentage distribution of households using solar home systems by degree of satisfaction. Mozambique, 2022

	Level of satisfaction with solar home systems				
	Satisfied	Indifferent	Dissatisfied	Total	N
National	61,3	18,7	20,0	100,0	954 277
Sex of household head					
Man	62,7	17,5	19,9	100,0	765 334
Woman	55,6	23,9	20,5	100,0	188 942
Area of residence					
Urban	48,7	20,5	30,7	100,0	124 540
Rural	63,1	18,5	18,4	100,0	829 737
Province					
Niassa	25,6	28,6	45,8	100,0	25 862
Cabo Delgado	50,3	10,8	38,9	100,0	23 841
Nampula	70,3	20,1	9,6	100,0	205 696
Zambezia	74,0	9,7	16,3	100,0	191 354
Tete	70,0	13,8	16,2	100,0	79 956
Manica	63,1	19,9	17,0	100,0	113 380
Sofala	78,3	11,4	10,3	100,0	44 518
Inhambane	49,1	34,8	16,1	100,0	141 149
Gaza	41,9	13,5	44,6	100,0	26 258
Maputo	36,6	16,9	46,5	100,0	99 773
Maputo City	24,6	26,3	49,2	100,0	2 492
Level of education					
None	71,1	16,4	12,5	100,0	91 117
Primary	61,1	18,3	20,6	100,0	492 466
Basic	55,5	22,7	21,8	100,0	72 613
Medium	54,1	18,0	28,0	100,0	73 732
Higher	75,7	15,0	9,3	100,0	6 777

A significant proportion of households have no serious problems with the energy source they use. However, the main problems indicated are the high cost of the electricity (21.2 per cent), the short duration of the service (20.8 per cent), for users of the electricity grid. For users of rechargeable batteries reporting a specific problem, the inability to fully recharge the battery (20.6 per cent) is reported to be the main challenge. For electric generator users, the high cost (including the high cost of fuel/rent), is reported to be the main problem.

Figure 5.3 Percentage distribution of the most serious problems households face with the electricity grid. Mozambique, 2022

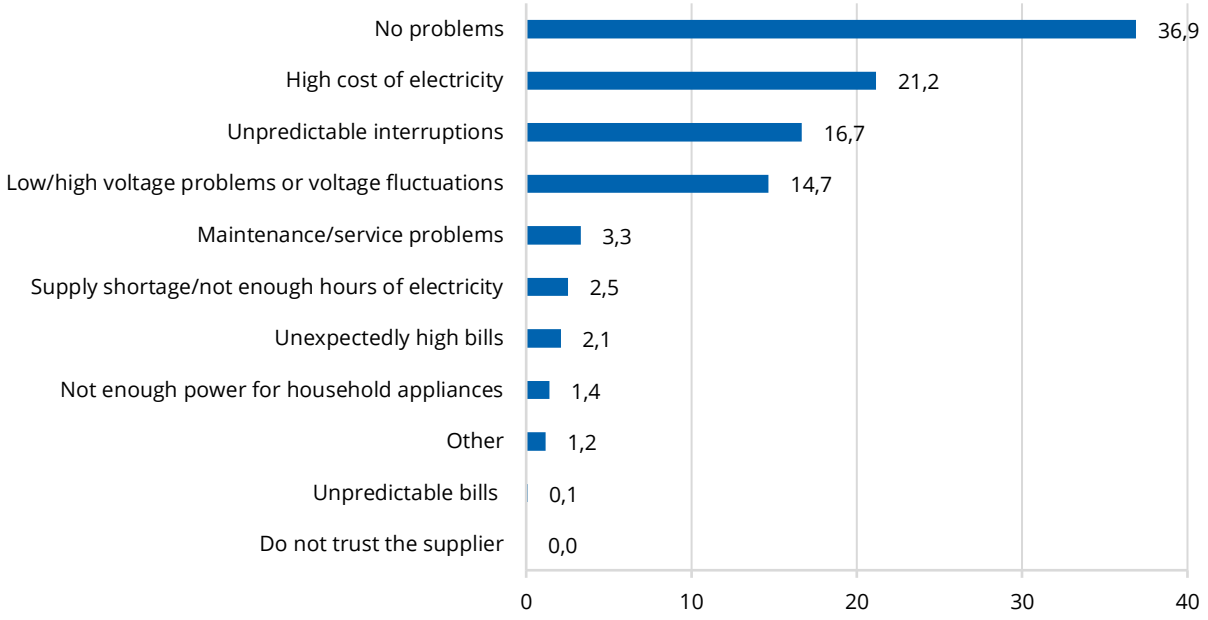
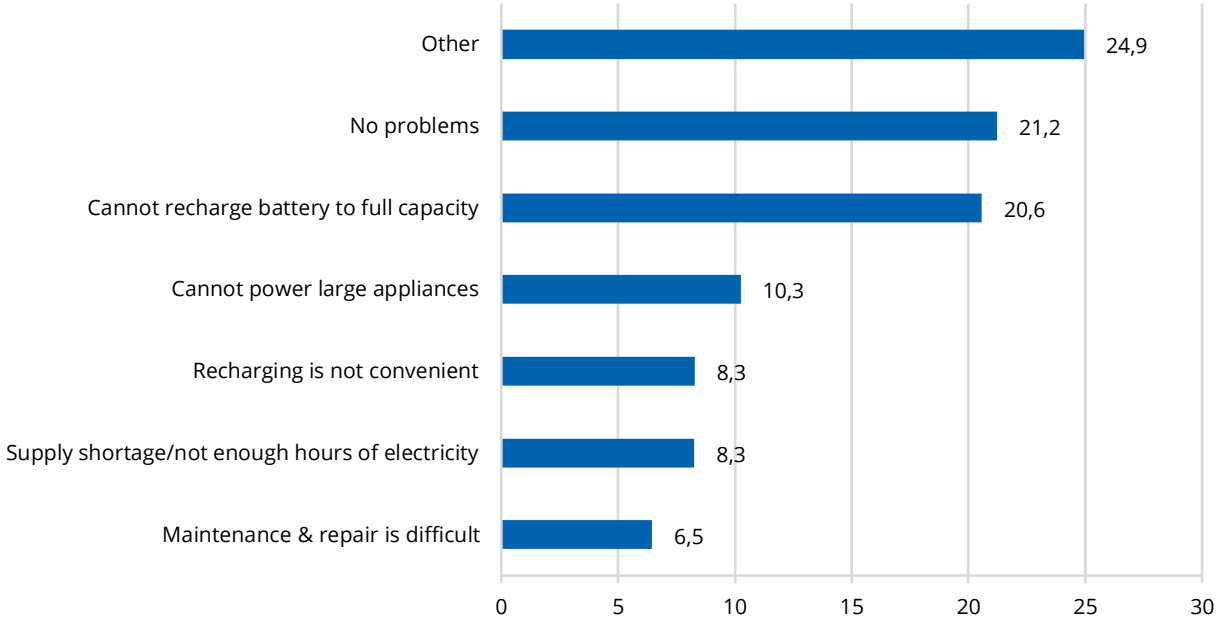


Figure 5.4 Percentage distribution of the most serious problems faced by households with rechargeable batteries. Mozambique, 2022



6. Access to fuel and clean energy technologies

6.1. Access to sustainable energy

The seventh Sustainable Development Goal (SDG7) aims that by 2030 there will be an expansion of infrastructure and modernisation of technology for the provision of modern and sustainable energy services for all developing countries, implying universal access to clean, sustainable and modern energy sources at affordable prices.

Sustainable or renewable energy is all electrical energy that is obtained from an inexhaustible source, such as hydroelectric, solar and wind power; where the source of electrical energy does not create environmental impacts, i.e. during the energy production process there are no emissions of polluting substances into the environment, and meets the needs of the present without compromising future generations.

Out of 6.8 million households in the country, 40.3 per cent have access to sustainable energy[2]. Female-headed households have a bit less access to sustainable energy (38.4 per cent) compared to male-headed households (41.1 per cent), see table 6.1.

In rural areas, the challenge of access to renewable energy persists, with 24.8 per cent of household having access, while among households living in urban areas, 72.7 per cent have access to this type of energy. The provinces of Tete and Cabo Delgado have the lowest percentages of household with access to renewable energy, with 18.5 per cent and 23.1 per cent respectively. In contrast, Maputo City (97.5 per cent), Maputo (73.1 per cent) and Gaza (63.2 per cent) provinces have high percentages of household with access to renewable energy.

When analysing access to sustainable energy versus the highest level of schooling completed by the head of the household in table 6.1, households whose head has not completed any level of schooling (25.2 per cent), as well as those who have completed primary school (36.9 per cent), have the least access to sustainable energy. It can also be seen that households headed by individuals who are self-employed in agriculture, animal production, forestry, hunting and fishing experience low access to sustainable energy (19.8 per cent), see table 6.1.

[2] Proportion of population with access to electricity. Access rates are only considered if the primary source of lighting is the local electricity provider, solar systems, mini-grids and stand-alone systems. Light on average for at least 4 hours per day and 1 hour at night.

Table 6.1 Percentage distribution of households by situation of access to sustainable energy. Mozambique, 2022

	Access to sustainable energy			
	No access	With access	Total	N
National	59,7	40,3	100,0	6 833 550
Sex of household head				
Man	58,9	41,1	100,0	4 787 989
Woman	61,6	38,4	100,0	2 045 561
Area of residence				
Urban	27,3	72,7	100,0	2 215 595
Rural	75,2	24,8	100,0	4 617 955
Province				
Niassa	66,8	33,2	100,0	473 412
Cabo Delgado	76,9	23,1	100,0	577 991
Nampula	68,7	31,3	100,0	1 346 766
Zambezia	68,6	31,4	100,0	1 305 855
Tete	81,5	18,5	100,0	674 671
Manica	51,2	48,8	100,0	416 778
Sofala	53,0	47,0	100,0	539 088
Inhambane	48,5	51,5	100,0	364 432
Gaza	36,8	63,2	100,0	306 011
Maputo	26,9	73,1	100,0	561 985
Maputo City	2,5	97,5	100,0	266 561
Highest level of education completed by household head				
None	74,8	25,2	100,0	647 484
Primary	63,1	36,9	100,0	2 892 220
Basic	41,1	58,9	100,0	607 189
Medium	22,9	77,1	100,0	599 476
Higher	3,5	96,5	100,0	216 106
Position of the head of household in the labour process				
Self-employed or employer in agriculture/fishing	80,2	19,8	100,0	3 734 616
Self-employed or employer in other production/services	46,9	53,1	100,0	1 216 812
Employees of public administrations or companies	16,8	83,2	100,0	422 545
Employed in the private sector	23,3	76,7	100,0	763 973
Not economically active	38,0	62,0	100,0	689 772

6.2. Cooking conveniences

In order to establish the levels of cooking solutions, we asked respondents for the time spent purchasing or buying fuel for cooking in the last seven days prior to the interview and the time spent preparing the cooker to cook each meal.

Levels 0-1 and 2 refer to low convenience, the third level (3) is medium convenience, the fourth level (4) is medium-high convenience and level 5 is high or optimum convenience. A detailed overview of the level classification is given in annex 1.

In Mozambique, more than half of all households use a low convenience kitchen to cook their food (28.0 per cent at level 0-1 and 25.8 per cent at level 2), i.e. every time they spend more than 3 hours to collect, produce or buy the fuel to cook and more than 10 minutes to prepare the cooker for cooking.

