

# SOUTHMOD

Country report

# Mozambique

MOZMOD v3.0

2015–2023

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## About the project

### [SOUTHMOD – simulating tax and benefit policies for development](#)

SOUTHMOD is a joint project between the United Nations University World Institute for Development Economics Research (UNU-WIDER), Southern African Social Policy Research Insights (SASPRI), and the International Inequalities Institute at the London School of Economics and Political Science (LSE) in which tax-benefit microsimulation models for selected developing countries are being built. These models enable researchers and policy analysts to calculate, in a comparable manner, the effects of taxes and benefits on household incomes and work incentives for the population of each country.

SOUTHMOD models are currently available for Bolivia (BOLMOD), Colombia (COLMOD), Ecuador (ECUAMOD), Ethiopia (ETMOD), Ghana (GHAMOD), Mozambique (MOZMOD), Peru (PERUMOD), Rwanda (RWAMOD), Mainland Tanzania (TAZMOD), Uganda (UGAMOD), Viet Nam (VNMOD), Zambia (MicroZAMOD), and Zanzibar (ZANMOD). SOUTHMOD models are updated to recent policy systems using national household survey data. This report documents MOZMOD, the SOUTHMOD model developed for Mozambique. This work was carried out by the Ministry of Economy and Finance of Mozambique in collaboration with the project partners.

The results presented in this report are derived using MOZMOD version 3.0, which is part of the SOUTHMOD bundle (SOUTHMOD\_A2.0) and runs on EUROMOD software. The report describes the different tax–benefit policies in place, how the microsimulation model picks up these different provisions, and the database on which the model runs. It concludes with a validation of results against external data sources. For further information on access to MOZMOD and other SOUTHMOD models, see the [SOUTHMOD page](#), [SOUTHMOD Modelling Conventions](#), and [SOUTHMOD User Manual](#) (UNU-WIDER 2024a; 2024b).

The MOZMOD model and its documentation in this country report has been prepared within the UNU-WIDER project [SOUTHMOD – simulating tax and benefit policies for development \(Phase 3\)](#), which is part of the [Domestic Revenue Mobilization](#) programme Phase II. The programme is financed through specific contributions by the Norwegian Agency for Development Cooperation (Norad).

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## Acronyms

BSSP	Basic social subsidy programme ( <i>Programa do Subsídio Social Básico</i> ), a sub-programme of DSA
CPI	Consumer price index
DRD	Data requirement document
DSA	Direct social action ( <i>Acção Social Directa</i> )
DSSP	Direct social support programme ( <i>Programa Apoio Social Directo</i> ), a sub-programme of DSA
FYA	Full-year adjustment
GdM	Government of Mozambique ( <i>Governo de Moçambique</i> )
INAS	National Institute of Social Action ( <i>Instituto Nacional de Acção Social</i> )
INE	National Institute of Statistics ( <i>Instituto Nacional de Estatística</i> )
IOF	Household Budget Survey ( <i>Inquérito aos Orçamentos Familiares</i> )
IRPS	Personal income tax ( <i>Imposto sobre o Rendimento das Pessoas Singulares</i> )
ISPC	Simplified tax ( <i>Imposto Simplificado para Pequenos Contribuintes</i> )
MGCAS	Ministry of Gender, Children and Social Action ( <i>Ministério do Género, Criança e Acção</i> )
MMAS	Ministry of Women and Social Action ( <i>Ministério da Mulher e Acção Social</i> )
Mt	Metical
NBSSS	National basic social security strategy ( <i>Estratégia Nacional de Segurança Social Básica</i> )
NISS	National Institute of Social Security ( <i>Instituto Nacional de Segurança Social</i> )
PASP	Productive Social Action Programme ( <i>Programa Acção Social Produtiva</i> )
PdM	Parliament of Mozambique ( <i>Parlamento de Moçambique, ou Assembleia da República</i> )
PSU	Primary sampling unit
UNDP	United Nations Development Programme
VAT	Value-added tax ( <i>Imposto sobre o Valor Acrescentado</i> )

# 1 Basic information

## 1.1 Basic information about the tax–benefit system

Mozambique is defined as a low-income country by the World Bank and a low-human-development country by the United Nations Development Programme (UNDP) but has experienced rapid growth for more than two decades, averaging 7.9 per cent between 1993 and 2015—among the highest in sub-Saharan Africa (World Bank 2021). This trend was interrupted, and the economic growth fell to an average of 2.4 per cent<sup>1</sup> in 2016–21 due to a combination of natural disasters, the COVID-19 pandemic, and the revelation of undisclosed debts which led to a crisis of economic governance. There is a strong commitment to reducing the levels of poverty in Mozambique. For example, Mozambique’s National Development Strategy 2015–35 commits to providing social security to 75 per cent of poor and vulnerable households by 2035 (United Nations Mozambique 2015: 13).

The official age at which people may start to work in Mozambique is 18 years (PdM 2007a, 2007c).<sup>2</sup> The Labour Law allows young people aged 15–17 years to work, as long as they do not work more than 38 hours a week and 7 hours a day.

Female workers are entitled to state pension at the age of 55 years and male workers at the age of 60 years, or after 35 working years (PdM 2009a).

Children start school at the age of six years.<sup>3</sup> The new law of the National Education System defines six years of primary education as the minimum number of schooling years (PdM 2018).

The fiscal year runs from 1 January to 31 December.

Main taxes such as on personal income, corporate income, value added, excise and customs duties are defined by common laws at the national level (GdM 2002; PdM 2009b, 2009d, 2012a, 2012b, 2012c, 2013). For specific local taxes, rates may vary among municipality categories, such as the case of personal municipal tax (GdM 2008a, 2008c).

The personal income tax *Imposto sobre o Rendimento das Pessoas Singulares*<sup>4</sup> (IRPS) law 33/2007 defines dependent members of the family as those below 18 years according to Labour Law and those up to 25 years who are working and earning less than the annual highest minimum salary, or are also studying or in the military service (PdM 2007b, 2007d). Other specific categories apply to this definition of dependent members of the family.

The IRPS law approved in 2007 was revised in 2013. Therefore, for the cases where tax calculation has changed both periods will be mentioned: ‘up to 2013’ and ‘from 2014 onwards’. Up to 2013, income tax for a couple was calculated jointly (ACIS et al. 2011a). For applying a tax rate, taxable income was divided by two as if it was calculated individually. After applying the tax rate, income tax was multiplied by two to obtain the joint income tax for the couple. From 2014 onwards, income tax is calculated individually, and not as a couple (PdM 2013).

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<sup>1</sup> Data calculated by National Institute of Statistics.

<sup>2</sup> PdM refers to ‘Assembleia da República’ in Mozambican publications.

<sup>3</sup> Children enroll in first grade if they turn six between 1 January and 30 June. Those who turn six between 1 July and 31 December enroll the following year.

<sup>4</sup> All foreign terms have been translated from Portuguese.

Up to 2013, different income sources were taxed using the same procedure. The calculation started with employment income tax, that is, income from salaries and wages. The other income sources were added up in the second stage of calculation. From 2014 onwards, employment income tax is calculated using a different procedure from income originated from other sources, such as self-employment, capital, property, and other.

Taxpayers need to file a tax return. Up to 2013, income tax was withheld by employers and paid to tax authorities. At the beginning of each fiscal year, taxpayers were expected to fill and submit a tax return on annual income referring to the previous fiscal year. Tax authorities would assess the tax return forms and decide the tax liability for each taxpayer, that is, if a taxpayer should pay any additional amount, be reimbursed, or be even.

From 2014 onwards, taxpayers still need to fill and submit tax returns. However, tax authorities do not change the tax liability status of each taxpayer. Withholdings match the exact amount due at the end of the fiscal year. The rates and amounts that should be paid are clearly defined, as well as the payment schedule.

Since 2015, taxpayers whose income derives from salaries and wages have not been required to submit a tax returns form.

Tax nominal values are adjusted periodically through updated legislation. For instance, tax values were set by Ministerial Diploma No. 109/2008 dated 27 November, Ministerial Diploma No. 243/2011 dated 12 October, and Ministerial Diploma No. 64/2013 dated 12 June (Ministry of Finance 2011; Sal & Caldeira 2013).

Lone parents do not receive special tax benefits, according to clause 18 of the IRPS law (PdM 2007d). The benefits accrue as the number of dependent family members increases (PdM 2013). People receiving a pension as retired workers, invalids, or surviving members of the family do not pay personal tax (PdM 2007d). Companies' expenditures on social services and leisure activities for workers are eligible for tax reductions.

The legal framework on social protection in Mozambique was approved by Law No. 4/2007 of 7 February. Under this law, the social security system is structured in three different levels: basic social security (*Segurança Social Básica*), compulsory social security (*Segurança Social Obrigatória*), and complementary social security (*Segurança Social Complementar*).

Further, the Government of Mozambique (*Governo de Moçambique*, GdM) approved the regulation of the basic social security sub-system (*Subsistema de Segurança Social Básica*) by Decree No. 85/2009 of 29 December. The approved regulation establishes the rights of the most vulnerable target groups and sets the types of benefits for those target groups:

- Risk allowances (*prestação de risco*): support in goods, products, payment services, and financial values to mitigate risks or ensure survival and regular monetary social transfers;
- Provision of social support (*prestação de apoio social*): social transfer for a fixed term and social insertion programmes through work.

For the operation of the regulation of the basic social security sub-system, GdM approved through the Resolution of Cabinet No. 17/2010 of 27 May the national basic strategy for social security (NBSSS, *Estratégia Nacional de Segurança Social Básica*) for the period 2010–14 (see GdM 2010).

Still, challenges exist despite the expansion of the coverage of basic social security programmes and the increase in budget allocated to social protection. The World Bank observed in 2012 that:

Generally, the major social assistance programs in Mozambique have low coverage relative to the number of individuals at risk. [ . . . ] Those who remain largely uncovered by the [social protection] system in Mozambique are poor families with children, young people, and the working poor, particularly those facing recurrent weather-related shocks. (World Bank 2012: 83)

Hodges and Pellerano (2010) undertook a detailed study of the social protection system for the United Nations Children’s Fund in Mozambique and highlighted the fragmented nature of provisions. Since then, the International Labour Organization and others have worked closely with GdM to further develop the vision for comprehensive social security (Cunha et al. 2013; United Nations Mozambique 2015). In addition, Mozambique is a flagship country for the One UN Initiative, which emphasizes the importance of coordination across different UN agencies when interacting with the government of a country. The collaborations around the development of a social protection floor are considered to be a ‘best practice’ example of this initiative (United Nations Mozambique 2015: 7).