Table 6.2 Percentage distribution of households by level of kitchen convenience. Mozambique, 2022

	Level of kitchen convenience						
	0-1	2	3	4	5	Total	N
National	28,0	25,8	29,7	9,4	7,0	100,0	6 833 550
Sex of household head							
Man	28,2	24,8	30,5	9,6	6,9	100,0	4 787 989
Woman	27,7	28,1	27,8	9,2	7,2	100,0	2 045 561
Area of residence							
Urban	22,7	20,0	31,4	11,3	14,6	100,0	2 218 320
Rural	30,6	28,6	28,9	8,5	3,3	100,0	4 615 230
Province							
Niassa	44,9	14,2	22,3	6,8	11,8	100,0	473 412
Cabo Delgado	28,0	43,3	26,2	0,5	2,1	100,0	577 991
Nampula	47,6	20,8	19,4	10,6	1,5	100,0	1 346 766
Zambezia	19,6	31,4	34,7	10,4	4,0	100,0	1 305 855
Tete	14,7	24,5	43,0	16,4	1,5	100,0	674 671
Manica	27,7	22,7	41,1	5,9	2,6	100,0	416 778
Sofala	23,3	21,3	36,8	10,9	7,7	100,0	539 088
Inhambane	25,2	40,8	25,7	3,3	4,9	100,0	364 432
Gaza	34,1	33,5	22,9	3,8	5,7	100,0	306 011
Maputo	4,5	19,3	32,4	18,5	25,3	100,0	561 985
Maputo City	31,1	8,2	20,6	4,0	36,2	100,0	266 561

6.3. Main cooker safety levels

Amongst the various aspects linked to cooking, it is important to assess the safety offered by the cooker considered to be the main cooker by the household. For this purposethe households were categorised into two levels of safety of the main cooker, corresponding to level 0-3 and 4-5 in the Sustainable Energy for All project (SE4ALL)[3], as shown in table 6.3.

Level 0-3 included all households who had recorded at least one member who had suffered a serious stove-related accident in the last 12 months prior to the interview, while level 4-5 included those who had not recorded any member who had suffered a serious accident in the last 12 months.

The majority of households (94.8 per cent) use a safe cooker, i.e. these households have not had a stove-related accident in the last 12 months.

By sex of the head of the household, there are no major differences in the use of unsafe cookers, with 5.7 per cent of households headed by men and 4.1 per cent headed by women.

The provinces of Zambézia (9.0 per cent, Niassa (8.2 per cent) and Tete (6.1 per cent) have a higher percentage of cooking related accidents than the national figure of 5.2 per cent, and hence more households using cookers with a low level of safety, see table 6.3.

Table 6.3 Percentage distribution of households by level of safety of the main cooker. Mozambique, 2022

	Main cooker safety level			
	0-3	4-5	Total	N
National	5,2	94,8	100	6 833 550
Sex of household head				
Man	5,7	94,3	100	4 793 816
Woman	4,1	95,9	100	2 039 734
Area of residence				
Urban	5,2	94,8	100	2 219 953
Rural	5,2	94,8	100	4 613 597
Province				
Niassa	8,2	91,8	100	431 106
Cabo Delgado	5,1	94,9	100	580 582
Nampula	5,2	94,8	100	1 361 746
Zambezia	9.0	91,0	100	1 315 753
Tete	6,1	93,9	100	686 603
Manica	3,3	96,7	100	419 883
Sofala	1,8	98,2	100	535 634
Inhambane	1,1	98,9	100	364 893
Gaza	5,1	94,9	100	303 355
Maputo	3,1	96,9	100	571 002
Maputo City	0,3	99,7	100	262 992
Highest level of education completed				
None	7,7	92,3	100	630 206
Primary	5,3	94,7	100	2 851 782
Basic	5,8	94,2	100	598 398
Medium	6,1	93,9	100	590 752
Higher	4,3	95,7	100	214 286

[3] openknowledge.worldbank.org/collections/9efd823c-0788-51f8-971a-83a37b36a64f

6.4. Expenditures for cooking fuel

Cooking necessarily involves the use of fuel. In the survey we ask for expenses related to biomass, liquefied petroleum gas, biogas, solar energy and electricity.

The levels of cooking fuel expenditures are broken down into two categories (0-3 and 4-5), where level 0-3 covers households who spend more than 5 per cent of their household income on purchasing fuel each year, while level 4-5 classifies households who spend less than 5 per cent of their average annual income.

In Mozambique as a whole, 36.4 per cent of households spend more than 5 per cent of their annual income on buying cooking fuel. The expenses are similar in both male-headed households and female-headed households, but much higher in urban (74.4 per cent) than in rural areas (18.1 per cent).

Maputo City (94.9 per cent) and Maputo province (85.8 per cent) have a much higher percentage of households spending more than 5 per cent of their annual income to have access to cooking fuel, compared both to the other provinces and the national average of 36.4 per cent (table 6.4).

Table 6.4 Percentage distribution of households by level of access to cooking fuel,. Mozambique, 2022

	Fuel access level for kitchen			
	0-3	4-5	Total	N
National	36,4	63,6	100,0	6 833 550
Sex of household head				
Man	35,7	64,3	100,0	4 787 989
Woman	37,8	62,2	100,0	2 045 561
Area of residence				
Urban	74,4	25,6	100,0	2 218 320
Rural	18,1	81,9	100,0	4 615 230
Province				
Niassa	49,3	50,7	100,0	473 412
Cabo Delgado	19,3	80,7	100,0	577 991
Nampula	22,1	77,9	100,0	1 346 766
Zambezia	18,3	81,7	100,0	1 305 855
Tete	31,4	68,6	100,0	674 671
Manica	38,0	62,0	100,0	416 778
Sofala	47,2	52,8	100,0	539 088
Inhambane	28,7	71,3	100,0	364 432
Gaza	45,6	54,4	100,0	306 011
Maputo	85,8	14,2	100,0	561 985
Maputo City	94,9	5,1	100,0	266 561

6.5. Cooking fuel availability levels

The spectrum of cooking fuel availability is divided in six levels, where 0 to 3 corresponds to households that had their main cooking fuel available for less than 80.0 per cent of the year. Level 4 covers households that have had fuel available for 80.0 per cent of the year and level 5 includes households that have had fuel available for the whole year.

With regard to the availability of the main cooking fuel, table 6.5 shows that 91.0 per cent of households had access to their main fuel less than 80 per cent of the last year (levels 0 to 3). Only 8.3 per cent of households had fuel available throughout the year (level 5).

According to area of residence, there are differences in the availability of fuel throughout the year, with a greater *deficit* for households living in rural areas (94.0 per cent) than those in urban areas (84.7 per cent).

In general, in all provinces households have faced difficulties in accessing fuel for cooking in the last 12 months. However, the provinces of Niassa and Inhambane have the highest percentages of households with fuel available throughout the year, 20.0 per cent and 21.7 per cent respectively, see table 6.5.

Table 6.5 Percentage distribution of households by level of availability of main cooking fuel. Mozambique, 2022

	Level of availability of the main cooking fuel				
	0-3	4	5	Total	N
National	91,0	0,7	8,3	100,0	6 833 550
Sex of household head					
Man	91,2	0,8	8,0	100,0	4 787 989
Woman	90,4	0,6	8,9	100,0	2 045 561
Area of residence					
Urban	84,8	0,9	14,3	100,0	2 218 320
Rural	94,0	0,6	5,4	100,0	4 615 230
Province					
Niassa	79,8	0,2	20,0	100,0	473 412
Cabo Delgado	93,9	0,6	5,4	100,0	577 991
Nampula	93,6	0,9	5,5	100,0	1 346 766
Zambezia	95,5	0,4	4,2	100,0	1 305 855
Tete	91,5	0,4	8,0	100,0	674 671
Manica	94,9	0,0	5,1	100,0	416 778
Sofala	95,3	0,3	4,3	100,0	539 088
Inhambane	77,8	0,5	21,7	100,0	364 432
Gaza	91,5	0,9	7,6	100,0	306 011
Maputo	81,8	3,3	14,8	100,0	561 985
Maputo City	90,1	0,0	9,9	100,0	266 561
Highest level of education completed					
None	89,7	1,4	8,9	100,0	647 484
Primary	92,6	0,6	6,8	100,0	2 892 220
Basic	88,8	1,1	10,1	100,0	607 189
Medium	83,1	1,6	15,3	100,0	599 476
Higher	82,1	1,0	16,9	100,0	216 106

7. Gender, access to electricity and improved cookers

In promoting access to electricity and improved cookstoves, it is important to ensure that both women and men have equal benefits and opportunities. This chapter aims to demonstrate the relationships between women's empowerment and various characteristics selected in the context of access to electricity and improved cookstoves. It focuses on the extent to which adult women are empowered in the decision-making component within the household. Thus, only households with female members aged 15 or over were considered.

The following were considered in this chapter as components of women's empowerment:

i) involvement in decision-making in relation to self-care,
ii) ii) major household purchases to be made by the household,
iii) iii) when, how and whom to visit among family and friends.

Empowerment is subdivided into four levels: level 0 for households where the woman is not involved in any of the decisions; level 1 where the woman is involved in one of the decisions; level 2 in 2 decisions; and level 3 in decision for all 3 empowerment issues being analysed.

Cooking solutions are subdivided into four levels from 0 to 3: level 0 for households with 3-stone wood-burning cookers, level 1 for households with other wood-burning cookers, level 2 for households with basic charcoal cookers and level 3, improved charcoal cookers.

The relationships between levels of empowerment and background variables are shown in table 7.1. In terms of the gender of the head of the household, 45.5 per cent of male-headed households and 73.3 per cent of female-headed households are at the highest level of decision-making on issues related to women's empowerment (level 3). In a quarter (25.1 per cent) of the male-headed households, women are not involved in any decision (level 0).

Nationwide, women are involved in decision-making in all empowerment issues included in a bit more than half of the households (55.2 per cent). According to area of residence, women are more empowered in urban areas than in rural areas, with 60.1 per cent of households in urban areas having a high level of empowerment when it comes to making decisions related to health, shopping and family visits, while in rural areas, 53.0 per cent of households have the same level of empowerment.

At country level, Inhambane province has the highest percentage of households at the highest level of empowerment (level 3) with 71.3 per cent and Cabo Delgado with the lowest percentage (44.0 per cent). In Sofala province, in 30.0 per cent of the households, women are not involved in decisions related to own to self-care, major household purchases or visit to family and friends. In terms of connection to the electricity grid, in 60.5 per cent of households connected to the grid have the power to make decisions on all issues surveyed, while women in households not connected have a relatively lower autonomy (52.8 per cent).

With regard to kitchen solutions, we find that women are more empowered in households with improved cooking solutions. Households using the highest level of cooking solutions has the highest percentage women’s empowerment (66.0 per cent). For households who use cooking solutions based on other wood-burning cookers (level 1), 49.4 per cent have the power to decide on all empowerment issues, followed by 54.6 per cent who use a 3-stone wood-burning cooker (level 0), table 7.1.

Table 7.1 Percentage distribution of households by levels of empowerment of women using improved cookstoves. Mozambique, 2022

	Level of women's empowerment					
	0 (less empowered)	1	2	3 (more empowered)	Total	N
National	19,5	11,8	13,4	55,2	100,0	5 643 451
Sex of the head of the household						
Man	25,1	14,3	15,0	45,5	100,0	3 702 726
Woman	8,8	7,0	10,5	73,7	100,0	1 940 724
Area of residence						
Urban	13,0	11,0	16,0	60,1	100,0	1 792 849
Rural	22,6	12,2	12,3	53,0	100,0	3 850 601
Province						
Niassa	26,5	13,0	14,5	45,9	100,0	349 716
Cabo Delgado	37,9	7,7	10,4	44,0	100,0	538 221
Nampula	19,1	16,1	13,9	50,9	100,0	1 110 278
Zambezia	17,1	17,1	20,1	45,7	100,0	964 597
Tete	12,4	9,3	9,0	69,3	100,0	630 953
Manica	17,5	12,4	7,9	62,2	100,0	396 032
Sofala	30,0	7,0	9,4	53,6	100,0	458 494
Inhambane	10,5	8,4	9,8	71,3	100,0	314 882
Gaza	15,8	15,1	16,3	52,9	100,0	239 036
Maputo	7,8	5,3	17,4	69,5	100,0	455 203
Maputo City	19,7	5,6	12,8	61,9	100,0	186 040
Grid connection						
Yes	13,9	10,0	15,6	60,5	100,0	1 756 464
No	22,0	12,6	12,5	52,8	100,0	3 886 987
Level of cooking solutions						
0	19,9	12,2	13,3	54,6	100,0	5 105 540
1	21,0	12,5	17,1	49,4	100,0	149 073
2	12,6	17,2	8,3	62,0	100,0	48 109
3	14,7	4,6	14,8	66,0	100,0	340 729

8. Human well-being and income-generating activities

Access to modern electricity, fuel and sustainable technology is directly related to human well-being, as it impacts on the fulfilment of basic needs and social development linked to education, health, security, and opportunities for income-generating activities.

This chapter presents the conditions of human well-being and income-generating activities that are expected to be influenced by access to modern electricity, fuel, and sustainable technology. The presentation is made by combining activities with different characteristics and demonstrating how these income-generating components that favour well-being have changed compared to the situation five years ago.

8.1. Livelihood, economic activity and income

The distribution of households according to their income generating activities of the household head compared to 5 years ago is shown in Table 8.1.

In the last five years, the number of workers or self-employed in the agricultural sector have increased slightly, from 53.7 per cent five years ago to 54.7 per cent today. In this context, considering that agricultural activities are associated with low income, it can be considered that economic status has not improved. However, workers or self-employed in non-agricultural activities went from 15.8 per cent five years ago to 17.8 per cent today.

In urban areas, currently the most predominant position of household heads in the labour process is that of employer or self-employed in non-agricultural activities, with 24.1 per cent of the population, an increase of 3 percentage points over the last 5 years. Then the position of worker in the private sector predominated with 23.7 per cent. In rural areas, both today (70.7 per cent) and five years ago (69.6 per cent), the majority of the population is self-employed in agriculture or fishing.

In terms of the sex of the head of the household, women (61.8 per cent) and men (51.7 per cent) are currently mainly self-employed in agriculture or fishing, a similar pattern five years ago (59.9 per cent for women and 51.0 per cent for men).

Considering the high level of education completed, the heads of households with higher education are mainly employed as civil servants or workers in public companies (65.0 per cent), followed by workers in the private sector (21.2 per cent). The same positions concentrated a large proportion of the heads of households 5 years ago, with 65.4 per cent and 18.0 per cent. The heads of households with no schooling are mainly self-employed in agriculture or fishing (72.6 per cent), compared to 72.1 per cent five years ago, table 8.1

Table 8.1 Percentage distribution of households by income generating activities of the household head currently and 5 years ago. Mozambique, 2022

	Position in labour proceedings												
	Currently						5 years ago						
	Self-employed/ employer in agriculture/ fishing	Self-employed/ employer in non-agricultural activities	Workers in public administration and companies	Private sector worker	Other	Total	Self-employed/ employer in agriculture/ fishing	Self-employed/ employer in non-agricultural activities	Workers in public administration and companies	Private sector worker	Other	Total	N
National	54,7	17,8	6,2	11,2	10,1	100,0	53,7	15,8	6,1	11,1	13,1	100,0	6 833 550
Sex of household head													
Man	51,7	21,2	7,0	13,0	7,1	100,0	51,0	18,8	7,2	12,9	9,9	100,0	4 788 749
Woman	61,8	9,8	4,3	6,9	17,2	100,0	59,9	8,9	3,7	6,6	20,7	100,0	2 044 801
Area of residence													
Urban	21,4	24,1	11,4	23,7	19,4	100,0	20,4	21,1	12,2	23,7	22,4	100,0	2 217 523
Rural	70,7	14,8	3,7	5,2	5,7	100,0	69,6	13,3	3,2	5,0	8,7	100,0	4 616 027
Highest level of education completed													
None	72,6	13,8	0,2	5,7	7,7	100,0	72,1	11,9	0,4	8,2	7,4	100,0	647 196
Primary	58,8	20,7	0,9	10,8	8,9	100,0	56,8	18,2	1,9	10,9	12,0	100,0	2 886 159
Basic	29,5	28,4	6,3	24,5	11,3	100,0	26,0	26,1	5,9	22,8	19,2	100,0	605 489
Medium	13,0	20,8	28,5	25,8	11,9	100,0	11,7	18,9	22,3	23,6	23,5	100,0	599 476
Higher	0,0	7,7	65,0	21,2	6,1	100,0	0,0	6,0	65,4	18,0	10,6	100,0	216 106

At a national level, 33.0 per cent of the heads of households carrying out income-generating activities believe that their income has increased, compared to 45.9 per cent who say that they have reduced their income levels in their main occupations. The situation is quite similar in both urban and rural areas, see table 8.2.

Of female-headed households, 38.5 per cent feel that their income has decreased compared to 5 years ago, compared to 48.7 per cent of male headed households. Female headed households have not increased their income more than men but have to a larger degree managed to maintain the same income. While 28.6 per cent of female headed households report to have maintained the same income levels, the same is the case for only 18.3 per cent of male headed households, see table 8.2.

Households that have heads with medium education (nível médio), report the highest rate of decreased income. As many as 71.2 per cent of them report a decrease in income over the last 5 years, and only 19.3 per cent report an increased income. The groups where most report to have an increased income over the last 5 years were those with a basic level of education (59.9 per cent) and higher education (53.9 per cent).

Taking into account their position in the labour market, the majority (51.1 per cent) of the heads of households who were self-employed in non-agricultural activities believe that they have increased their income.

Self-employed in agriculture or fishing (49.4 per cent), and civil servants or employees of public companies (52.5 per cent) and those in other positions (48.8 per cent) mostly believe that they are in a worse financial situation than they were 5 years ago. Workers in the private sector are the only ones who mostly believe they have the same income as 5 years ago (50.9 per cent), see table 8.2.

Table 8.2 Percentage distribution of households that changed their main source of income in the last 5 years. Mozambique, 2022

	Change in income				
	Decrease	Maintained	Increased	Total	N
National	45,9	21,1	33,0	100,0	419 901
Sex of household head					
Man	48,7	18,3	33,0	100,0	304 027
Woman	38,5	28,6	32,9	100,0	115 874
Area of residence					
Urban	45,1	21,8	33,2	100,0	81 780
Rural	46,1	21,0	33,0	100,0	338 122
Highest level of education completed					
None	29,1	42,4	28,5	100,0	60 058
Primary	47,7	17,6	34,7	100,0	212 927
Basic	29,2	10,9	59,9	100,0	13 548
Medium	71,2	9,6	19,3	100,0	28 666
Higher	0,0	46,1	53,9	100,0	3 958
Position in labour proceedings					
Self-employed/agriculture and fisheries	49,4	18,2	32,4	100,0	312 860
Self-employed/non-agricultural activities	29,0	19,8	51,1	100,0	54 685
Civil servant or public company employee	52,5	16,0	31,5	100,0	11 393
Private sector worker	26,5	50,9	22,6	100,0	16 641
Other	48,8	43,8	7,4	100,0	24 323

8.2. Agriculture, land cultivation and domestic animals

The survey measures the size of cultivated land both at the time of the interview and five years earlier. At the national level, there has been a reduction of landless households over the past five years. There has been a reduction in households without land from 25.7 per cent to 22.1 per cent. Table 8.3 below also show a small increase in the share of households owing land. The increase appears to be concentrated around land sizes between 1.2 and 5 hectares. The share of households having cultivating areas of 1.2 – 2.5 hectares, increased from 23.1 per cent to 24.8 per cent over the five-year period, while households cultivating areas of 2.5 – 5.0 hectares, went from 8.0 per cent to 9.0 per cent.

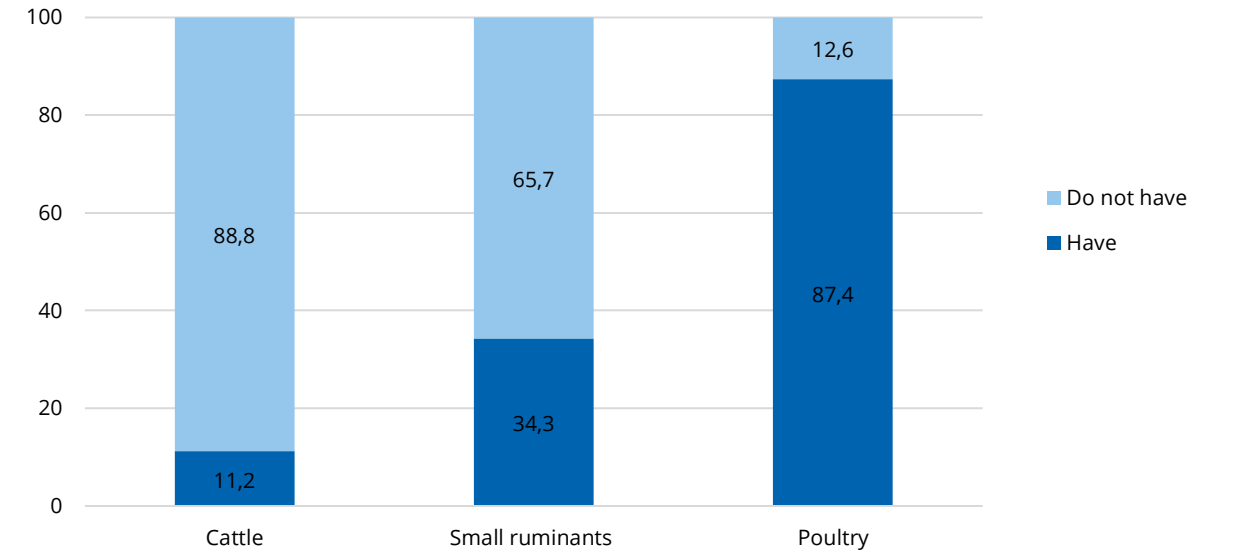
Also in the urban areas, the percentage of households without access to land are reduced, from 53.4 per cent to 51.8 per cent, so there are more households with land available at the time of the interview than five years earlier, see table 8.3.