More recently, the authorities have prepared a new strategy on basic social security: the NBSSS 2016–24. This was approved by the Council of Ministers in February 2016 at the Fifth Ordinary Session. The new strategy was intended to help realize GdM’s Five Year Programme for 2015–19 through the implementation of actions that will contribute to poverty reduction and ensure that the growth of the Mozambican economy benefits all citizens, especially those living in poverty, and prioritizes their social rights. Therefore, social security arrangements in Mozambique have been undergoing significant changes (United Nations Mozambique 2015). Most recently, the programmes were revised via Decree No. 47/2018 of August 6, and these revisions are included in the 2019–20 systems of MOZMOD and described below.

The means test for social assistance payments takes into account, among other things, both the individual’s and the household’s monthly income. The amounts of subsidies to be transferred to the beneficiaries are adjusted for inflation, and according to Decree No. 52/2011 of 12 October, the amount can be reviewed annually by the Council of Ministers.

## 1.2 Social benefits

The NBSSS operates in four key areas associated with specific institutional responsibilities. One key area that can be located most easily within the category of social benefits is direct social action (DSA, *Acção Social Directa*). DSA itself has three strands that are listed here, although the third strand is not strictly a social benefit.

**Benefit 1** (*Programa do Subsídio Social Básico*): The basic social subsidy programme (BSSP) includes unconditional regular cash transfers and is described in detail below.

**Benefit 2** (*Programa do Apoio Social Directo*): The direct social support programme (DSSP) consists of time-limited in-kind support for eligible households and is described in detail below. Additional support was provided as part of this programme due to the COVID-19 pandemic (*Programa do Apoio Social Directo Transferências directas pós-emergência, PASD-PE ‘Covid’*). This policy is not simulated after 2018 in MOZMOD v3.0.

**Benefit 3** (*Programa dos Serviços Sociais de Acção Social*): The programme of social services of social action consists of social welfare services, including provision of institutional assistance by providing shelter in social facilities such as crèches, elderly support centres, transit centres, child shelter centres, open centres, and shelter centres for abandoned individuals with severe deficiencies. It also includes social work activities in the communities with individuals living in the streets, children, the elderly, and

individuals with deficiencies. These services consist of psychosocial support, access to information, guidance, and family reunification. This policy was renamed PAUS (*Programa de Atendimento em Unidades Sociais*) in 2018. Additional support was provided as part of this programme due to the COVID-19 pandemic. This policy is not simulated within MOZMOD v3.0.

Coordination of DSA is the responsibility of the former Ministry of Women and Social Action (*Ministério da Mulher e Acção Social*, MMAS), now the Ministry of Gender, Children and Social Action (*Ministério do Género, Criança e Acção Social*, MGCAS), whereas the implementation is conducted by its subordinate institutions including the National Institute of Social Action (Instituto Nacional de Acção Social, INAS), civil society organizations, and faith-based organizations.

In 2018, Decree No. 47/2018 of August 6 introduced revisions to the social security arrangements. BSSP and DSSP were retained as initiatives, but the eligibility criteria were changed quite considerably; these changes are reflected in the 2019–20 systems of MOZMOD v3.0.

### 1.2.1 Not strictly benefits

The three remaining key areas of NBSSS are not strictly benefits and are described as follows.

**Not strictly benefit 1 (*Acção Social Escolar*):** The school social action fund covers actions that have the objective of promoting the participation of the most vulnerable pupils/students in the education system. The responsibility of implementing student welfare is that of the former Ministry of Education, now the Ministry of Education and Human Development (*Ministério da Educação e Desenvolvimento Humano*), in coordination with MGCAS and its subordinate institutions. This fund is payable to schools. This policy is not simulated within MOZMOD v3.0.

**Not strictly benefit 2 (*Acção Social da Saúde*):** Health social action includes actions with the objective of improving the quality of health of the most vulnerable populations, with special emphasis on promoting access to basic healthcare. The responsibility of implementation lies with the Ministry of Health (*Ministério da Saúde*) in coordination with MGCAS–INAS. This mainly consists of enabling pregnant women and the poor and elderly to receive treatment at health centres when they cannot pay the fee of Mt 1 per visit. This policy is not simulated within MOZMOD v3.0.

**Not strictly benefit 3 (*Programa Acção Social Produtiva*):** Productive social action was designed to cover activities that aim to promote the socioeconomic inclusion of vulnerable populations with the physical ability to work. The NBSSS suggested that it be drawn up as a National Programme for Productive Social Action that should include initiatives from different sectors. The coordinating responsibilities of this component are shared between MGCAS and other ministries. The public works are identified and managed by district and municipal governments. Eligibility is determined on the basis of a mix of community, household, and individual criteria, and Mt 650 was paid per month to participants. This policy was renamed the productive social action programme (PSAP) in 2018. It is not simulated within MOZMOD v3.0.

**Not strictly benefit 4 (*Electricity tariff reduction*):** This policy was introduced to support low-income people in 2020 during the COVID-19 pandemic. The support comprised a 50 per cent reduction in tariff for those on the 'social tariff' (using 0–125kw/hr at 1.07 Mt per kw) for the period of June to end December 2020.



## 1.3 Social contributions

**Social insurance contribution 1** (*Segurança Social para os trabalhadores do sector privado*): This social insurance programme is for individuals employed by the private sector or not-for-profit organizations and is managed by the National Institute of Social Security (*Instituto Nacional de Segurança Social*, NISS), which operates under the authority of the Ministry of Labour. The global rate of contributions is fixed at 7 per cent of gross income, of which 4 per cent is paid by the employer. Self-employees contribute 7 per cent of remuneration. Currently, the social security programme assigns the following benefits: (i) sickness grants, (ii) death grants, (iii) funeral allowance, (iv) old-age pension, (v) disability pension, (vi) survivor's pension, (vii) old-age allowance, (viii) hospitalization allowance, and (ix) maternity allowance. People covered by the Mozambican system remain eligible when they work abroad (paragraphs 1 and 2 of Article 04, Law No. 05/89 of 18 September).

**Social insurance contribution 2** (*Previdência Social para Funcionários de Aparelho do Estado*): This social insurance programme for employees in the public sector is currently governed by Decree No. 27/2010 of 12 August, which regulates the matter of social security in the civil service. The following benefits exist: (i) survivor's pension, (ii) so-called blood pension, (iii) allowance for death, (iv) extraordinary retirement for military, (v) retirement for old age or disability, (vi) medical and drug assistance for state employees, (vii) maternity leave, and (viii) licence in cases of chronic degenerative and mental illnesses. Civil servants contribute 7 per cent of their gross income. Pensions for people working in defence and security are mainly governed by Decree No. 3/86 of 25 July, approving the Regulation of Social Security and Reform of the Armed Forces of Mozambique. The process is part of a bisectorial structural relationship between the Ministry of Economy and Finance (MEF) and the Ministry of National Defence. The payments are made in relation to: (i) retirement and invalidity pension, (ii) survivor's pension, (iii) death benefit, (iv) blood pension, and (v) pension for exceptional and relevant services to the country. The beneficiaries of this pension scheme are veterans of the liberation struggle and permanent staff from the defence sector and their family members.

## 1.4 Taxes

Five different taxes are simulated in MOZMOD. The main taxes are personal income tax (i.e. IRPS) and value-added tax (*Imposto sobre o Valor Acrescentado*, VAT). Personal income tax has five income categories (see Barnes et al. 2016: 5). For the purposes of simulating IRPS in MOZMOD, wages and salaries are simulated as one policy (Tax 1) and the other four categories of income are simulated as one policy (Tax 3); however, tax on the capital gains element of 'capital income' is not simulated.

**Tax 1** (*Personal income tax: Employment*): This is a direct tax on employment income, that is, wages and salaries (GdM 2008a; PdM 2007d, 2013). It is applied at the individual level. From 2014 onwards, there are ten tax bands. An additional amount is applied which depends on the number of dependents and the tax band.

**Tax 2** (*Personal income tax: Simplified tax* [Imposto Simplificado para Pequenos Contribuintes, ISPC]): This is a direct tax on small businesses earning annual gross revenue equal to or smaller than Mt 2.5 million (PdM 2009b). The annual tax value to be paid is Mt 75,000 or a 3 per cent tax rate on total annual income. This category captures the taxable personal income for self-employed individuals.

**Tax 3** (*Personal income tax: Other income sources*): This is a direct tax on other personal sources of income such as large self-employment income and income from agriculture, property, interest, and other income (GdM 2008a; PdM 2007d, 2013).

**Tax 4** (*VAT*): VAT is an indirect tax on expenditure at the rate of 17 per cent. Different rates apply for utilities such as diesel, piped water, unpiped water, and electricity. The law considers a 5 per cent rate

for economic agents under the simplified regime (but this has not been implemented within MOZMOD).

**Tax 5** (*Excise tax* [Imposto sobre Consumos Especificos]): This is an indirect tax applied to domestic transactions and imports of goods considered as harmful for health or for higher-income earners and/or luxury goods such as tobacco, alcohol, and vehicles (Barnes et al. 2016; PdM 2009c). These taxes are defined as ad valorem and vary between 5 and 75 per cent.

**Tax 6** (*Fuel tax* [Taxa sobre os Combustiveis]): This is an ad valorem tax levied on fuel for motor vehicles.

The other taxes in the Mozambican system that are not simulated in MOZMOD are corporate income tax (*Imposto sobre o Rendimento das Pessoas Colectivas*), customs duties, property registration, inheritance and gift, tax on gambling, tax on petroleum products, stamp duty, national reconstruction, fishing licences, property transfer, royalties and surface tax, and municipality taxes (personal, vehicle, property, contribution for infrastructure improvement, levies for issuing operating licences, tariffs and charges for the provision of municipal services) (ACIS et al. 2011b; Barnes et al. 2016; Bolnick and Byiers 2009).

## 2 Simulation of taxes and benefits in MOZMOD

### 2.1 Scope of simulation

Table 2.1 shows two benefit policies simulated in MOZMOD.

**Table 2.1: Simulation of benefits in MOZMOD**

Variable name(s)	Treatment in MOZMOD										Why not fully simulated?
	2015	2016	2017	2018	2019	2020	2021	2022	2023		
Direct social support programme	<i>bot_s</i>	S	S	S	S	E	E	E	E	E	Only food baskets are simulated (2015–18)
Basic social subsidy programme	<i>bsadi_s</i>	S	S	S	S	S	S	S	S	S	—
<i>Acção Social Escolar</i>	/	E	E	E	E	E	E	E	E	E	Requires further details on eligibility
<i>Acção Social da Saúde</i>	/	E	E	E	E	E	E	E	E	E	Requires further details on eligibility
<i>Programa Acção Social Produtiva</i>	/	E	E	E	E	E	E	E	E	E	Requires further details on eligibility
Electricity tariff reduction	<i>bsaho_z</i>	/	/	/	/	/	S	/	/	/	Only in place in 2020 for a limited period

Note: 'S' policy is *simulated* although some minor or very specific rules may not be simulated. 'E' policy is *excluded* from the model.

Source: Authors' compilation.

Table 2.2 represents six tax policies and two social contribution policies.