Table 8.3 Percentage distribution of households by size of cultivated area. Mozambique, 2022

	Cultivated Area (hectar)												
	Currently						5 years ago						
	Landless	< 1.2	1.2-2.5	2.5-5.0	> 5.0	Total	Landless	< 1.2	1.2-2.5	2.5-5.0	> 5.0	Total	N
National	22,1	39,7	24,8	9,0	4,4	100,0	25,7	39,0	23,1	8,0	4,3	100,0	6 833 550
Sex of household head													
Man	21,3	37,5	26,2	10,1	4,8	100,0	25,8	36,7	23,8	9,1	4,6	100,0	4 788 428
Woman	24	44,9	21,5	6,2	3,3	100,0	25,3	44,4	21,3	5,4	3,6	100,0	2 045 122
Area of residence													
Urban	51,8	31,1	12,0	3,8	1,3	100,0	53,4	30,1	11,4	3,6	1,5	100,0	2 219 996
Rural	7,9	43,9	30,9	11,4	5,9	100,0	12,3	43,2	28,6	10,1	5,7	100,0	4 613 554
Highest level of education completed													
None	10,4	43,4	27,9	9,8	8,4	100,0	12,9	44,4	25,4	8,4	8,9	100,0	890 820
Primary	15,8	41,8	28,2	9,2	5,0	100,0	20,5	40,5	25,4	8,6	4,9	100,0	3 982 257
Basic	38,2	33,6	16,6	8,4	3,1	100,0	43,4	31,7	15,3	7,5	2,1	100,0	836 662
Medium	54,0	26,1	13,2	6,1	0,7	100,0	61,8	21,7	11,8	4,4	0,3	100,0	826 034
Higher	69,5	18,7	4,9	2,1	4,8	100,0	67,9	19,6	6,6	1,1	4,8	100,0	297 778
Position in labour proceedings													
Self-employed/agriculture and fisheries	2,0	46,1	33,6	12,5	5,8	100,0	6,8	45,9	30,7	11,1	5,6	100,0	3 737 450
Employer/self-employed in non-agricultural activities	28,6	38,4	20,4	7,4	5,2	100,0	32,0	36,9	18,9	7,1	5,0	99,90	1 215 570
Civil servant or public company employee	57,9	27,0	9,6	3,6	2,0	100,0	61,7	22,7	10,3	3,4	2,0	100,0	423 226
Private sector worker	62,0	26,0	9,1	2,0	1,0	100,0	64,3	24,2	8,4	1,9	1,2	100,0	765 204
Other	53,1	31,0	11,7	3,5	0,7	100,0	51,1	32	13,1	2,6	1,3	100,0	690 884

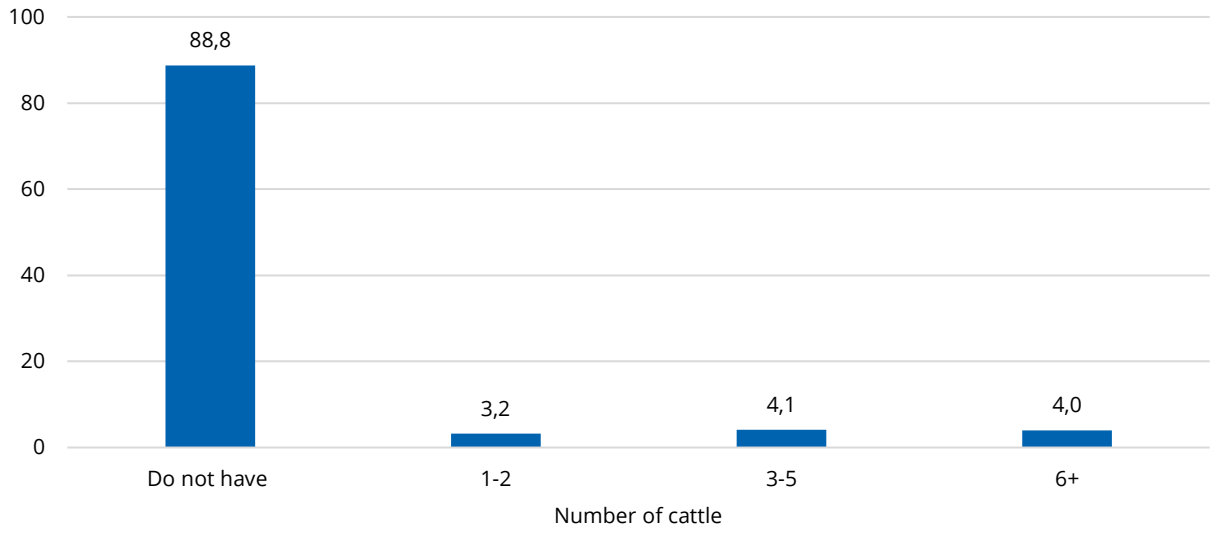
At national level, 46.9 per cent of the households keep some kind of domestic animal. Figure 8.1 shows the percentage distribution of households who keep domestic animals by species, where 11.2 per cent keep cattle, 34.3 per cent keep small ruminants (goats, sheep and/or pigs) and 87.4 per cent keep hens or other birds.

Figure 8.1 Percentage distribution of households keeping domestic animals, by species. Mozambique, 2022



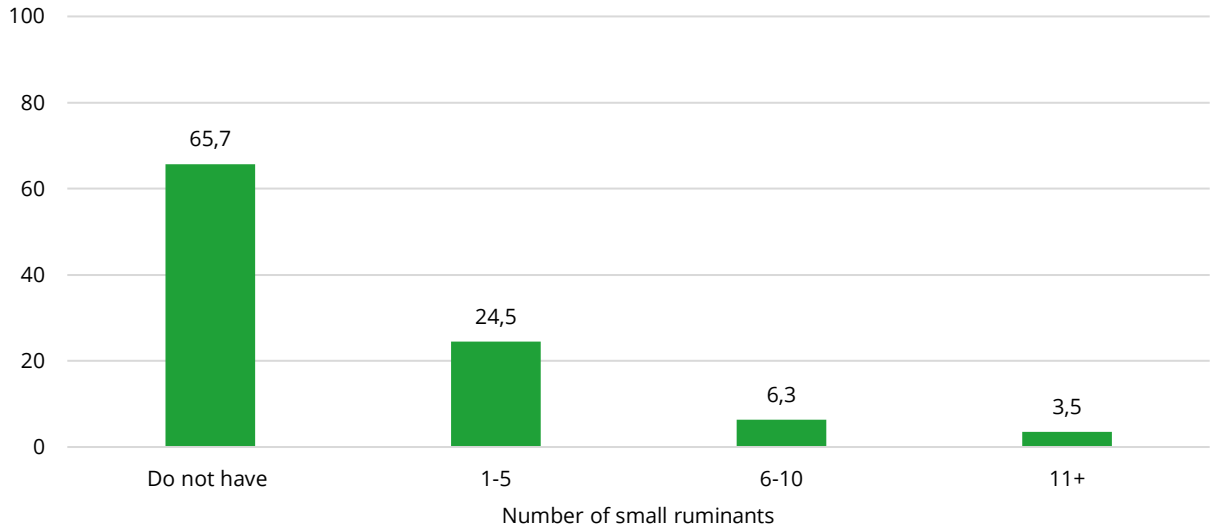
At national level, 3.2 per cent have 1 or 2 cattle, 4.1 per cent of households raise between 3 and5 animals and 4.0 per cent raise 6 or more animals, see Figure 8.2.

Figure 8.2 Percentage distribution of households raising cattle by number. Mozambique, 2022



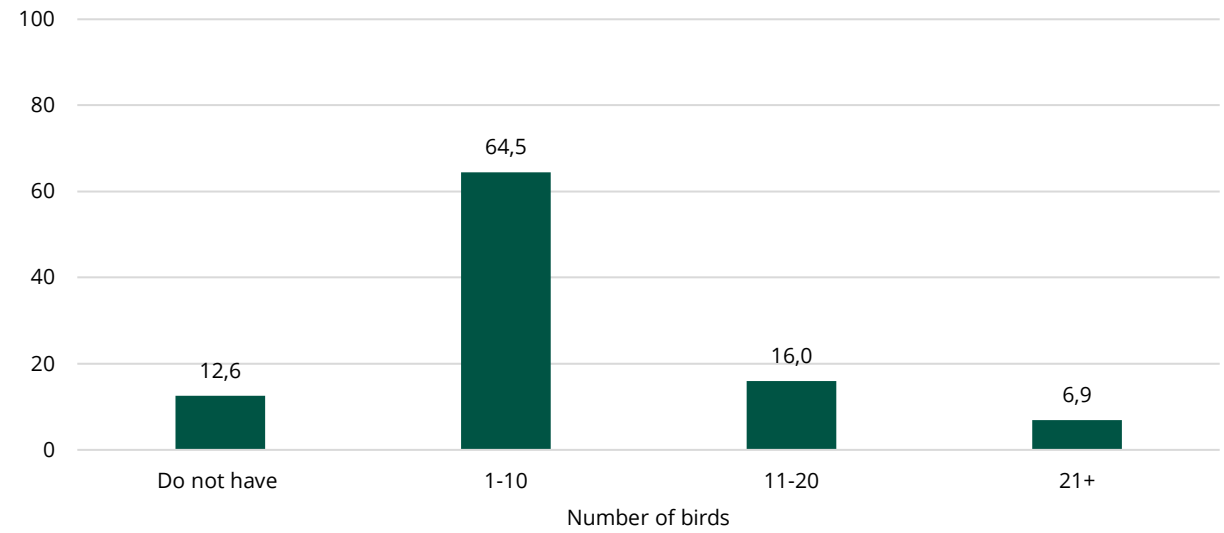
Among the households that raise goats, sheep and/or pigs, those raising between 1 and 5 animals stand out, accounting for 24.5 per cent of households. At national level, there are 3.5 per cent of households with 11 or more ruminants, see Figure 8.3.

Figure 8.3 Percentage distribution of households keeping small ruminants (goats, sheep and/or pigs) by number. Mozambique, 2022



With regard to hens and other birds, most households raise between 1 and 10 birds, accounting for 64.5 per cent of the total number of households in Mozambique. There are 6.9 per cent of households with more than 20 birds, see Figure 8.4.

Figure 8.4 Percentage distribution of households keeping poultry by number. Mozambique, 2022

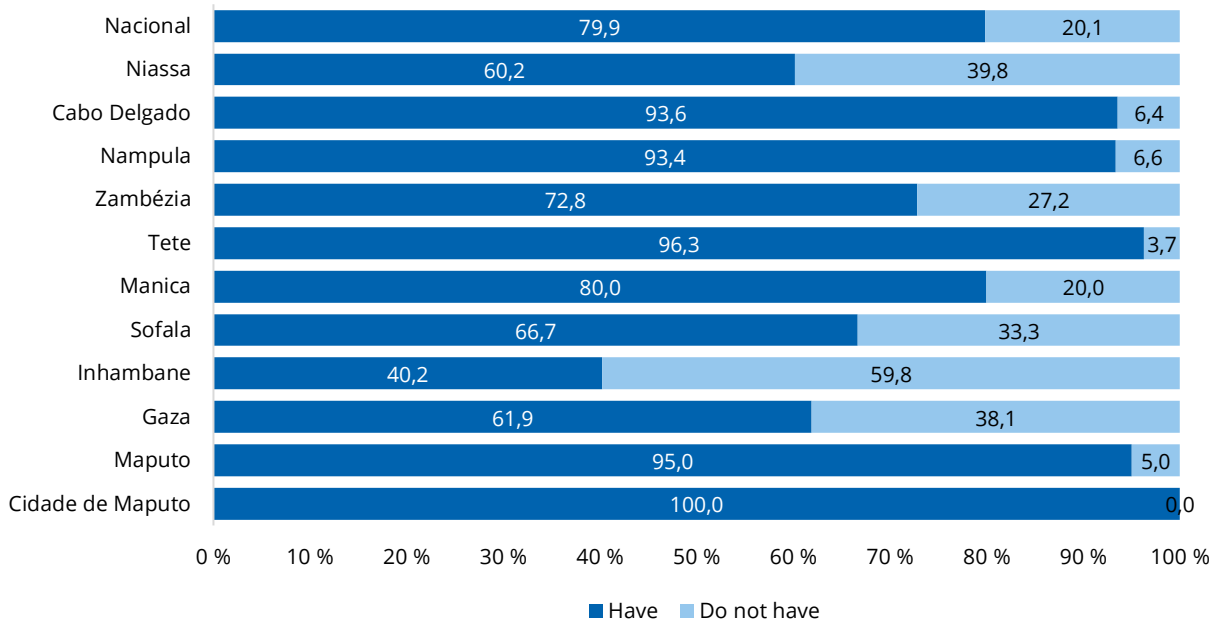


8.3. Business and project implementation in communities

The development of businesses and projects in a community are very important components for improving community's well-being. Figure 8.5 shows the status of businesses existing in the community, while Figure 8.6 shows businesses existing five years ago, while Figure 8.7 shows projects that have been developed or implemented in the community over the last 5 years.

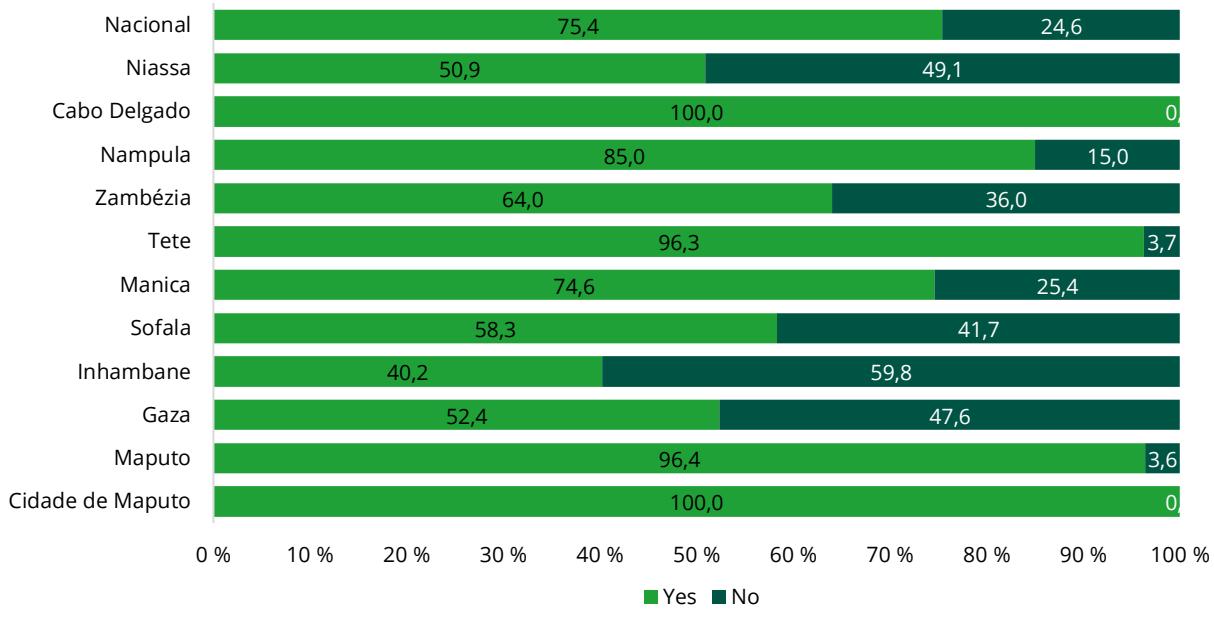
Of the communities surveyed, 79.9 per cent have some kind of businesses. By province, all the communities in Maputo City (100 per cent) have some kind of businesses, unlike Inhambane province, where only 40.2 per cent of the communities have businesses. After Maputo City, the provinces with the highest share of communities with businesses are Tete (96.3 per cent), Maputo province (95.0 per cent), Cabo Delgado (93.6 per cent) and Nampula (93.4 per cent), see Figure 8.5.

Figure 8.5 Percentage distribution of communities by existence of businesses, by province. Mozambique, 2022



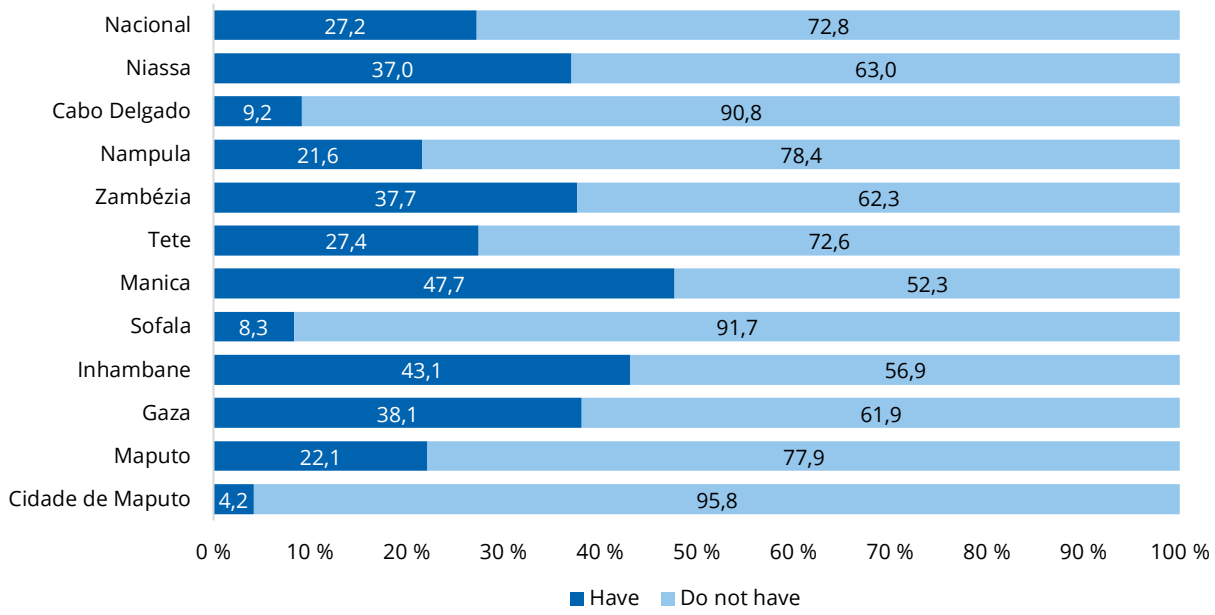
Three out of four (75.4 per cent) of communities had businesses 5 years ago at the national level. At provincial level, all communities of Cabo Delegado and Maputo City, had businesses for more than 5 years, see Figure 8.6.

Figure 8.6 Percentage distribution of communities by existence of business 5 years ago, by province. Mozambique, 2022



Most communities have not implemented any new businesses in the last 5 years (72.8 per cent). The provinces of Cabo Delegado (90.8 per cent), Sofala (91.7 per cent) and Maputo City (95.8 per cent) are the ones with the highest percentage of communities with no projects implemented in the last 5 years. However, in communities in Manica Province many projects have been initiated during the last 5 years (47.7 per cent). In Inhambane Province, 43.1 per cent of the communities have had projects implemented in the last 5 years, see Figure 8.7.

Figure 8.7 Percentage distribution of communities by existence of projects implemented in the last 5 years, by province. Mozambique, 2022



8.4. Energy sources for lighting and children's education

In the majority of households, children only study and do their schoolwork at home during the day (82.1 per cent). For 5.7 per cent of households, the main source of light for schoolwork at home is solar energy. In households where the head is employed in public administration or public companies, as many as 27.9 per cent use solar energy as the main source of light for doing schoolwork at home, see table 8.4.

Disaggregating by sex of the head of the family and by area of residence, this trend does not change significantly. Table 8.4 shows the percentage distribution of households with children attending school and the source of lighting for studying and doing schoolwork, according to some selected characteristics.

Table 8.4 Percentage distribution of households with children attending school by main source of lighting for children's. Mozambique, 2022

	Main source of light for children's homework									
	Electric lighting/ light bulb	Solar-powered light source	Battery-operated light source	Paraffin lamp	Candles	Fireplace	Others	Study and home-work only during the day	Total	N
National	0,2	5,7	3,4	0,7	1,2	0,3	6,3	82,1	100,0	1 497 664
Sex of household head										
Man	0,2	5,8	2,9	0,4	1,1	0,1	6,4	82,9	100,0	1 052 329
Woman	0,3	5,3	4,6	1,4	1,3	0,8	6,1	80,3	100,0	445 335
Area of residence										
Urban	0,3	10,5	6,9	1,1	3,9	0,0	9,1	68,2	100,0	241 985
Rural	0,2	4,7	2,7	0,6	0,6	0,4	5,8	84,8	100,0	1 255 679
Position in labour proceedings										
Self-employed / farming and fishing	0,2	4,0	3,2	0,7	0,7	0,4	6,0	84,8	100,0	1 032 468
Self-employed / non-agricultural activities	0,0	4,8	3,7	1,0	2,3	0,0	7,6	80,6	100,0	257 106
Civil servant or public company employee	0,0	27,9	0,0	0,0	0,0	0,0	4,9	67,3	100,0	29 107
Private sector worker	0,0	17,1	4,6	0,0	4,3	0,0	0,0	74,1	100,0	68 836
Other	1,8	10,4	5,1	0,9	1,2	1,0	10,8	68,8	100,0	108 494

8.5. Lighting and public safety

Table 8.5 shows the extent to which neighbourhoods have street lighting, as well as the situation regarding police patrols and security at night for households.

At a national level, 13.6 per cent of households live in neighbourhoods with streetlights, and of these, 86.4 per cent use street lighting at night.

It can be seen that 29.4 per cent of households living in urban neighbourhoods have streetlights, unlike rural areas where only 5.9 per cent of households live in neighbourhoods with street lighting. It should be noted that 48.1 per cent of the households where the head has higher education as the highest level of education have lighting in the neighbourhoods where they live.

With regard to safety on the streets, 18.8 per cent of households live in a neighbourhood with night-time patrols at the national level. Urban areas have a higher percentage of households living in streets with police patrols (28.2 per cent) than in rural area (14.3 per cent). In terms of level of

education, 37.0 per cent of households whose head has a university degree live in streets patrolled at night.

Table 8.5 Percentage of households by existence of public lighting in the neighbourhood, police patrol/security at night. Mozambique, 2022

	Street lighting in the neighbourhood		Street lighting used at night		Police patrol the streets at night	
	Per cent	N	Per cent	N	Per cent	N
National	13,6	6 833 550	86,4	929 362	18,8	6 833 550
Sex of household head						
Man	13,4	4 788 428	87,8	643 463	19,3	4 788 428
Woman	13,9	2 045 122	83,0	285 899	17,6	2 045 122
Area of residence						
Urban	29,4	2 219 997	84,2	655 023	28,2	2 219 997
Rural	5,9	4 613 553	91,5	274 340	14,3	4 613 553
Highest level of education completed						
None	6,5	890 820	86,3	52 682	21,9	890 820
Primary	10,3	3 982 255	87,1	372 969	16,1	3 982 255
Basic	17,2	836 662	86,0	130 630	22,0	836 662
Medium	32,3	826 034	84,7	242 848	26,4	826 034
Higher	48,1	297 778	93,6	130 233	37,0	297 778
Position in labour proceedings						
Self-employed/ Employer in agriculture/ fisheries	5,2	3 737 450	89,4	193 139	15,7	3 737 450
Self-employed/ Employer in non-agricultural activities	15,2	1 216 787	87,0	185 234	20,9	1 216 787
Civil servant or public company employee	31,3	423 226	88,9	132 723	25,4	423 226
Private sector worker	33,1	765 204	86,4	254 436	20,9	765 204
Other	23,6	690 884	79,8	163 831	25,0	690 884

Table 8.6 shows households' perceptions of safety in their neighbourhoods in different types of situations over time. Household’s perception of safety in general shows that its members feel less safe walking alone in their area at night compared to five years ago. At the time of the survey 39.5 per cent reported it was not safe to walk alone at night, while 34.9 reported the same about the situation five years prior to the survey. More people also report it is not safe to be home alone at night, compared to five years earlier, see table 8.6.

During the day the development has gone in the opposite direction. As many as 66.0 per cent of households feel completely safe walking through the streets of the neighbourhood, a situation that shows improvement since five years ago. Only 57.9 per cent of households reported to be completely safe walking around their neighbourhood five years ago, see table 8.6.