**Table 2.2: Simulation of taxes and social contributions in MOZMOD**

	Variable name(s)	Treatment in MOZMOD									Why not fully simulated?
		2015	2016	2017	2018	2019	2020	2021	2022	2023	
Personal income tax											
Employment	<i>tin_s</i>	S	S	S	S	S	S	S	S	S	
Simplified tax	<i>ttn_s</i>	S	S	S	S	S	S	S	S	S	
Other income sources	<i>tin00_s</i>	S	S	S	S	S	S	S	S	S	
Value-added tax											
Value-added tax	<i>tva_s</i>	S	S	S	S	S	S	S	S	S	5% VAT rate is implemented for selected items in 2023 policy system
Excise duty and fuel tax											
Excise duty	<i>tex02_s</i> <i>tex03_s</i> <i>tex_s</i>	S	S	S	S	S	S	S	S	S	
Fuel tax	<i>tfl_s</i>	S	S	S	S	S	S	S	S	S	
Social insurance contribution											
Private sector (not self-employed)	<i>tscee_s</i> , <i>tscer_s</i>	S	S	S	S	S	S	S	S	S	
Public sector	<i>tscee02_s</i>	S	S	S	S	S	S	S	S	S	
Private sector (self-employed)	<i>tscee03_s</i>	S	S	S	S	S	S	S	S	S	

Note: 'S' policy is simulated although some minor or very specific rules may not be simulated.

Source: Authors' compilation.

## 2.2 Order of simulation and interdependencies

Table 2.3 presents the order of the main elements of the Mozambican system for 2015–23 for simulations.

**Table 2.3: MOZMOD spine: order of simulation**

Policy	MZ_2015	MZ_2016	MZ_2017	MZ_2018	MZ_2019	MZ_2020	MZ_2021	MZ_2022	MZ_2023	Description of the instrument and main output
uprate_mz	On	On	On	On	On	On	On	On	On	DEF: Uprating factors
neg_mz	On	On	On	On	On	On	On	On	On	DEF: Recode negative income to zero
lma_mz	Off	Off	Off	Off	Off	Off	On	Off	Off	DEF: Labour market adjustments due to COVID-19
ilsdef_mz	On	On	On	On	On	On	On	On	On	DEF: Standard income lists
ildef_mz	On	On	On	On	On	On	On	On	On	DEF: Model specific income lists
ildef_stats_mz	On	On	On	On	On	On	On	On	On	DEF: Stats Presenter income lists
ildef_exp_mz	On	On	On	On	On	On	On	On	On	DEF: Expenditure income lists (COICOP)
tundef_mz	On	On	On	On	On	On	On	On	On	DEF: Assessment units
constdef_mz	On	On	On	On	On	On	On	On	On	DEF: Constants
random_mz	On	On	On	On	On	On	On	On	On	DEF: Random number generator to dampen bot_s (DSSP) in 2015–18; and bsadi_s (BSSP) in 2019
spl_mz	On	On	On	On	On	On	On	On	On	DEF: On model poverty lines
ses_mz	On	On	On	On	On	On	On	On	On	DEF: On model equivalence scales
sic_mz	On	On	On	On	On	On	On	On	On	SIC: <i>Segurança Social</i> (private sector)
sic01_mz	On	On	On	On	On	On	On	On	On	SIC: <i>Previdencia Social</i> (public sector)
tin_mz	On	On	On	On	On	On	On	On	On	TAX: Personal income tax: Employment
ttn_mz	On	On	On	On	On	On	On	On	On	TAX: Simplified (a turnover tax)
sic02_mz	On	On	On	On	On	On	On	On	On	SIC: <i>Segurança Social</i> (self-employed)
tin00_mz	On	On	On	On	On	On	On	On	On	TAX: Personal income tax: Other income sources
bot_mz	On	On	On	On	Off	Off	Off	Off	Off	BEN: Direct SSP
bsadi_mz	On	On	On	On	On	On	On	On	On	BEN: Basic SSP
bsaho_mz	Off	Off	Off	Off	Off	On	Off	Off	Off	BEN: Electricity tariff reduction
tva_mz	On	On	On	On	On	On	On	On	On	TAX: Value-added tax
tex_mz	On	On	On	On	On	On	On	On	On	TAX: Excise duty
tfl_mz	On	On	On	On	On	On	On	On	On	TAX: Fuel tax
xhhadj_mz	On	On	On	On	On	On	On	On	On	DEF: Adjust consumption to new disposable income
output_std_mz	On	On	On	On	On	On	On	On	On	DEF: Standard output individual level
output_std_hh_mz	Off	Off	Off	Off	Off	Off	Off	Off	Off	DEF: Standard output household level

Notes: DEF, definitional policy; SIC, social insurance contribution policy; BEN, benefit policy.

Source: Authors' compilation.

## 2.3 Policy switches

This MOZMOD version has policy switches for DSSP (2015–18) and BSSP (2019) which adjust the simulations of these two benefits downwards (see validation section). In the previous model version, the BSSP switch was active for 2020–21 policy systems as well. Nevertheless, it has been retained exclusively for 2019 following a substantial improvement in simulation output based on the microdata from IOF 2019–20.

In addition, a full-year adjustment (FYA) policy switch is applied to two COVID-related policies in 2020, namely the temporary electricity tariff reduction and Basic SSP that was augmented during the pandemic.

The electricity tariff reduction modelled in the 2020 policy system was in place only for the duration of seven months during the 2020 calendar year. MOZMOD however generally simulates policies at a specific point in time, which is problematic when considering policies of limited duration. Using the standard point-in-time approach, the tariff reduction would be assumed to be effective throughout the whole calendar year. In MOZMOD v3.0, this is accounted for by applying ‘full-year adjustment’ to this policy. This ensures that the relevant fee reduction is scaled to reflect the number of months that the policy was available during the 2020 calendar year. The adjustment is applied by incorporating an extension switch called ‘Full Year Adjustment’ (FYA) to the policy. The FYA switch is set ‘on’ by default in the 2020 policy system. See Gasior et al. (2021) for details.

The FYA policy switch is also applied to the BSSP policy in the 2020 policy system, reflecting augmented payment amounts, equivalent to two months of usual payment, during the COVID-19 pandemic.

Note that income shocks from COVID in 2021 (‘Ima\_mz’ policy described in Section 3.2) and the FYA switch for COVID-related policies in 2020 should generally be switched either ‘on’ or ‘off’.

More details on the modelling of the two COVID-related policies are available in the dedicated sub-sections (1.2, 2.4.2, and 2.4.3). Section 3.2 describes the ‘on-model’ adjustment of incomes during the pandemic.

Lastly, there is also a switch to adjust the simulations of simplified tax for selected years (2015 and 2019) downwards. This is switched off but could be applied or extended to additional years by the user if wished.

## 2.4 Social benefits

### 2.4.1 Direct social support programme (bot\_s)

The DSSP is a sub-programme of the DSA. It consists of in-kind subsidies, usually food boxes, for a fixed period in response to various situations of vulnerability.

**Definitions** (applicable only to 2015–18 inclusive)

Child-headed households: aged 12–17 years, inclusive.

Elderly: aged 55+ years if female or 60+ years if male.

Acute malnutrition: insufficient weight to height for children below 5 years of age.

Dependent children: children aged below 18 years.

### **Eligibility conditions** (applicable only to 2015–18 inclusive)

There is a three-stage screening process. First, target groups are identified consisting of the following groups (for 2015 to 2018 inclusive):

- Child-headed households;
- Households containing someone with a chronic and degenerative disease in bedridden condition;
- Households containing at least one child aged below 5 years recovering from acute malnutrition;
- Households whose working-age members all have temporary incapacity for work up to a maximum of 18 months;
- Individuals in the process of social and family reintegration at the moment of reuniting with the family;
- Individuals suffering from HIV/AIDS under anti-retroviral treatment up to 6 months;
- Malnourished pregnant women.

Second, a residence test is undertaken as follows:

- The applicant must be a resident at the location where s/he is requesting assistance and must be confirmed to be such by the local administration authority. The means of verification is a statement from the local administration authority and a visit to the residence.

Third, an income test is undertaken (see below, applicable only to 2015–18 inclusive).

### **Income test** (applicable only to 2015–18 inclusive)

The income test takes into account income from wages and remunerations, or self-employment business, or pension fund. Means of verification include an income statement from the employer, expenditure receipts, and a pensioner identity card. In the case of self-employment income, other indicators could be used to estimate the income level: type of activity, period of work, quantity of output, revenues, profits, and prices.

A two-stage means test is applied first at the level of the individual and then at the level of the household. The income of the applicant has to be equal to or lower than one-third of the national minimum wage; this same criterion is applied to the household by dividing the household-level income by the number of people in the household.

Minimum wages for certain sectors are issued every year by the Ministry of Labour based on tripartite negotiations of the Labour Consultative Council. The sector of 'public administration, including the defence and security forces' is used for calculations. The income test was set at Mt 1,061 per month in 2015, Mt 1,099.33 per month in 2016, and Mt 1,332 per month in 2017 (INE 2017: 105; WageIndicator Foundation 2017).

### **Benefit amount and duration** (applicable only to 2015–18 inclusive)

The benefit is usually provided in the form of food kits. However, this programme can comprise in-kind supply of other goods and services required by a specific household, such as repairs to the house or the costs of medication.

For the years 2015–18 inclusive, provision of monthly food kits depended on household size. The average amounts for 2015, 2016, 2017, and 2018 were as follows:

- One person in household: Mt 630 per month;

- Two to three people in household: Mt 1,390 per month;
- Four or more people in household: Mt 2,385 per month.

The DSSP usually runs for a period of two years but may run for longer if a child heads the household or if a child suffers from chronic malnutrition.

### **MOZMOD notes**

Using the Household Budget Survey (*Inquérito ao Orçamento Familiar*, IOF) it was not possible to identify the last three target groups (reuniting families, people on anti-retroviral treatment, and malnourished pregnant women) for the years 2015–18 inclusive.

As the state of having a ‘chronic and degenerative disease and being in a bedridden condition’ is not measured in the IOF, this category was identified by selecting people defined as being ‘paralytic’ in the IOF. This significantly underestimated the number of people in this target group for the years 2015–18 inclusive.

The residence test could not be applied in MOZMOD.

The average values of food kits were assigned to households identified as eligible in MOZMOD, on the basis of the household size for the years 2015–18 inclusive.

As the simulated cost of the programme far exceeded the actual expenditure on the programme (based on the external validation data), a switch was introduced in this policy which randomly restricted the allocation until the simulated cost of the programme corresponded to the actual expenditure for the year 2016 for the years 2015–18 inclusive.

Following the revisions to DSSP in 2018 (Decree No. 47/2018 of August 6), the policy contains two components: i) the so-called ‘Multiform Support’ comprising not just the food basket, but also some housing compensation, and breast milk substitutes if needed; ii) and social transfers following an emergency such as a natural disaster. As only the food basket was simulated in the DSSP in MOZMOD, and the eligibility criteria for these had been narrowed, the policy was switched off in the 2019–23 systems of MOZMOD v3.0.