Table 8.6 Percentage distribution of households that said there had been some change in various situations in their experience of security in different locations. Mozambique, 2022

Situations/places	Perception of security experience									
	Currently					5 years ago				
	It's not safe	Reason-ably safe	Com-pletely safe	Not applicable	Total	It's not safe	Reason-ably safe	Com-pletely safe	Not applicable	Total	N
When walking alone in your area during the day	6,1	27,7	66,0	0,2	100,0	6,7	27,6	57,9	7,7	100,0	5 643 451
When walking alone in your area at night	39,5	33,2	25,4	1,9	100,0	34,9	32,0	24,1	8,9	100,0	5 643 451
Being home alone during the day	4,8	30,1	65,0	0,1	100,0	5,6	29,5	57,2	7,7	100,0	5 643 451
Being home alone at night	29,9	35,7	34,0	0,3	100,0	26,4	33,7	31,9	8,0	100,0	5 643 451
Waiting, or on public transport (in your area)	8,8	33,5	38,1	19,6	100,0	8,5	31,6	35,6	24,2	100,0	5 643 451
In the workplace (e.g. fields, market, job, etc.)	8,7	37,0	46,6	7,7	100,0	7,8	34,9	45,5	11,8	100,0	5 643 451
In public places, e.g. shopping centres, churches	3,8	30,2	64,9	1,1	100,0	3,5	28,3	62,7	5,4	100,0	5 643 451
Collecting firewood	18,8	27,9	29,2	24,1	100,0	18,0	27,6	28,3	26,0	100,0	5 643 451
Fetching water	5,2	30,0	50,7	14,2	100,0	5,3	29,7	47,6	17,3	100,0	5 643 451

9. Impact of Access to Sustainable Energy

This chapter presents the main data on the impact of access to sustainable energy in households, considering the size of the cultivated area, animal husbandry, ownership of durable goods, education, social life and security of communities, as well as businesses and projects in the same communities.

9.1. Access to electricity and land

Most households are "landless", (54.2 per cent five years ago to 53.1 per cent today), followed by households with a small cultivated area of up to 1.2 hectares. This group consisted of 28.3 per cent of households with access to electricity five years ago and 29.0 per cent with access today.

With regard to households without access to electricity, almost half of the households have land up to 1.2 hectares under cultivation. This group rose from 47.5 per cent to 48.4 per cent over the last five years, with households with 1.2-2.5 hectares under cultivation following the same trend, rising from 27.2 per cent five years ago to 30.3 per cent today.

As for the level of access to electricity, the highest percentage of households with some cultivated area is at level 0 of access to elecricity, which went from 46.7 per cent five years ago to 47.2 per cent today, with the cultivated area being up to 1.2 hectares, see table 9.1.

Table 9.1 Percentage distribution of households by cultivated area, according to access and level of access to electricity. Mozambique, 2022

Access and level of access to electricity	Cultivated area (hectar)												
	Currently						5 years ago						
	Landless	0-1.2	1.2-2.5	2.5-4.9	> 5	Total	Landless	0-1.2	1.2-2.5	2.5-4.9	> 5	Total	N
National	22,1	39,7	24,8	9,0	4,4	100,0	25,7	39,0	23,1	8,0	4,3	100,0	6 833 550
Access to electricity													
With Access	53,1	29,0	11,6	4,4	1,9	100,0	54,2	28,3	11,9	3,8	1,8	100,0	2 754 643
No Access	7,4	48,4	30,3	9,7	4,2	100,0	12,3	47,5	27,2	8,6	4,3	100,0	4 078 907
Level of Access to Electricity													
0	7,4	47,2	30,7	9,9	4,7	100,0	12,0	46,7	27,6	8,9	4,8	100,0	5 916 905
1	48,4	27,1	11,8	12,7	0,0	100,0	54,1	25,3	7,9	12,7	0,0	100,0	384 256
2	34,8	32,9	19,6	7,6	5,1	100,0	36,4	32,1	19,9	6,6	4,9	100,0	303 148
3	48,4	26,3	14,9	7,2	3,2	100,0	50,8	24,8	15,2	6,2	3,0	100,0	140 980
4	41,1	29,7	18,8	6,3	4,1	100,0	41,1	32,2	17,1	6,1	3,5	100,0	62 647
5	26,6	39,9	16,3	13,5	3,7	100,0	32,3	35,2	16,0	12,7	3,8	100,0	25 614

With regard to keeping domestic animals, the results show that there is no great difference between those who have access (47.1 per cent) and those who don't (46.8 per cent). However, for small ruminants there are some substantial differences, with 37.2 per cent of households having access and 31.4 per cent of those without.

By general level of access to electricity, those who raise cattle (21.7 per cent) and small ruminants (40.2 per cent) stand out at level 5, meaning they have a stable grid connection. It should also be noted that the highest percentage of households keeping poultry is at electricity access level 1, with 100 per cent of households, see table 9.2.

Table 9.2 Percentage distribution of households by ownership and type of domestic animals, according to access and level of access to electricity. Mozambique, 2022

Access and level of access to electricity	Owning a domestic animal				Cattle per cent	Small Ruminants per cent	Birds per cent	N
	Have animals	None	Total	N				
National	46,9	53,1	100,0	6 833 550	11,2	34,3	87,4	3 204 935
Access to electricity								
With Access	47,1	52,9	100,0	4 078 507	12,7	37,2	86,6	1 152 147
No Access	46,8	53,2	100,0	2 755 043	9,8	31,4	88,1	2 052 788
Level of Access to Electricity								
0	49,8	50,2	100,0	5 916 772	11,5	34,4	88,3	2 738 701
1	29,6	70,4	100,0	384 311	0,0	20,8	100,0	258 356
2	41,1	58,9	100,0	303 192	5,8	35,0	86,0	118 519
3	42,7	57,3	100,0	141 000	11,5	33,2	84,0	54 553
4	43,2	56,8	100,0	62 656	14,3	32,1	89,8	21 347
5	56,6	43,4	100,0	25 618	21,7	40,2	90,8	13 458

According to the type of access to electricity, households with access to electricity are more likely to be employed in private institutions (25.1 per cent) and self-employed in agriculture or fishing (23.7 per cent). In contrast, households without access to electricity are self-employed in agriculture or fishing (75.7 per cent), a similar pattern to 5 years ago.

According to the general levels of access to electricity, there is a great spread of occupations in the various levels of access. One exception are households where the head is self-employed in agriculture or fishing, where close to 75 per cent have electricity access level 0, both currently and 5 years ago, see table 9.3

Table 9.3 Percentage distribution of households by change in position in the labour process according to access and level of access to electricity. Mozambique,2022

Access and level of access to electricity	Main occupation												
	Currently							5 years ago					
	Self-employed/ agriculture and fishing	Self-employed/ non-agricultural activities	Civil servant or public company employee	Private sector worker	Other	Total	N	Self-employed/ agriculture and fishing	Self-employed/ non-agricultural activities	Civil servant or public company employee	Private sector worker	Other	Total	N
National	54,7	17,8	6,2	11,2	10,1	100,0	6 833 550	53,8	15,9	6,1	11,1	13,1	100,0	6 833 550
Access to electricity														
With Access	17,2	23,7	15,3	25,1	18,7	100,0	2 753 116	17,1	20,6	15,2	25,0	22,0	100,0	2 755 174
No Access	75,7	13,6	1,2	3,2	6,2	100,0	4 080 434	73,7	12,6	1,0	3,4	9,3	100,0	4 078 376
Level of access to electricity														
0	74,6	13,8	1,6	3,6	6,4	100,0	5 916 682	72,9	12,7	1,4	3,6	9,5	100,0	5 914 937
1	20,9	32,7	21,6	18,1	6,8	100,0	384 349	20,5	24,2	21,6	14,6	19,1	100,0	385 081
2	37,2	23,7	6,8	15,8	16,5	100,0	303 222	37,5	20,4	7,2	16,2	18,6	100,0	303 799
3	22,4	22,4	16,5	23,2	15,4	100,0	141 014	22,3	19,9	15,9	22,9	19,0	100,0	141 283
4	24,9	22,7	12,4	27,6	12,4	100,0	62 662	23,4	20,4	13,6	27,3	15,4	100,0	62 782
5	34,0	24,9	7,6	24,3	9,2	100,0	25 620	38,2	19,3	9,8	21,5	11,2	100,0	25 669

9.2. Business and projects in the community

According to table 9.4, which refers to businesses in the community, both communities with access to energy (82.4 per cent) and those without (78.1 per cent) run businesses, most of which have been in existence for more than five years.

According to the level of access to electricity, there is the same pattern in the existence of any business, with level 5 communities having the highest percentage, 91.7 per cent. This means that access to electricity in the communities has not yet had a major effect on the businesses and projects implemented.

For projects implemented in the communities over the last five years, access to energy hasn't had much of an impact, as more communities without access to electricity have new projects (28.9 per cent) than communities with access (24.8 per cent), see table 9.4.

Table 9.4 Percentage distribution of communities surveyed by existence of businesses and projects implemented, according to access and level of access to electricity. Mozambique, 2022

Access and level of access to electricity	Existence of any business in the community			The business has existed in the community for 5 years			Existence of projects implemented in the community in the last 5 years			
	There is	It doesn't exist	Total	There is	It doesn't exist	Total	There is	It doesn't exist	Total	N
National	79,9	20,1	100,0	75,4	24,6	100,0	27,2	72,8	100,0	1 535
Access to electricity										
With Access	82,4	17,6	100,0	79,0	21,0	100,0	24,8	75,2	100,0	629
No Access	78,1	21,9	100,0	73,0	27,0	100,0	28,9	71,1	100,0	906
Level of access to electricity										
0	78,4	21,6	100,0	74,0	26,0	100,0	28,9	71,1	100,0	1 088
1	-	-	-	-	-	-	-	-	-	-
2	89,0	11,0	100,0	87,5	12,5	100,0	24,0	76,0	100,0	200
3	76,8	23,2	100,0	67,7	32,3	100,0	20,7	79,3	100,0	198
4	86,5	13,5	100,0	89,2	10,8	100,0	35,1	64,9	100,0	37
5	91,7	8,3	100,0	91,7	8,3	100,0	16,7	83,3	100,0	12

9.3. Sources of light and children's education

Does access to electricity improves children's education? Table 9.5 shows the percentage distribution of the main source of lighting for children's homework, highlighting that in 82.1 per cent of households with children aged 6-14, only do homework during the day. This means that the use of electricity is not yet widely used by children for homework.However, for households with access to electricity, 68.9 per cent study their homework only during the day, which is considerably lower than households without access (85.6). Public lighting sources and biogas lamps do not constitute any source of lighting for children's homework, see table 9.5.

As for households with access to electricity, 24.0 per cent use a solar-powered light source for homework. We also find the same high frequency of solar lamps used for homework even if the household has a high quality electrical supply at level 5, mostly a grid connection. In these households, electric light is used for schoolwork in 8.4 per cent of the households.

This means that access to electricity has relatively low impact when it comes to helping children do their homework, as most of them do it during the day with the support of sunlight.

Table 9.5 Percentage distribution of households with children aged 5 to 14 attending school, by main source of lighting used to do school work at home, according to access and level of access to electricity. Mozambique, 2022

	Main lighting for children's homework											
Access	Electric lighting / light bulb	Solar-powered light source	Battery-operated light source	Public lighting	Paraffin lamp	Candles	Biogas lamps	Fire-place	Others	Study and homework only during the day	Total	N
National	0,2	5,7	3,4	0,0	0,7	1,2	0,0	0,3	6,3	82,1	100,0	1 497 664
Access to electricity												
With access	0,0	24,0	4,1	0,0	0,0	0,0	0,0	0,0	2,9	68,9	100,0	308 937
No access	0,3	0,9	3,2	0,0	0,9	1,4	0,0	0,4	7,2	85,6	100,0	1 188 727
Access Levels												
0	0,2	4,6	3,1	0,0	0,8	1,2	0,0	0,4	6,8	83,1	100,0	1 399 440
1	-	-	-	-	-	-	-	-	-	-	-	-
2	0,0	0,0	20,3	0,0	0,0	0,0	0,0	0,0	0,0	79,7	100,0	30 157
3	0,0	18,3	5,7	0,0	0,0	0,0	0,0	0,0	2,0	74,0	100,0	26 169
4	0,0	42,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	57,5	100,0	32 545
5	8,4	24,7	7,3	0,0	0,0	0,0	0,0	0,0	0,0	59,6	100,0	9 354

9.4. Lighting, police patrols and public safety

Access to electricity can improve public safety through the availability of street lighting in neighbourhoods, especially at night. The results show that there is a need to intensify policies to electrify streets in neighbourhoods, since at national level, only 13.6 per cent of streets are lit. Of the households with access to electricity, 22.1 per cent have illuminated streets and of the households without access, just 5.0 per cent.