### **2.4.2 Basic social subsidy programme (bsadi\_s)**

The BSSP is a sub-programme of the DSA. This programme was called the ‘food subsidy programme’ (*Programa Subsídio de Alimentos*) until 2010 and had run since 1990 (IPC-UNDP 2016). The focus of the programme in 2015–19 was on low-income households with a household member who is permanently unable to work due to age, chronic illness, or disability, but this focus was broadened in scope when the policy was revised, as reflected in the 2019 system. The BSSP is in operation in all districts and administrative posts in the country, but there are geographical gaps in coverage.

#### **Definitions** (applicable only to 2015–18 inclusive)

Elderly: aged 55+ years if female or 60+ years if male (RdM 2002).

Permanent incapacity for work: this reflects a situation that will not change, and can be the result of a chronic illness, accident, or disability.

Deficiencies: this applies to someone who, because of congenital or acquired anatomical, physiological, sensory, or mental anomalies, is at a disadvantage or unable, through physical and/or social barriers, to undertake normal activities (RdM 2009).

For a person to be considered as having a chronic or degenerative disease they need a medical certificate. This categorization is applied to five clinical situations:

- Hypertension (>140/95) in need of permanent medication control with antihypertensive and/or diuretics;
- Any type of epilepsy that requires permanent anti-epileptic medication;
- Patients suffering from periodic bouts of asthma who cannot afford anti-asthmatic medication;
- Chronic renal failure characterized by blood levels of creatinine (>134 Hmol/l) and the need for ongoing medication due to complications such as anaemia and hypertension;
- Diabetes mellitus characterized by high glucose blood levels and patients who cannot afford medication for treatment.

**Eligibility conditions** (applicable only to 2015–18 inclusive)

There is a three-stage screening process. First, target groups are identified consisting of the following groups (for 2015–18):

- Elderly with permanent incapacity for work, living alone, or heading a family in need of support;
- Individuals with deficiencies who have a permanent incapacity for work, who are aged 18+ years, and are living alone or heading a family in need of support;
- Individuals with chronic and degenerative diseases who are not bedridden but have a permanent incapacity for work, who are aged 18+ years, and are living alone or heading a family in need of support.

The revised policy has a broader set of target groups comprising (for 2019–23):

- Elderly with permanent incapacity for work;
- Disabled people unable to work;
- People with a chronic and degenerative disease, permanently bedridden;
- Malnourished children aged 0–2 inclusive;
- Orphans aged 14–18 inclusive heading the household;
- Orphaned children living in poverty.

Second, a residence test is undertaken as follows:

- The applicant must have been resident at the location where s/he is requesting assistance for more than 6 months and must be confirmed to be such by the local administration authority. The means of verification is a statement from the local administration authority.

Third, an income test is undertaken (see below).

#### **Income test**

As with DSSP, the income test for BSSP takes into account income from wages and remunerations, self-employment business, or pension fund. Means of verification include an income statement from the employer, expenditure receipts, and a pensioner identity card. In the case of self-employment income, other indicators could be used to estimate the income level, including type of activity, period of work, quantity of output, revenues, profits, and prices.

A two-stage means test is applied first at the level of the individual and then at the level of the household. The income of the applicant has to be lower than one-third of the national minimum wage; this same criterion is applied to the household by dividing the household-level income by the number of people in the household.



Minimum wages for certain sectors are issued every year by the Ministry of Labour based on tripartite negotiations of the Labour Consultative Council. As with DSSP, the sector of 'public administration, including the defence and security forces' is used for calculations.

### **Benefit amount**

Household monthly subsidy values received in 2015–18 inclusive (INAS 2015) were as follows:

- One person in household: Mt 310 per month;
- Two people in household: Mt 390 per month;
- Three people in household: Mt 460 per month;
- Four people in household: Mt 530 per month;
- Five or more people in household: Mt 610 per month.

Following the change to the policy in 2018, the household monthly subsidy received also changed in 2019 (ongoing) to:

- One relevant person in household: Mt 540 per month;
- Two relevant people in household: Mt 640 per month;
- Three relevant people in household: Mt 740 per month;
- Four relevant people in household: Mt 840 per month;
- Five relevant or more people in household: Mt 1000 per month.

The total number of relevant people is calculated as the total number of people of all ages in the household minus the number of women aged 18–54 inclusive and men aged 18–59 inclusive with the capacity to work.

In 2020 the payment amount was augmented to provide additional support (equivalent to two months of usual payment) due to the COVID-19 pandemic.

### **MOZMOD notes**

Proxies had to be constructed for the 'chronic and degenerative diseases but not bedridden' status and for people with 'deficiencies with permanent incapacity to work', using information from the IOF. The IOF did not contain sufficiently nuanced sickness/disability questions to enable these proxies to be very precise.

Permanent incapacity for work for those aged 55+ years (female) or 60+ years (male) was identified using a broader proxy flag.

The residence test could not be applied in MOZMOD.

A switch was included to dampen the simulated expenditure of BSSP in 2019 in order to more closely align with the actual expenditure on this benefit.

The augmented payment was included in 2020 in the model as part of the FYA switch.

### **2.4.3 Electricity tariff reduction (bsaho\_s)**

This policy was introduced to support low-income people in 2020 during the COVID-19 pandemic. The support comprised a 50 per cent reduction in tariff for those on the 'social tariff' (using 0–125kw/hr at 1.07 Mt per kw) for the period of June to end December 2020.

## **MOZMOD notes**

This policy was included in 2020 in the model as part of the FYA switch, where it is adjusted to be available for seven months only.

### **2.4.4 Employee social contributions: 'Social insurance contribution' (private or not-for-profit organizations)**

#### **Liability to contributions**

Employees of any private company or of a not-for-profit organization have to be registered at NISS in order to contribute to the pension fund.

#### **Income base used to calculate contributions**

Gross monthly income is the basis for calculating the contributions for the pension fund. There is no upper limit cap.

#### **Contribution rates**

Each employee should contribute 3 per cent of his/her own gross monthly salary.

### **2.4.5 Employer social contributions: 'Social insurance contribution' (private or not-for-profit organizations)**

#### **Liability to contributions**

Any private company or not-for-profit organization has to register employees at NISS in order to contribute to the pension fund.

#### **Income base used to calculate contributions**

Gross monthly income of the employee is the basis for calculating the contributions for the pension fund.

#### **Contribution rates**

Employers should contribute 4 per cent of the employee's gross monthly salary.

### **2.4.6 Self-employed social contributions: 'Social insurance contribution'**

#### **Liability to contributions**

Self-employed individuals can register at NISS to contribute to the pension fund.

#### **Income base used to calculate contributions**

Gross monthly income is the basis for calculating the contributions for the pension fund.

#### **Contribution rates**

Each self-employed individual registered at the NISS should contribute 7 per cent of his/her own gross monthly income.

### **2.4.7 Employee social contributions: 'Social insurance contribution' (public sector)**

#### **Liability to contributions**

Employees in the public sector must contribute to the pension fund.

## **Income base used to calculate contributions**

Gross monthly income is the basis for calculating the contributions for the pension fund. There is no upper limit cap.

## **Contribution rates**

Each employee should contribute 7 per cent of his/her own gross monthly salary.

## **2.5 Personal income tax**

### **2.5.1 Tax unit**

Individuals residing in Mozambique or receiving income in this country are liable to personal income tax on their worldwide income.

The tax unit became the individual for the purposes of taxable income calculations from 2014 onwards (PdM 2013). Nevertheless, the tax calculations take into account the presence of dependents within the family (elaborated below). All other income earners in a family have their taxes calculated and paid individually.

For the period before 2014, income tax for a couple was calculated jointly (ACIS et al. 2011a; PdM 2007d). All other income earners in the family had their taxes calculated and paid individually; that is, the individual was the tax unit.

### **MOZMOD notes**

For personal income tax from employment: it is applied at the individual level, with reference to a dedicated definition of the family (defined in the model as a tax unit called 'family 2') in order to take into account amounts linked to the number of dependents of that taxpayer.

For personal income tax from other income sources: again, this policy is applied at the level of the individual, with reference also to the number of dependents of that taxpayer (family 2).

### **2.5.2 Exemptions**

Following Verbist (2004), we define exemptions as 'income components (that) are part of pre-tax income, but do not have to be declared to the tax authorities, and thus are not included in the concept of taxable income (e.g. child benefits in most countries)'.

From 2014 onwards, pension and death subsidies are not subject to personal income tax (PdM 2013: Clause 7).

### **2.5.3 Tax allowances**

In 2015, there were no tax allowances. Before 2014, taxable income was deducted in the following situations (Barnes et al. 2016; PdM 2007d):

- Employment income was deductible by the amount of labour union contributions and compensation by employee to employer when terminating unilaterally the employment contract.
- The following contributions were deducted from taxable income:
  - a Pension, invalidity, or survival;
  - b Social benefits and leisure activities;
  - c Professional training.

## 2.5.4 Tax base

The Mozambican IRPS law considers five income categories:

- Wages and salaries;
- Income from companies and professional activities, including from self-employment;
- Capital income and gains, including distributed interests and profits, revenues from property sales;
- Real estate income, including property rents;
- Other sources of income like lottery.

From 2014 onwards, the tax base is defined for the following three cases:

### **Personal income tax base 1: Employment personal income tax**

Tax base is defined as the income from dependent work minus the lower limit at a given tax band.

### **Personal income tax base 2: Self-employment personal income tax (simplified tax)**

Tax base is defined as the gross revenue (turnover) below a threshold of Mt 2.5 million.

### **Personal income tax base 3: Other personal income tax**

Tax base is defined as the sum of all other income sources minus a non-taxable minimum value of Mt 225,000 per year.

Other income includes non-agricultural self-employment income from large producers (industry and commerce), agricultural self-employment income from large producers, income from capital including interest, property income excluding land, and all other income sources such as lottery.

Note that Clause 54 of the IRPS Law No. 33/2007 mentions the marginal tax rates ('Other personal income tax' case for 2015). However, the templates available to the public to calculate the tax liability, and the formula for the calculation of 'Employment personal income tax' case for 2015 indicate that the calculation is done by applying only one tax rate for the respective tax band (Fumo 2012: 116).

## Tax schedule

### Tax schedule for 2015–23

#### Income tax schedule 1: Employment personal income tax

Table 2.4 shows the income tax schedule for personal income tax (employment).

**Table 2.4: Income tax schedule 1: employment personal income tax**

Gross monthly taxable income, in Meticais (intervals)	IRPS value to be retained, according to number of dependent family members (Meticais)					Tax rate (coefficient)
	0	1	2	3	≥4	
≤20,249	—	—	—	—	—	—
20,250–20,749	0	—	—	—	—	0.10
20,750–20,999	50	0	—	—	—	0.10
21,000–21,249	75	25	0	—	—	0.10
21,250–21,749	100	50	25	0	—	0.10
21,750–22,249	150	100	75	50	0	0.10
22,250–32,749	200	150	125	100	50	0.15
32,750–60,749	1,775	1,725	1,700	1,675	1,625	0.20
60,750–144,749	7,375	7,325	7,300	7,275	7,225	0.25
≥144,750	28,375	28,325	28,300	28,275	28,225	0.32

Notes: 'Tax rate (coefficient)' means that the value of 0.10 in the table represents a 10 per cent tax rate; '—' represents 'not applicable' (for an explanation of the latter, see PdM 2013).

Source: PdM (2013).

#### Income tax schedule 2: Self-employment personal income tax (simplified regime)

Self-employment agents earning an amount equal to or less than Mt 2.5 million are taxed at a single rate of 3 per cent per year.

#### Income tax schedule 3: Other personal income tax

Table 2.5 shows the income tax schedule for personal income tax (other).

**Table 2.5: Income tax schedule 3: other personal income tax**

Gross annual taxable income, in Mt (intervals)	Tax rates (%)	Rebate (Mt)
0–42,000	10	—
42,001–168,000	15	2,100
168,001–504,000	20	10,500
504,001–1,512,000	25	35,700
>1,512,000	32	141,540

Note: '—' represents 'not applicable' (for an explanation, see PdM 2013).

Source: PdM (2007d).

## 2.6 Indirect tax

### 2.6.1 VAT

#### Tax unit

The tax unit is the household. VAT is simulated based on family purchases of goods and services.

#### Exemptions

VAT-exempted transactions are summarized here (Barnes et al. 2016; GdM 2008b; PdM 2007e, 2009d, 2012b).

Health-related transactions:

- Health and sanitary services provided in hospitals, health centres, and related facilities;
- Provision of health equipment to patients;
- Transmission of human organs, blood, and milk;
- Transportation of patients;
- Provision of mosquito nets;
- Provision of medicines.

Provision of goods and services by public or not-for-profit entities:

- Social assistance and provision of related goods;
- Security services;
- Care services for children, people with deficiencies, and elderly;
- Artistic and sports activities;
- Visits to museums, parks, and similar sites;
- Spiritual assistance;
- Activities developed by associations of various natures.

Education and professional training services:

- General education services;
- Professional training;
- Personal training.

Other services:

- Bank and financial services;
- Housing renting (residential);
- Insurance and related services.

Provision of goods and services related to agricultural, forestry, livestock and fishing activities, including basic transformation developed at production areas, are also VAT exempted.

Transactions of other goods and services that are VAT exempted:

- Gambling and social entertainment;
- Cultural and artistic activities;
- Maize flour, rice, bread, iodate salt, powder milk for babies up to 1 year of age, wheat, wheat flour, natural or frozen tomato, potato, onion, frozen horse mackerel, illumination oil, jet fuel, common bicycles, and condoms;
- Transactions of military equipment and materials for the army;

- Transactions of feed products, including raw materials for feed production;
- Transactions of equipment, seed, fertilizers, and all production inputs (see list in Annex 1 of PdM 2007e);
- Transactions of medicines for livestock;
- Stamps to be used by the post office services;
- Public garbage services.

Transactions of goods and services that were VAT exempted until 31 December 2015:

- Sugar;
- Raw materials, intermediate goods, equipment, parts, and spare parts utilized in sugar production;
- Edible oil and soaps;
- Other products resulting from the activity developed by edible oil and soap producers;
- Raw materials used by edible oil and soap industries;
- Transactions of goods and services related to agricultural production of sugar cane for the industry.

VAT exemptions on imports are listed in the laws and regulations (GdM 2008b; PdM 2007e, 2012b). Exports of goods and services, similar transactions, and international transportation using national territory are VAT exempted. Special customs and fiscal regime (e.g. for rapid development zones, industrial free zones, and special economic zones) and extraction of mineral resources, natural gas, and oil are regulated in specific legislation. In addition, the 2022 revision added the expenditure on iron bicycles with up to four speeds and garbage removal services to the list of exemptions when carried out by public entities contracted by public entities.

As of 2023, the 5 per cent VAT rate applies to various previously exempted expenditures, including medical services from private healthcare providers, education and vocational training services by private entities, and banking, financial, insurance, and reinsurance transactions and services.

Special cases regarding taxable income, for VAT purposes, include:

- Fuel products, the 'tax on fuel' is not included in taxable income;
- Electric energy, taxable income is calculated on 62 per cent of invoice value;
- Aeronautical taxes, taxable income is calculated on 85 per cent of invoice value;
- Roads, bridges, water supply infrastructure, and rural electricity construction and rehabilitation public works, 60 per cent is deducted from the tax value;
- Diesel, 50 per cent of the tax value is deducted.

### **Tax base**

VAT is applied to transactions of goods and services in the national territory and to imports.

### **Tax schedule**

For several years, the VAT rate remained at 17 per cent (GdM 2008b; PdM 2007e, 2009d, 2012b). However, the standard VAT rate reduced to 16 per cent in 2023. Economic agents under the simplified tax regime are taxed at a rate of 5 per cent. VAT is applied both on domestic transactions and on imports. There are also separate VAT rates for piped water, unpiped water, electricity, and diesel.

### **MOZMOD notes**

It was not possible to simulate the 5 per cent VAT policy for economic agents under the simplified tax regime.

## 2.6.2 Excise duty

### Tax unit

The tax unit is the household. Excise duty is simulated on purchases of certain goods.

### Tax base and schedule

A simplified list of goods is presented here for each level of excise tax rate (for details, see PdM 2009c):

- 5 per cent: electric spark vehicles with engine cylinders between 1,000 and 1,500 cm<sup>3</sup>, diesel and semi-diesel vehicles with engine cylinders with less than 1,500 cm<sup>3</sup>;
- 10 per cent: roots and tuber beer;
- 15 per cent: cheap costume jewellery, special vehicles for golf fields and similar uses, motorcycles with engine cylinders between 250 and 500 cm<sup>3</sup>, trailers for housing or camping, flowers and related articles made of plastic or other materials, shampoos, coins not in use;
- 30 per cent: feed for cats and dogs, perfume, eau de toilette, cosmetic products for the skin, lacquer and similar products, after-shave, bath minerals, deodorants, garments made of animal skin, cargo vehicles, guns and rifles including of air and gas, paintings, drawings, pictures, sculptures, antiques older than 100 years;
- 35 per cent: vehicles for transporting 10 or more passengers, electric spark vehicles with engine cylinders between 1,500 and 3,000 cm<sup>3</sup>, diesel and semi-diesel vehicles with engine cylinders with more than 1,500 cm<sup>3</sup>, motorcycles with engine cylinders more than 500 cm<sup>3</sup>, balloons, airships, dirigibles, wings, yachts, motor boats, canoes, kayaks;
- 40 per cent: malt beer, cider and similar drinks, non-denatured ethyl alcohol (more than 80 per cent volume), electric spark vehicles with engine cylinders more than 3,000 cm<sup>3</sup>;
- 50 per cent: pearls, diamonds, precious and semi-precious stones, synthetic stones, common metals covered with layers of silver, gold, platinum and related materials, common metals, silver or gold covered with a platinum layer, metallic jewellery, metallic goldsmithing;
- 55 per cent: wine, vermouth, liqueur, other alcoholic drinks (with less than 8.5 per cent volume);
- 65 per cent in 2015 and 2016, increasing to 75 per cent in 2017: denatured ethyl alcohol (more than 80 per cent volume), non-denatured ethyl alcohol like whisky, rum, gin, vodka, etc. (less than 80 per cent volume);
- 75 per cent: cigars, cigarettes, tobacco.

VAT is applied after inclusion of the excise duty amount.

### MOZMOD notes

Excise duty is simulated for a subset of items in MOZMOD that were selected to represent common and regular household expenditure items. The items included are beer, wine, spirits, and tobacco products.

## 2.6.3 Fuel tax

### Tax unit

The tax unit is the household. Fuel tax is simulated on purchases of certain types of fuel.

### Tax base and schedule

Fuel tax is levied on a per-litre basis and is then subject to VAT. The 2015 levies were 7.21 Mt/litre of petrol and 4.27 Mt/litre of diesel. These rates remained unchanged until April 2022 when—due to the high cost of fuel in the international market and its impact on the domestic economy—each tax was



reduced by four percentage points respectively, from April to December 2022 (Ministries of Economy and Finance and Mineral Resources and Energy 2022).

#### MOZMOD notes

Fuel tax is simulated in MOZMOD for petrol and diesel fuels for motor vehicles.

## 3 Data

### 3.1 General description

The MOZMOD database is drawn from IOF 2019–20.<sup>5</sup>

IOF 2019–20 was planned as a cross-section survey. The data was collected monthly by the *Instituto Nacional de Estatística* (INE) between December 2019 and November 2020. Note that the survey was suspended between April and June 2020 because of the COVID-19 pandemic. The survey was planned throughout 12 months to capture the different weather and agriculture seasons.

The IOF 2019–20 followed a probabilistic, stratified, and multistage sampling, using the master sample (*Amostra Mãe*), developed by INE from the 2017 Mozambique Census of Population and Housing (*Recenseamento Geral da População e Habitação (RGPH) 2017 de Moçambique*) (see Table 3.2). Its objectives are to obtain information on the nature and destination of consumption expenditure, as well as data related to the living conditions of households.

Similar to previous IOFs, the units of observation in this survey are households and their habitual resident members. Each selected household was visited over 14 consecutive days in a quarter. Data collection took place over 12 months to represent the stationarity of expenses, income, and other socioeconomic characteristics at a geographic level and throughout the year. Carried out through direct interviews, the IOF collected comprehensive data, including the characterization of accommodation, retained assets, remunerated income of household members, daily expenses in the fortnight of inquiry, and retrospectively on expenses likely to be incurred in more than the fortnight. In addition, anthropometric data was collected on children under five years of age, as well as information on household perceptions regarding food security.

The results, representative at national, provincial and area of residence levels (urban and rural), provide precise estimates for each level, allowing comparative and evolutionary analyzes of several calculated indicators.

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<sup>5</sup> Earlier versions of MOZMOD were underpinned by IOF 2008–09 and 2014–15.

**Table 3.1: MOZMOD database description**

MOZMOD database	Mz_2020 data
Original name	<i>Inquérito ao Orçamento Familiar</i>
Provider	National Institute of Statistics ( <i>Instituto Nacional de Estatística</i> , INE)
Year of collection	2019 and 2020
Period of collection	December 2019 to November 2020
Income reference period	All incomes adjusted by the MOZMOD team to June 2020

Source: Authors' compilation.

Table 3.2 presents details of the sample by province. The total of sampling units (*Unidades Primárias de Amostragem* – UPAs) was 1,320. They interviewed 13,656 family aggregates (*Agregados Familiares* – AF) distributed proportionally by the 11 provinces of the country. Of these, 7,104 were in urban areas and 6,552 were in rural areas.