With regard to public lighting, nationally 86.4 per cent are used at night in areas that have street lights. This figure is quite similar for households having access to electricity (86.1 per cent), and for those without access 87.7 per cent.

Police patrols on the streets at night, covers 18.8 per cent of households nationwide, with 23.5 per cent of those with access to electricity and 14.1 per cent of those without access, see table 9.6.

Table 9.6 Percentage of households with street lighting in the neighbourhood and police patrols at night, according to access to electricity. Mozambique, 2022

	Public lighting		Public lighting at night		Police patrol at night	
Access	per cent	N	per cent	N	per cent	N
National	13,6	6 828 388	86,4	925 686	18,8	6 828 388
Access to electricity						
With access	22,1	3 421 413	86,1	754 505	23,5	3 421 413
No access	5,0	3 406 975	87,7	171 181	14,1	3 406 975
Access Levels						
0	4,5	3 883 284	88,6	174 024	14,2	3 883 284
1	29,5	26 257	92,1	7 738	48,5	26 257
2	25,2	986 700	91,9	248 345	26,4	986 700
3	28,3	1 419 732	83,5	402 134	23,6	1 419 732
4	21,6	305 186	82,6	66 066	26,7	305 186
5	13,2	207 229	72,0	27 378	19,6	207 229

Table 9.7 shows the percentage distribution of women's perceived safety in various situations, according to access to electricity.

As for women with access to electricity, 41.4 per cent don't feel safe walking alone in their area at night, compared to 36.6 per cent of those without access to electricity. Among women with access to electricity, 28.6 per cent feel it is not safe being home alone at night, compared to 30.6 per cent of those without access to electricity, see table 9.7.

Table 9.7 Percentage distribution of women on change in security experience in different situations, according to access to electricity. Mozambique, 2022

	Currently					5 years ago					
Situations/places	It's not safe	Reason-ably safe	Com-pletely safe	Not appli-cable	Total	It's not safe	Reason-ably safe	Com-pletely safe	Not appli-cable	Total	N
With access to electricity											
When walking alone in your area during the day	6,5	26,4	66,9	0,2	100,0	7,2	26,2	59,1	7,5	100,0	7 537 381
When walking alone in your area at night	41,4	33,4	23,4	1,8	100,0	36,9	32,3	22,3	8,5	100,0	7 537 381
Being home alone during the day	5,3	25,0	69,4	0,2	100,0	6,1	25,6	60,8	7,5	100,0	7 537 381
Being home alone at night	28,6	36,1	35,1	0,2	100,0	25,7	33,5	33,3	7,5	100,0	7 537 381
Waiting, or on public transport (in your area)	10,8	34,1	42,1	13,0	100,0	10,5	32,6	39,7	17,3	100,0	7 537 381
In the workplace (e.g. fields, market, job, etc.)	8,8	34,9	47,7	8,6	100,0	8,6	32,9	46,9	11,6	100,0	7 537 381
In public places, e.g. shopping centres, churches	3,9	28,2	67,0	0,8	100,0	3,7	26,6	65,4	4,3	100,0	7 537 381
Collecting firewood	14,8	19,2	25,6	40,4	100,0	14,7	19,3	25,2	40,9	100,0	7 537 381
Fetching water	3,9	23,4	49,0	23,7	100,0	4,1	23,9	46,6	25,4	100,0	7 537 381
No access to electricity											
When walking alone in your area during the day	5,7	28,3	65,9	0,1	100,0	6,4	28,6	59,3	5,7	100,0	6 532 904
When walking alone in your area at night	36,6	33,7	28,2	1,4	100,0	33,3	33,0	26,8	6,9	100,0	6 532 904
Being home alone during the day	3,8	33,5	62,6	0,1	100,0	4,7	32,0	57,3	6,0	100,0	6 532 904
Being home alone at night	30,6	34,2	34,7	0,5	100,0	27,5	34,0	32,0	6,5	100,0	6 532 904
Waiting, or on public transport (in your area)	5,5	32,2	36,4	25,9	100,0	6,2	30,2	34,3	29,3	100,0	6 532 904
In the workplace (e.g. fields, market, job, etc.)	8,0	38,8	47,5	5,7	100,0	7,2	37,3	45,6	9,8	100,0	6 532 904
In public places, e.g. shopping centres, churches	3,8	31,0	64,1	1,1	100,0	3,5	28,9	62,7	4,9	100,0	6 532 904
Collecting firewood	23,9	36,9	33,8	5,4	100,0	22,6	36,4	32,8	8,2	100,0	6 532 904
Fetching water	6,0	36,6	54,6	2,9	100,0	6,3	36,0	51,2	6,5	100,0	6 532 904

Table 9.8 shows the percentage distribution of perceived safety in various situations, according to access to electricity for both women and men.

Among people with access to electricity, 40.6 per cent don't feel safe walking alone in their area at night, compared to 36.4 per cent of those without access to electricity. Among those with access to electricity, 28.2 per cent feel it is not safe being home alone at night, compared to 30.2 per cent of those without access to electricity, see table 9.8.

Table 9.8 Percentage distribution of population on change in security experience in different situations, according to access to electricity. Mozambique, 2022

	Currently					5 years ago					
Situations/places	It's not safe	Reason-ably safe	Com-pletely safe	Not appli-cable	Total	It's not safe	Reason-ably safe	Com-pletely safe	Not appli-cable	Total	N
With access to electricity											
When walking alone in your area during the day	6,3	26,5	67,0	0,1	100,0	7,3	26,2	59,3	7,3	100,0	14 413 479
When walking alone in your area at night	40,6	34,5	23,3	1,7	100,0	36,5	33,4	22,0	8,1	100,0	14 413 479
Being home alone during the day	5,6	25,3	69,0	0,2	100,0	6,3	26,5	60,1	7,1	100,0	14 413 479
Being home alone at night	28,2	36,9	34,8	0,2	100,0	25,5	34,1	33,3	7,2	100,0	14 413 479
Waiting, or on public transport (in your area)	10,5	34,2	42,0	13,2	100,0	10,4	32,6	39,7	17,2	100,0	14 413 479
In the workplace (e.g. fields, market, job, etc.)	8,8	34,9	47,4	8,9	100,0	8,4	33,1	46,7	11,8	100,0	14 413 479
In public places, e.g. shopping centres, churches	4,0	28,2	67,0	0,8	100,0	3,6	27,1	65,1	4,2	100,0	14 413 479
Collecting firewood	14,3	19,8	26,0	39,9	100,0	14,2	19,9	25,4	40,4	100,0	14 413 479
Fetching water	4,0	23,6	49,2	23,2	100,0	4,3	24,3	46,6	24,8	100,0	14 413 479
No access to electricity											
When walking alone in your area during the day	5,5	28,5	65,9	0,1	100,0	6,1	28,9	59,2	5,8	100,0	12 401 801
When walking alone in your area at night	36,4	33,5	28,8	1,3	100,0	32,9	32,9	27,3	6,9	100,0	12 401 801
Being home alone during the day	3,5	33,9	62,5	0,1	100,0	4,3	32,2	57,4	6,0	100,0	12 401 801
Being home alone at night	30,2	34,6	34,8	0,5	100,0	27,0	34,4	32,3	6,3	100,0	12 401 801
Waiting, or on public transport (in your area)	5,4	32,5	36,1	26,0	100,0	5,8	30,5	34,3	29,4	100,0	12 401 801
In the workplace (e.g. fields, market, job, etc.)	7,8	39,0	47,2	6,1	100,0	6,9	37,5	45,6	10,0	100,0	12 401 801
In public places, e.g. shopping centres, churches	3,7	31,1	64,1	1,0	100,0	3,3	28,9	62,8	4,9	100,0	12 401 801
Collecting firewood	23,4	37,1	34,1	5,4	100,0	22,0	36,6	33,1	8,3	100,0	12 401 801
Fetching water	5,9	36,7	54,7	2,7	100,0	6,2	35,9	51,5	6,3	100,0	12 401 801

10. Impact of the COVID-19 Pandemic

The outbreak of the COVID-19 pandemic caused an unprecedented humanitarian crisis, which has been felt in both the social and economic spheres of all nations. The current chapter looks into the impact of the pandemic on the livelihoods and incomes of households, comparing the situation before and during the pandemic.

10.1. Changes of occupation and performing public work during the COVID-19 pandemic

The results indicate that during the COVID-19 pandemic, 94.4 per cent of households did not change their main occupation. Before the start of the pandemic, 96.3 per cent of households did not do any public work.

There is a similar behaviour by sex, area of residence, highest level of education completed and main occupation of the head of the household, see table 10.1. For all groups, between 90 and 97 per cent did not change their occupation. This indicates that COVID-19 has not generally had a major impact on main occupation of the head of the household.

Table 10.1 Percentage distribution of households by change of occupation and performance of public work during the global pandemic. Mozambique, 2022

	Main occupation during the pandemic		Carrying out public work before the start of the pandemic		
	Changed	It hasn't changed	Worked	Did not work	N
National	5,6	94,4	3,7	96,3	6 833 550
Sex of household head					
Man	5,8	94,2	4,1	95,9	4 788 131
Woman	4,9	95,1	2,8	97,2	2 045 420
Area of residence					
Urban	9,6	90,4	5,1	94,9	2 220 320
Rural	3,6	96,4	3,0	97,0	4 613 231
Highest level of education completed					
None	2,9	97,1	2,5	97,5	646 493
Primary	6,4	93,6	2,6	97,4	2 889 042
Basic	8,3	91,7	4,6	95,4	607 189
Medium	7,8	92,2	11,3	88,7	599 476
Higher	6,2	93,8	15,9	84,1	216 106
Main occupation					
Self-employed/ Employer in agriculture/ fisheries	3,9	96,1	2,1	97,9	3 737 000
Self-employed/ Employer in non-agricultural activities	7,8	92,2	2,8	97,2	1 216 964
Civil servant or public company employee	4,4	95,6	17,8	82,2	423 287
Private sector worker	10,4	89,6	4,2	95,8	765 315
Other	5,9	94,1	4,5	95,5	690 984

10.2. Changes in income in the agricultural and business sectors during the pandemic

According to the perceptions of the heads of household regarding the impact of the pandemic on income, 26.2 per cent of household heads in the agriculture, animal production, forestry, hunting and fishing sector reported their income was reduced. In the non-agricultural business sector, only 5.9 per cent reported a reduction in income.

According to gender, slightly more female-headed households (28.4 per cent) than male-headed households (25.3 per cent) reduced their income in the agriculture, animal production, forestry, hunting and fishing sector, with no major difference in the non-agricultural business sector.

The share of households experiencing a reduction of income in the agricultural sector was largest for households in rural areas (31.2 per cent), compared to urban areas (16.0 per cent). The reduction of income from the non-agricultural sector was largest among households in urban areas (8 per cent) compared to rural areas (5 per cent), although few experienced a reduction in this sector compared to the agricultural sector.

Regarding the main occupation, self-employed workers in the agricultural sector and fisheries (33.3 per cent) and in the non-agricultural sector (27.9 per cent) declared that they had considerably reduced their income within the agriculture, animal production, forestry, hunting and fishing sector, see table 10.2.