**Table 3.2: Selected and interviewed family aggregates by provinces in Mozambique, 2019–20**

Províncias	Amostra de UPA's			Nº de Agregados Familiares esperados		
	Urbano	Rural	Total	Urbano	Rural	Total AF
Niassa	36	72	108	432	648	1,080
Cabo Delgado	32	72	104	384	648	1,032
Nampula	60	100	160	720	900	1,620
Zambézia	52	112	164	624	1,008	1,632
Tete	40	72	112	480	648	1,128
Manica	44	68	112	528	612	1,140
Sofala	48	64	112	576	576	1,152
Inhambane	44	56	100	528	504	1,032
Gaza	44	56	100	528	504	1,032
Maputo Província	72	56	128	864	504	1,368
Maputo Cidade	120		120	1,440		1,440
<b>Total</b>	<b>592</b>	<b>728</b>	<b>1,320</b>	<b>7,104</b>	<b>6,552</b>	<b>13,656</b>

Source: Table 2.1 in INE (2021: 16), reproduced with permission.

Copies of the questionnaires are only available in Portuguese. One questionnaire was used to collect the data. From it, MOZMOD requires specific sections:

1. *Agregadi familiar* (family household questionnaire);
2. *Despesas diárias e autoconsumo* (Daily expenses questionnaire);
3. *Despesas anuais, mensais & receitas (anuais e mensais)* (annual and monthly expenses and income questionnaire);
4. *Despesas diárias individuais* (questionnaire for people 5 years old and over);

As was the case for IOF 2008–09 and IOF 2014–15, the income data in the IOF 2019–20 have not been analysed extensively and so care should be taken when using the income data.

Lastly, with regard to IOF 2008–09, Tvedten et al. (2009) expressed concern about the definition of a household, stating that the survey:

defines the household as people living under the same roof and eating from the same pot, which does not reflect the complex realities on the ground as we have experienced them. In particular, there are many household members who do not live under the same roof but 'eat from the same pot'—including 'split households' who maintain an urban and rural unit as part of their coping strategy. In Maputo in particular, there are also people who live under the same roof but do not 'eat from the same pot' and who are not members of the same household. (Tvedten et al. 2009: 10)

There is no reason to believe that the situation has changed.

## 3.2 Data adjustment

### 3.2.1 General data adjustments

No households/individuals were dropped from the original sample, so no adjustments needed to be made to the weights.

However, in several datasets it was still necessary to undertake data cleaning. For example, in the annual expenditure file some missing expenditure information had been given the value of 9,999,999,999, and other implausibly high expenditures needed to be capped at the 99th percentile.

Households are defined as people living under the same roof and eating from the same pot, and the household head is identified by the household. The survey provides information on each person's relationship to the household head and their biological father/mother (including ID numbers); therefore, it was possible to determine some relationships within the household.

Mother and father IDs (*idmother* and *idfather*) were created for children below 18 years using the biological mother and father ID variables. Where *idmother* or *idfather* was missing but the child was known to be the son/daughter of the head (using the 'relationship to head of household' variable), the child was assigned the ID number of the head of household for *idmother* (where a female head) or *idfather* (where a male head).

More specifically, for T1, the mother ID variable (AF09b) was missing for 37,350 cases. However, of these cases, only 6,595 were aged below 18 years, so the missing variable occurred mainly for older people. For 927 of the 6,595 cases with a missing mother ID, the cases were the son/daughter of the household head, and so were given the ID of the head of the household (for the mother ID) if the head was female. A further 74 cases were given the ID of the head of the household if the head was female, as the cases were listed as stepchildren of the household head.

The father ID variable (AF11b) was missing for 44,574 cases. Of these cases with a missing father ID variable, 13,819 were aged below 18 years. For these children, the father ID variable was assigned the ID of the head of the household where the head was male, and the child was listed as a son/daughter/stepson/stepdaughter of the household head.

Parent ID (*idparent*) was then created as *idmother* and if no *idmother* then *idfather*. The remaining 'loose' (i.e. unallocated) children were all assigned to the head of the household, except where the child was the household head—these 31 cases were left unallocated, the youngest of whom was aged 12 years. Of the 5,346 unallocated children, 2,953 were grandchildren of the head of the household, and 157 were husbands or wives of the head of the household (mainly in their upper teens).

A new marital status variable was constructed which distinguished between people who were single, married (whether monogamous or polygamous), separated/divorced, and widowed. The original marital status variable AF07 had 24,033—37 per cent—missing cases; however, on examination, all of these cases were aged below 18 years, and all were aged 11 years or younger. All of those below 18 years with a missing marital status variable were imputed to be 'single'.

The compulsory variable *idpartner* posed a particular challenge in the dataset, because the household roster did not contain information on relationships between members of the household other than relationships to the household head. This means that the identification of partners for people other than the head (and their spouse) is a challenge. In the original dataset, there are two 'married' statuses—married/marital union, the latter includes polygamous marriages. For individuals aged 16 years and over, 2,984 cases were married and 17,316 cases were in a state of monogamous marital

union. Of the 20,300 married individuals, most—all but 3,040—could be assigned the ID of their co-resident spouse for the compulsory *idpartner* variable.

Extensive work was undertaken on the expenditure data in order to create an input dataset for indirect taxes. A total of 784 separate COICOP codes were identified from either the diary or the main expenditure sections of the questionnaire. Each of these had to be assigned a variable name ('x' followed by the COICOP code) and appropriate value labels. This was an extremely time-consuming activity.

Like in IOF 2014–15, agricultural income data were captured in a different way in IOF 2019–20 than previously. In the new IOF, agricultural income data are captured as net profit (i.e. *yag*). However, for the purpose of simplified tax, agricultural turnover is required (i.e. gross receipts). In order to estimate gross receipts, a ratio was calculated using the previous IOF's data on gross receipts, turnover, and net profit.

### 3.2.2 Income shocks resulting from the COVID-19 pandemic

MOZMOD v3.0 uses the Household Budget Survey from 2019–20 to run policy systems starting from 2020. Because the survey was predominantly conducted in 2020, it captures the impact of COVID-19 on income, the labour force, and consumption during 2020. The gross domestic product estimates show that the economic effects of the pandemic persisted in Mozambique in 2021. Since the 2021 policy system utilizes underlying microdata from the year 2020, it is essential to implement on-model adjustments for income and labour market variables in response to the effects of COVID-19.

For the courtesy of the user, MOZMOD v3.0 contains a definitional policy called 'lma\_mz', which applies relevant shocks to market incomes 'on-model' in 2021. When the policy is set 'on' (default in the 2021 policy systems), a portion of workers in each industry transitions from paid employment to unemployment with no market income. Household consumption expenditures are adjusted downwards accordingly based on absolute reductions in disposable income. In the previous version of the model, 'lma\_mz' was also 'on' for the 2020 policy system. Nonetheless, with the introduction of new input data based on IOF 2019–20, which accurately recorded the impact of the crisis, it became possible to avoid model-based adjustments.

The adjustment is achieved by applying the 'transition shares' listed in Table 3.3 to randomly selected workers in each sector. The transition shares are derived from changes in each industry's GDP from its counterfactual value in 2021, computed based on the pre-pandemic, 2017–19 linear trend (see Lastunen (2022) for details). Specifically, it is assumed that the size of the proportional GDP shock in a given sector is equivalent to the share of workers who transition to unemployment with zero market income. The reduction in output across the economy then approximates the loss of earned market income.

Note that the GDP shocks capture not just the pandemic but also other industry-level economic developments that took place in 2021 and deviated from pre-pandemic trends. Accordingly, the related labour market transitions and shocks apply to the entirety of year 2021. It is therefore recommended that, when running the model, the user also turns 'on' the full-year adjustment switch for the temporary COVID-related policies in the 2020 system year (see Section 2.3). The user is free to use alternative modelling assumptions. In addition, the COVID adjustment policy is switched 'off' in the policy systems from 2022 onwards.

Additional details of the derivation of the GDP shocks (sectoral transition shares) and the modelling of income shocks are available in a separate technical note by Lastunen (2022). It is useful to emphasize

that this particular method to modelling on-model shocks in MOZMOD is based on several assumptions, equivalent in all SOUTHMOD models, that the user is free to amend.<sup>6</sup>

**Table 3.3: Transition shares from paid employment to unemployment with no market income**

Industry number (lindi00)	Industry	Transition share, 2020	Transition share, 2021
1	Agriculture, forestry and fisheries	0	0
2	Extractive industries and mining	0.2026	0.2113
3	Manufacturing industry	0.0287	0.0291
4	Energy	0	0
5	Construction	0.0118	0.0103
6	Transport and communications	0.0540	0.0842
7	Trade and finance	0.0412	0.0422
8	Administrative services	0.1182	0.1297
9	Other services	0.0420	0.0448

Source: Authors' compilation.

### 3.3 Imputations and assumptions

#### 3.3.1 Time period

The survey was undertaken between December 2019 and November 2020. Reference periods vary by type of question.

Information is captured on whether each individual aged 7 years and above has worked in the past 7 days. The survey captures the number of hours worked per week, the number of months worked in the last 12 months, the number of hours spent in the last 7 days doing different types of labour, and the number of hours spent on the previous day ('yesterday') doing housework. Information on income is collected at the individual level and the income questions generally relate to the last month. Incomes have been deflated in the data preparation phase to June 2020.

Table 3.4 lists the five files that were combined in order to construct the initial dataset.

**Table 3.4: List and description of the IOF dataset**

Actual file name	Name used in report	Description
<i>7_Membros – Individual Questions</i>	Base data and labour market data	This is a base individual- and household-level file. It contains demographic and other information at the individual and household level. All other datasets are appended to this. It also contains the labour market variables.
<i>18_Despesas diárias do AF_Final</i>	Daily consumption data	This contain the consumption and assets data used for official consumption poverty line computation.
<i>21_Base de DDiárias Individuais_Final</i>	Extra information on daily consumption	
<i>15_Despesas Mensais_FINAL</i>	Monthly consumption	
<i>3_Bens Duráveis_FINAL</i>	Assets	

Source: Authors' compilation.

The file *7\_Membros – Individual Questions* (see Table 3.4) together contain all the information necessary to construct the income variables (*yem*, *yse*, *yag*, *ytn*, *ypr*, *yprld*, *yiyot*, *yot*, *ypt*).

<sup>6</sup> Among other assumptions made in the current implementation of on-model shocks, only market income ('yem', 'yse', and 'yag', items that make up the 'earnings' income list) is reduced. Furthermore, farm income ('yag') is only reduced for formal workers in the agricultural sector who have other sources of earnings ('yem' or 'yse'). The user can change the related parameters or rely on alternative assumptions. Lastly, any sector-level positive shocks are not taken into account.

Information on expenditure/consumption is collected at the household level through a combination of diary and sections in the questionnaire. The diary data (relating to one week of expenditure) were stored in two files, *18\_Despesas diarias do AF\_Final* and *21\_Base de DDiárias Individuais\_Final*. Monthly expenditures were collated through the questionnaire and the data stored in the file *15\_Despesas Mensais\_FINAL*.

### 3.3.2 Gross incomes

The IOF does not contain information about gross employment income. As was the case with IOF 2008–09, gross income was derived using a net to gross ratio for employment income within the IOF. This involved computing net income for a series of gross incomes using the information on tax bands, tax rates, and the presence of dependents in the family (so reverse engineering the tax system). Grossing up factors were calculated accordingly for various income bands.

Specifically, a spreadsheet was constructed of hypothetical monthly gross employment incomes ranging from Mt 20,000 per month to Mt 270,000 per month in intervals of Mt 10,000 (or less). Net incomes were calculated for these figures, assuming an average number of dependents, which was derived from the IOF for groups of (net) income bands of those in employment. In practice, there was very little variation although the higher-income groups had only an average of one dependent compared with two dependents for most other income groups and three dependents for the very lowest band. Once the net incomes had been derived for these hypothetical monthly gross employment figures, grossing up factors were calculated for bands of net income (see Table 3.5).<sup>7</sup>

**Table 3.5: IOF net employment income data: grossing factors**

Net income range (Mt per month)	Grossing factor
20,000–28,999	1.0221
29,000–51,999	1.1271
52,000–79,999	1.2413
80,000–111,999	1.2441
112,000–149,999	1.1897
150,000–179,999	1.2132
≥180,000	1.2311

Source: Authors' compilation.

### 3.3.3 Disaggregation of harmonized variables

It was not necessary to disaggregate any of the variables.

## 3.4 Updating

To account for any time inconsistencies between the input dataset and the policy year, uprating factors are used. Each monetary variable (i.e. each income component) is updated to account for changes in the non-simulated variables that have taken place between the year of the data and the year of the simulated tax–benefit system. Uprating factors are generally based on changes in the average value of an income component between the year of the data and the policy year.

The list of uprating factors as well as the sources used to derive them can be found in Table 3.7.

<sup>7</sup> The grossing factors for the 2020 dataset were identical to those used in 2015, as the tax bands for that calculation remained unchanged.

The data for the updating process consisted of the average wage index, overall consumer price index (CPI), and components of CPI. Seven updating factors were created to update income and expenditure data: overall CPI, CPI food, CPI non-food, alcohol CPI, tobacco CPI, fuel CPI, and average wage index. These were sourced directly from INE. The base period is June 2016. The average wage inflator was derived from data on minimum wage levels.

### **3.5 Consumption levels**

Consumption levels are based on the original reported consumption levels in the input data (xhh). These levels are updated from the base year to the policy year and adjusted by absolute changes in disposable income from the base year to the policy year.

The change in disposable income takes changes in market incomes (e.g. COVID-related decreases in earnings) as well as changes in benefits and contributions into account. The underlying assumption is that changes in disposable incomes lead to the same changes in consumption levels. In recognition of the fact that there may be some consumption of own-account-produced food, in cases where the base year disposable income is higher than the disposable income in the policy year, a proportion of the original consumption is assumed to be unaffected. This proportion is assumed to be 25 per cent of the original consumption following Tschirley et al. (2015).

**Table 3.7: Raw indices for deriving MOZMOD uprating factors**

Index	Constant name	Values of the raw indices						Source	Income components uprated by the index
		2018	2019	2020	2021	2022	2023		
CPI overall (2016=100)	$f_{CPI\_total}$	119.27	122.01	125.78	133.95	149.34	159.51	National Statistics Authority ( <a href="http://www.ine.gov.mz">www.ine.gov.mz</a> )	Y* (all except <i>yem</i> and <i>yse</i> )
CPI food index (2016=100)	$f_{CPI\_food}$	107.06	116.89	130.57	151.53	180.26	201.94	National Statistics Authority	X* (food)
CPI non-food index (2016=100)	$f_{CPI\_non\_food}$	126.82	125.50	123.67	125.27	135.65	146.29	National Statistics Authority	X* (non-food, excluding alcohol, fuel, and tobacco)
Average wage inflator	$f_{general\_wage\_inflator}$	2.99	3.21	3.21	3.38	3.77	4.14	Derived from Average Minimum Wage Inflation	<i>yem, yse</i>
Alcohol CPI (base December 2016=100)	$f_{CPI\_Alcohol}$	119.69	121.21	127.06	138.14	140.75	156.74	National Statistics Authority	X* (alcohol)
Tobacco CPI (base December 2016=100)	$f_{CPI\_Tobacco}$	119.69	121.21	127.06	138.14	140.75	156.74	National Statistics Authority	X* (tobacco)
Fuel CPI (base December 2016=100)	$f_{CPI\_Fuel}$	122.07	126.14	125.77	131.07	139.70	161.33	National Statistics Authority	X* (motor vehicle fuel—transport CPI used)

Note: CPI figures shown in this table are for June of each year.

Source: Authors' compilation.



## 4 Validation

### 4.1 Aggregate validation

MOZMOD results have been validated against external benchmarks where feasible. Detailed comparisons of the number of people receiving a given income component and total yearly amounts are shown in the Annex. The main discrepancies between MOZMOD results and external benchmarks are discussed in the following sub-sections. Factors that may explain the observed differences are also discussed.

The validation results shown below relate to the most recent six years (2018–23 inclusive), apart from the poverty and inequality results which relate to 2015–23. For validation results for 2015–17, see Castelo et al. (2022). Results for 2015–19 are produced using the 2015 input file, and 2020–23 is generated based on the underpinning microdata derived from the 2019–20 round of IOF survey.

#### 4.1.1 Validation of incomes inputted into the simulation

It was not possible to obtain external data on numbers of employed and unemployed people with which to compare the IOF (Table A1 in the Annex). It was also not possible to validate the number of recipients of various types of market income in the input dataset using external statistics (Table A2 in the Annex), nor the aggregate annual amounts of various types of market income (Table A3 in the Annex). In addition, it was not possible to assess the extent to which the non-simulated policies are adequately captured in the IOF as the IOF does not distinguish between receipt of different types of pensions (Tables A4 and A5 in the Annex).

#### 4.1.2 Validation of outputted (simulated) incomes

Table A6 in the Annex compares the number of recipients of various types of simulated benefits/number of payers of simulated taxes or simulated social insurance contributions in MOZMOD with external statistics. Table A7 in the Annex compares the simulated and published aggregate yearly amounts for these simulated taxes and benefits.

Table A6 shows the published number of individuals paying personal income tax (employment and other) in 2018–23, and Table A7 shows the annual amounts. In general, MOZMOD simulated 84 per cent of personal income tax revenue (employment and other) in 2022.

For simplified tax, MOZMOD simulates a far larger number of taxpayers than is reported in the administrative data for 2022 (1,575 per cent). It is likely that this is because MOZMOD assumes full compliance; moreover, it is a choice of the taxpayer (up to the relevant threshold) to be enrolled in the simplified tax system rather than preparing and submitting their accounts, and in MOZMOD it is assumed that eligible taxpayers opt to pursue the simplified tax option. The simulated simplified tax for 2022 is 842 times larger than the actual revenue for 2022, whereas in the earlier years shown (2018–19), the simulated simplified tax is around 71 times larger than the actual revenue. This stark change is due to the significant drop in actual revenue from this tax starting 2020.

MOZMOD simulates more eligible people for DSSP than actually received support, so simulations of this policy were adjusted downwards to correspond to the level of expenditure. This may reflect a limited roll-out of the benefit in practice, and the policy is switched off in the model from 2019 onwards.

With respect to BSSP, MOZMOD simulates only about a quarter of the external validation figure for 2015–18. It is possible that this is due to a lack of precise disability-related variables in the IOF that correspond to the eligibility criteria for the BSSP. However, following the change to the policy that was introduced in the 2019 system, the simulated figures for BSSP exceeded the external validation data. BSSP receipt was therefore adjusted downwards in the 2019. Large discrepancies no longer persist in policy systems when paired with input data compiled using IOF 2019–20. Therefore, the BSSP switch is only active for 2019 to ensure alignment between model output and actual expenditure.

## **4.2 Income distribution**

In Mozambique, a per-capita equivalence scale is used, whereby household consumption is divided by the number of household members to provide a per-capita consumption amount.

### **4.2.1 Income inequality**

In Mozambique, inequality is measured with reference to consumption, not income. Table A8 in the Annex shows the published figure for 2015 (MEF 2016). The published consumption-based Gini coefficient based on IOF 2014–15 was 0.47, compared with 0.48 for the consumption-based Gini using MOZMOD for 2015, rising to 0.58 for 2023. Nevertheless, a revised official statistic based on IOF 2019–20 has not been published yet. The income-based Gini using MOZMOD is considerably higher, 0.76 for 2020–23.

### **4.2.2 Poverty rates**

In Mozambique, there are 13 consumption-based poverty lines, which are separately calculated for 13 sub-areas of the country that have homogeneous characteristics (Table A9 in the Annex). The construction of a national poverty line is regarded as a forced attempt to produce an average poverty line that does not necessarily reflect what a national poverty line would actually be, but rather is only a statistical number, which is calculated from the average of the 13 poverty lines taking into account their weight.

Using IOF 2014–15, the national poverty line for 2015 was Mt 26.7 per person per day (MEF 2016: 74). The poverty line, based on IOF 2019–20, increased to Mt 58.39 per person per day. For subsequent years this figure was updated in the model using the CPI.

Table A10 in the Annex shows that the MOZMOD output data for 2015 yields a lower consumption-based poverty score than the published data (40.8 per cent rather than 46.1 per cent). The difference is likely to be due to the fact that MOZMOD's underpinning dataset uses two timepoints (T1 and T2) of the IOF 2014/15, rather than the three timepoints that were used for the construction of the published figure. From 2020 onwards, the headcount poverty rate has become higher for systems that use the input file computed using IOF 2019–20. Poverty rates based on the consumption and income approach for 2023, using MOZMOD, are estimated to be 66.3 and 83.3 per cent, respectively.