Table 10.2 Percentage distribution of households by perception of changes in income from activities in the agricultural and business sectors during the global pandemic. Mozambique, 2022

	Income in the agriculture, animal production, forestry, hunting and fishing sector					Income in the non-agricultural business sector					N
	Not applicable	Increased	Maintained	Decreased	Total	Not applicable	Increased	Maintained	Decreased	Total	
National	26,2	16,0	31,5	26,2	100,0	81,1	4,3	8,7	5,9	100,0	6 833 550
Sex of household head											
Man	26,0	18,3	30,4	25,3	100,0	79,4	5,2	9,2	6,3	100,0	4 788 130
Woman	26,8	10,6	34,1	28,4	100,1	85,2	2,1	7,7	5,2	100,0	2 043 578
Area of residence											
Urban	57,2	7,8	19,0	16,0	100,0	80,5	3,1	8,4	8,0	100,0	2 220 319
Rural	11,3	19,9	37,6	31,2	100,0	81,3	4,9	8,9	5,0	100,0	4 613 231
Highest level of education completed											
None	14,3	22,1	32,6	31,0	100,0	77,3	6,4	10,0	6,3	100,0	646 493
Primary	19,9	17,6	33,1	29,4	100,0	79,5	4,7	9,8	6,0	100,0	2 889 042
Basic	43,8	13,6	24,8	17,8	100,0	81,0	4,5	7,8	6,7	100,0	607 189
Medium	59,8	8,5	17,8	13,9	100,0	78,1	5,0	7,2	9,6	100,0	599 476
Higher	72,7	6,7	11,0	9,6	100,0	79,3	3,3	7,5	9,9	100,0	216 106
Position in labour proceedings											
Self-employed/ Employer in agriculture/ fisheries	3,9	21,8	41,0	33,3	100,0	82,8	3,4	9,1	4,7	100,0	3 737 000
Self-employed/ Employer in non-agricultural activities	31,0	12,0	29,1	27,9	100,0	70,7	8,5	12,3	8,4	100,0	1 216 964
Civil servant or public company employee	65,4	6,7	15,9	11,9	100,0	85,5	3,6	6,8	4,2	100,0	423 287
Private sector worker	71,5	6,6	12,3	9,6	100,0	84,7	1,9	4,8	8,6	100,0	765 315
Other	64,4	7,9	15,7	12,0	100,0	83,1	4,6	6,1	6,2	100,0	690 984

10.3. Changes in income, consumption and asset patterns during the pandemic

At a national level, the impact of the pandemic according to the perceptions of heads of households, 30.8 per cent consider that it has reduced their income, 17.0 per cent have reduced consumption and 4.1 per cent have sold assets.

According to gender, more female-headed households reduced income (34.1 per cent) and consumption (18.1 per cent) than male-headed households. Male-headed households recorded a higher percentage of asset sales, with 4.6 per cent of them selling assets, compared to 2.8 per cent of female headed households.

According to area of residence, urban areas have more households who feel that income and consumption have decreased than households in rural areas. As many as 35.5 per cent of urban households reported their income had decreased, compared to 28.5 per cent among households in rural areas. The difference in consumption reduction is less, but still 19.5 per cent of urban households reported a reduction of consumption, while the same was the case for 15.9 of rural households.

Regarding main occupation, among households with heads employed as civil servants or public company employee relatively few reported a reduction in income and consumption, see table 10.3.

Table 10.3 Percentage distribution of households by perceived change in income patterns, consumption and sale of assets during the pandemic. Mozambique, 2022

	Income				Consumption					
	Increased	Main-tained	De-creased	Total	Increased	Main-tained	De-creased	Total	Sale of assets	N
National	16,8	52,4	30,8	100,0	19,4	63,5	17,0	100,0	4,1	6 833 550
Sex of household head										
Man	18,9	51,7	29,4	100,0	21,2	62,2	16,6	100,0	4,6	4 788 131
Woman	11,9	54,0	34,1	100,0	15,3	66,6	18,1	100,0	2,8	2 045 420
Area of residence										
Urban	14,2	50,2	35,5	100,0	24,9	55,6	19,5	100,0	6,3	2 220 319
Rural	18,0	53,5	28,5	100,0	16,8	67,3	15,9	100,0	3,0	4 613 231
Highest level of education completed										
None	18,5	52,2	29,3	100,0	14,1	73,2	12,7	100,0	4,0	646 493
Primary	15,7	52,6	31,8	100,0	17,3	64,0	18,6	100,0	3,4	2 889 042
Basic	18,3	48,2	33,5	100,0	23,3	59,1	17,7	100,0	6,4	607 189
Medium	20,6	50,4	29,0	100,0	28,2	52,8	19,1	100,0	6,6	599 476
Higher	20,5	57,1	22,4	100,0	35,1	56,7	8,1	100,0	4,8	216 106
Position in labour proceedings										
Self-employed/ Employer in agriculture/ fisheries	16,2	55,0	28,8	100,0	15,5	68,4	16,1	100,0	2,9	3 737 000
Self-employed/ Employer in non-agricultural activities	17,6	48,5	33,9	100,0	18,8	64,0	17,1	100,0	5,4	1 216 964
Civil servant or public company employee	25,4	57,6	17,0	100,0	32,8	58,0	9,2	100,0	4,6	423 287
Private sector worker	12,0	46,4	41,7	100,0	28,7	49,6	21,7	100,0	6,6	765 315
Other	18,6	48,6	32,8	100,0	23,7	54,9	21,4	100,0	4,9	4

Appendix 1: Classification of Levels/tiers for cook stoves

ATTRIBUTES		TIER 0	TIER 1	TIER 2	TIER 3	TIER 4	TIER 5
Cooking Exposure	Emission: Fuel	Firewood, dung, twigs, leaves, rice husks, processed biomass pellets or briquette, charcoal, kerosene				Biogas, ethanol, high quality processed biomass pellets or briquettes	Electricity, solar, LPG
	Emission: Stove Design	Three-stone fire, tripod, flat mud ring, traditional charcoal stove	Conventional or old generation Improved cooking solutions (ICS)	ICS+ chimney, rocket stove or ICS + insulation	Rocket stove with high insulation or with chimney, advanced insulation charcoal stoves	Rocket stove with chimney (well-sealed), Rocket Stove gasifier, Advanced secondary air charcoal stove, forced air	
	Ventilation: Volume of Kitchen	Less than 5 m3	More than 5 m3	More than 10 m3	More than 20 m3	More than 40 m3	Open air
	Ventilation: Structure	No opening except for the door	1 window	More than 1 window	Significant openings (large openings below/ above door-height	Veranda or a hood is used to extract the smoke	Open air
	Alternative proxy: Ventilation level	Bad			Average	Good	
	Contact Time	More than 7.5 hours	Less than 7.5 hours	Less than 6 hours	Less than 4.5 hours	Less than 3 hours	Less than 1.5 hours
Cookstove Efficiency	ISO's Vol. Performance Targets (TBC)	Less than 10	More than 10	More than 20	More than 30	More than 40	More than 50
Convenience	Fuel acquisition (collection or purchase) and	More than 7 hours		Less than 7 hours	Less than 3 hours	Less than 1.5 hours	Less than 0.5 hour

Appendix 2: Glossary

Statistical terminology

COLLECTIVE ACCOMMODATION Accommodation where a large group of people or more than one household live, either temporarily or permanently.

ECONOMIC ACTIVITY The result of combining productive factors (labour, raw materials, equipment, etc.) to produce goods and services.

EMPLOYMENT The set of functions and tasks that an individual performs at their place of work, regardless of the branch of economic activity in which the work is carried out and the relationships they establish with other productive and social agents, determined by their position in the labour process.

ENUMERATION AREA (EA) Well-defined geographical area (urban or rural) used in the sampling process.

HEAD OF HOUSEHOLD Person responsible for the household or the person who for the purposes of the survey or census is indicated/recognised as such by the other members. Usually it is a man, if the household has a male adult member.

HOUSEHOLD A group of people living in the same dwelling, whether or not they are related, who may occupy all or part of the dwelling and whose expenses for meeting essential needs are borne partly or wholly jointly.

HOUSEHOLD MEMBER Any individual who fulfils the following conditions in particular: a person who usually lives in the accommodation and is present during the observation period; a person who is temporarily absent, provided that they are responsible for expenses and/or contribute to the common budget and are not present for longer than the period previously defined.

HOUSEHOLD RESPONDENT The person chosen to be the main respondent during the interview - usually the head of the household or the one most knowledgeable of the topic at hand present. At least 15 years old

MAIN ECONOMIC ACTIVITY Activity that represents the greatest importance in the set of activities carried out by a statistical observation unit.

POPULATION All the individuals or people living in a given country or geographical area of a country. The term population can also refer to people from different areas of the country's socio-economic organisation (school population, working population, etc.).

PROBABILISTIC SAMPLE A sample of units, selected according to a sampling design where each unit has a known, non-zero probability of selection.

REFERENCE PERIOD The period of time to which the information refers. It can be one-off (a specific day, or the situation five years ago) or a time interval (e.g. month, fiscal year, calendar year).

SAMPLE Part of the population selected in order to make statistical inferences, i.e. a subset of a Population or Universe.

SAMPLE SURVEY A statistical operation in which only part of the population is observed, using a sampling method.

SELF-EMPLOYED Includes people who, in carrying out their activities, do so without the need for employment and whose income from their work accrues to them.

STATISTICAL OPERATION Statistical activity, within the framework of a pre-defined statistical methodology, encompassing the collection, processing, tabulation, analysis, study and dissemination of data concerning the characteristics of a population.

STATISTICAL UNIT An element of the target population for which statistical information is to be obtained.

Energy related terminology

AC - Alternating current. Electric current that reverses direction periodically. It usually comes from the electricity grid, generators or inverters

Air conditions (AC) - Electrical device used to cool the air

Blackout - Suddenly less voltage than normal in the electricity supply

Charging capacity - Generally expressed as the product of 20 hours multiplied by the current that a new battery can supply consistently for 20 hours at a temperature of 200ºC, while remaining above a specified terminal voltage per cell. Measured in watt-hours (Wh) or ampere-hours (Ahr). For example, a 12-volt battery with a capacity of 100Ah allows energy storage of approximately 100 Ah x 12 V = 1,200 Wh or 1.2 kWh. The Ah is usually printed on the battery.

Connection fee - Fee paid for the household / service / company to be connected to an electricity network (national or private)

Cooker model - Brand / type name / features

Dry cell batteries - A dry cell battery has the electrolyte immobilised as a paste, so it can be moved around easily. For example, a zinc-carbon bacterium

Electric heater / boiler - Electrically heated storage tank for water

Electric kettle / coil - Kettle with built-in electric coil heater / electric coil heater to be submerged in a kettle

Electric meter - Device that measures electricity consumption (kWh)

Electricity network - Electricity distribution network (cables on poles or in the ground)

Ethanol - Chemical compound, simple alcohol (C2H5OH)

Insulated or concealed electricity - Insulated electrical cables / wiring versus bare / unprotected exposed metal wiring

Internal wiring - Electrical cables inside the home / business etc.

Interruption / Black-out - Sudden and complete loss / disconnection of the electricity supply

LED lights / bulbs - Light Emitting Diode

Load shedding - A continuous blackout / an intentionally engineered power shutdown

Local grid/Mini-grid - Connected to a local electricity distribution grid involving small-scale electricity generation

Low / high voltage - lower / higher voltage than normal fluctuations

Manufactured cooker - Stove produced by professional industry

National electricity grid - Connected to the national electricity distribution grid

Pico-hydro - Hydroelectric power generation below 5kW (small-scale production unit)

Rechargeable Battery - An electric battery that can be used and recharged many times over

Solar home system - Autonomous photovoltaic electricity supply system for a home / residence

Solar lighting product - Products for domestic / small-scale lighting based on solar electricity - usually enough for a few LED bulbs

Solar multi-light system - Products for domestic / medium-scale lighting (many lamps) and for other electricity-consuming devices (TV, etc.) based on solar energy

Solar panel energy rating - Efficiency (actual production as a percentage of total energy production capacity) of a solar panel.

Solar thermal system - System for concentrating sunlight to produce the high-temperature heat needed to generate electricity. Consists of a reflector/mirror and a receiver.

Watt (W) - Watt is a measure of the rate of energy transfer over a unit of time; one watt is equal to one joule (J) per second.

Watt-hour (Wh) – One watt-hour is equivalent to one watt of power used for one hour.

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