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## Annex

Table A1: Employment and unemployment (validation data are not available)

Table A2: Number of recipients of various types of market income (validation data are not available)

Table A3: Aggregate annual amounts of market income (validation data are not available)

Table A4: Number of recipients of non-simulated pensions (not captured in IOF)

Table A5: Aggregate yearly amounts of various types of non-simulated pensions payable (not captured in IOF)

**Table A6: Tax and benefit instruments simulated in MOZMOD: number of recipients (of the benefits) and payers (of the tax and social insurance contributions), 2018-2023**

	2018	2019	2020	2021	2022	2023
<b>MOZMOD (A)</b>						
Personal income tax: Employment	137,076	148,962	225,199	221,113	259,765	282,619
Personal income tax: Other	40,598	41,853	62,675	71,616	87,069	90,946
Simplified tax	2,304,960	2,304,501	4,193,239	4,133,063	4,170,532	4,160,840
Fuel tax	N/A	N/A	N/A	N/A	N/A	N/A
VAT	N/A	N/A	N/A	N/A	N/A	N/A
Excise duty	N/A	N/A	N/A	N/A	N/A	N/A
Social insurance: Private sector non-self-employed and self-employed contributors	833,639	833,639	794,662	738,151	800,520	803,499
Social insurance: Public sector contributors	339,041	339,041	350,059	338,609	350,059	350,059
DSSP <sup>k</sup> (hh)	19,821	N/A	N/A	N/A	N/A	N/A
BSSP <sup>l</sup> (hh)	93,396	333,911	359,895	355,692	396,254	391,833
<b>External statistics (B)</b>						
Personal income tax: Employment	107,688	111,890	116,038	/	/	/
Personal income tax: Other	/	/	/	/	/	/
Simplified tax	216,896	227,751	239,165	251,224	264,839	/
Fuel tax	N/A	N/A	N/A	N/A	N/A	N/A
VAT	N/A	N/A	N/A	N/A	N/A	N/A
Excise duty <sup>d</sup>	N/A	N/A	N/A	N/A	N/A	N/A
Social insurance: Private sector non-self-employed and self-employed contributors <sup>e</sup>	45,648d	/	/	620,885	646,487	/
Social insurance: Public sector contributors	/	/	/	/	/	/
DSSP (hh)	16,628e	N/A	N/A	N/A	N/A	N/A
BSSP (hh)	404,806e	458,452g	445,085h	461,351	467,012	/
<b>Per cent captured (A/B)</b>						
Personal income tax: Employment <sup>j</sup>	127.3	133.1	194.1	/	/	/
Personal income tax: Other	/	/	/	/	/	/
Simplified tax	1062.7	1011.9	1,753.3	1,645.2	1,574.7	/
Fuel tax	N/A	N/A	N/A	N/A	N/A	N/A
VAT	N/A	N/A	N/A	N/A	N/A	N/A
Excise duty	N/A	N/A	N/A	N/A	N/A	N/A
Social insurance: Private sector non-self-employed and self-employed contributors	1826.2	1824.5	/	118.9	123.8	/
Social insurance: Public sector contributors	/	/	/	/	/	/
DSSP (hh)	119.2	/	/	/	/	/
BSSP <sup>j</sup> (hh)	23.1	72.8	80.9	77.01	84.8	/

Notes: VAT, value-added tax. N/A: Not applicable. '/': Not available. <sup>a</sup>The MOZMOD simulated figure for DSSP for 2018 was calculated using a downwards adjustment switch to constrain the total to that of the external validation data on expenditure for 2018. <sup>b</sup>The MOZMOD simulated figure for BSSP was randomly deflated using a downwards adjustment switch to constrain the total to that of the external validation data on expenditure for 2019 system. <sup>c</sup>GdM (2018, 2019, 2020, 2021). <sup>d</sup>NISS (2020a). <sup>e</sup>Ministry of Gender, Children and Social Action (2018). <sup>f</sup>This policy was switched off in 2019-2022 in the model. <sup>g</sup>INAS (2019). <sup>h</sup>INAS (2020).

Sources: Panel A: MOZMOD version 3.0. Panel B: see table notes.

**Table A7: Tax and benefit instruments simulated in MOZMOD: annual amounts (million Mt)**

	2018	2019	2020	2021	2022	2023
<b>MOZMOD (A)</b>						
Personal income tax: Employment	11,871	13,358	22,362	22,894	29,001	33,590
Personal income tax: Other	8,526	9,112	10,746	11,823	14,048	15,808
Simplified tax	17,265	17,621	35,141	36,473	39,837	41,799
Fuel tax	2,001	2,001	3,519	3,519	1,851	1,851
VAT	37,044	37,342	62,374	66,072	73,685	76,519
Excise duty	4,029	4,079	2,764	2,899	3,222	3,515
Social insurance: Private sector non-self-employed and self-employed contributors	8,137	8,735	8,919	9,078	10,669	11,745
Social insurance: Public sector contributors	4,251	4,564	7,412	7,304	8,705	9,559
DSSP <sup>k</sup> (hh)	534	/	/	/	/	/
BSSP <sup>l</sup> (hh)	531	3,127	3,905	3,308	3,688	3,651
<b>External statistics (B)</b>						
Personal income tax: Employment	33,051.98 <sup>a</sup>	37,320.5 <sup>b</sup>	40,922.5 <sup>c</sup>	40,476.9 <sup>i</sup>	33,759.3	
Personal income tax: Other	/	/	/	/	/	
Simplified tax	241.98 <sup>a</sup>	245.90 <sup>b</sup>	40.64	40.63 <sup>i</sup>	47.32	
Fuel tax	6,492.33 <sup>a</sup>	7,506.8 <sup>b</sup>	6,518.65 <sup>c</sup>	6,569.5 <sup>i</sup>	5,199.8	
VAT	78,588.95 <sup>a</sup>	75,687.8 <sup>b</sup>	62,565.4 <sup>c</sup>	81,140.4 <sup>i</sup>	128,782.26	
Excise duty <sup>d</sup>	8,211.73 <sup>a</sup>	8,890.00 <sup>b</sup>	9,603.29 <sup>c</sup>	10,224.1 <sup>l</sup>	10,848.1	
Social insurance: Private sector non-self-employed and self-employed contributors <sup>e</sup>	10,016.39	10,964.69	11,768.47	12,702.97	/	
Social insurance: Public sector contributors	8,392.00 <sup>o</sup>	/	/	/	/	
DSSP (hh)	526.55 <sup>f</sup>	554.58 <sup>g</sup>	955.62 <sup>h</sup>	9,015.73 <sup>m</sup>	1,332.49 <sup>n</sup>	
BSSP (hh)	2,884.37 <sup>f</sup>	3,121.69 <sup>g</sup>	3,689.38 <sup>h</sup>	5,327.90 <sup>m</sup>	4,295.14 <sup>n</sup>	
<b>Per cent captured (A/B)</b>						
Personal income tax: Employment <sup>j</sup>	61.7	60.2	80.90	85.77	127.52	
Personal income tax: Other	/	/	/	/	/	
Simplified tax	7134.9	7165.9		86,468.9	89,768.6	84,186.4
Fuel tax	30.8	26.7	53.9	53.6	35.6	
VAT	47.1	49.3	99.7	81.4	57.2	
Excise duty	49.1	45.9	28.8	28.4	29.7	
Social insurance: Private sector non-self-employed and self-employed contributors	81.2	79.7	75.8	71.5	/	
Social insurance: Public sector contributors	50.7	/	/	/	/	
DSSP (hh)	101.4	/	/	/	/	
BSSP <sup>j</sup> (hh)	18.4	100.2	105.8	62.1	85.9	

Notes: <sup>a</sup>GdM (2018). <sup>b</sup>GdM (2019). <sup>c</sup>GdM (2020). <sup>d</sup>The GdM figures are the sum of excise duty from national production and imported products. <sup>e</sup>NISS (2020b), NISS (2022). <sup>f</sup>Ministry of Gender, Children and Social Action (2018). <sup>g</sup>INAS (2019). <sup>h</sup>INAS (2020). <sup>i</sup>GdM (2021). <sup>j</sup>The sum of simulated figures for personal income tax (employment and other) divided by external figure. <sup>k</sup>The MOZMOD simulated figure for DSSP for 2018 was calculated using a downwards adjustment switch to constrain the total to that of the external validation data on expenditure for 2018. This policy was switched off in 2019–23 in the model. <sup>l</sup>The MOZMOD simulated figure for BSSP was randomly deflated using a downwards adjustment switch to constrain the total to that of the external validation data on expenditure for 2019 system. <sup>m</sup>Ministry of Gender, Children and Social Action (2021). The DSSP figure for this year also includes the cost of the DSSP emergency payments in response to the COVID-19 pandemic. <sup>n</sup>Ministry of Gender, Children and Social Action (2022). <sup>o</sup>Ministry of Labour, Employment and Social Security (2022).

Sources: Panel A: MOZMOD version 3.0. Panel B: see table notes.



**Table A8: Income inequality, 2015–23**

Gini coefficient	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>MOZMOD (A)</b>									
Income-based	0.82	0.82	0.82	0.82	0.82	0.76	0.76	0.76	0.76
Consumption-based	0.48	0.53	0.53	0.53	0.52	0.58	0.59	0.59	0.58
<b>External statistics (B)</b>									
Income-based	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Consumption-based	0.47	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Per cent captured (A/B)</b>									
Income-based	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Consumption-based	102.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: The MOZMOD figures assume full take-up of simulated benefits with the exception of DSSP for which receipt was randomly deflated to match reported expenditure for 2016 for the 2015–17 systems and reported expenditure for 2018 for the 2018 system; and BSSP was randomly deflated to match reported expenditure for 2019 systems.

Source: Panel A: Simulated output from MOZMOD V 3.0. Panel B: MEF (2016: 27).

**Table A9: Consumption-based poverty lines in Mozambique by area, for 2015**

Spatial domains	Poverty lines in 2015 (using IOF 2014–15) (Mt per person per day)
Niassa & Cabo Delgado—rural	29.6
Niassa & Cabo Delgado—urban	33.6
Nampula—rural	19.7
Nampula—urban	26.7
Sofala & Zambézia—rural	19.6
Sofala & Zambézia—urban	26.9
Manica & Tete—rural	24.5
Manica & Tete—urban	34.0
Gaza & Inhambane—rural	28.2
Gaza & Inhambane—urban	32.7
Maputo Province—rural	37.6
Maputo Province—urban	41.7
Maputo City	40.2

Source: MEF (2016: 74).

**Table A10: Poverty rates, 2015–23**

Poverty head-count	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>MOZMOD (A)</b>									
Income-based	80.5	81.5	81.8	81.0	80.4	83.9	84.3	83.7	83.3
Consumption-based	40.8	48.7	49.2	48.3	47.3	66.4	66.9	66.7	66.3
<b>External statistics (B)</b>									
Consumption-based	46.1a	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Per cent captured (A/B)</b>									
Consumption-based	88.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: External figures and MOZMOD figures use per-capita equalization. The MOZMOD figures are calculated using consumption-based poverty lines of Mt 26.7 per person per day for 2015 and Mt 58.39 per person per day for 2020. The poverty line updated by the CPI for subsequent years. The MOZMOD figures assume full take-up of simulated benefits with the exception of DSSP for which receipt was randomly deflated to match reported expenditure for 2016 for the 2015–17 systems and reported expenditure for 2018 for the 2018 system; and BSSP was randomly deflated to match reported expenditure for 2019 system.

Source: Panel A: Simulated output from MOZMOD v3.0. Panel B: MEF (2016: 12).