

SOUTHMOD

Country report

Zanzibar

ZANMOD v1.1

2019–2023

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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 ZANMOD, the SOUTHMOD model developed for Zanzibar. This work was carried out by staff at Zanzibar University, the Second Vice President's Office in Zanzibar, the University of Dar es Salaam, and the University of Dodoma, in collaboration with UNU-WIDER and SASPRI.

The results presented in this report are derived using ZANMOD version 1.1, 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 ZANMOD and other SOUTHMOD models, see the [SOUTHMOD page](#), [SOUTHMOD Modelling Conventions](#), and [SOUTHMOD User Manual](#) (UNU-WIDER 2024a; 2024b).

The ZANMOD 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

| | |
|----------|---|
| BoT | Bank of Tanzania |
| CIT | Corporate income tax |
| COICOP | Classification of Individual Consumption According to Purpose |
| CPI | Consumer price index |
| DPs | Development partners |
| EAC | East African Community |
| EUROMOD | European Union Tax-Benefit Microsimulation Model |
| GDP | Gross Domestic Product |
| HBS | Household Budget Survey |
| HGSFP | Home-Grown School Feeding Program |
| ILO | International Labour Organization |
| LGA | Local Government Authority |
| LMA | Law of Marriage Act |
| MoFP | Ministry of Finance and Planning |
| MoFP-PED | Ministry of Finance and Planning—Poverty Eradication Division |
| NBS | National Bureau of Statistics |
| NGO | Non-governmental organization |
| NHIF | National Health Insurance Fund |
| OCGS | Office of the Chief Government Statistician |
| PAYE | Pay-as-you-earn |
| PIT | Personal income tax |
| PMT | Proxy Means Test |
| PSSN | Productive Social Safety Net |
| PSSSF | Public Service Social Security Fund |
| RGoZ | Revolutionary Government of Zanzibar |
| SADC | Southern African Development Community |
| TASAF | Tanzania Social Action Fund |
| TMU | TASAF Monitoring Unit |
| TRA | Tanzania Revenue Authority |
| TZS | Tanzanian Shillings |
| URB | Unified Registry of Beneficiaries |
| URT | United Republic of Tanzania |
| USD | United States dollar |
| VAT | Value-added Tax |
| ZRA | Zanzibar Revenue Authority |
| ZRB | Zanzibar Revenue Board |
| ZSSF | Zanzibar Social Security Fund |
| ZUPS | Zanzibar Universal Pension Scheme |
| ZVSSS | Zanzibar Voluntary Social Security Scheme |

1 Basic information

1.1 Basic information about the tax-benefit system

Zanzibar is a Tanzanian archipelago that is located in the Indian Ocean. It has formed part of the United Republic of Tanzania—a union between mainland Tanzania and Zanzibar—since 1964 and is a member of both the Southern African Development Community (SADC) and the East African Community (EAC).

Zanzibar comprises the two main islands of Unguja and Pemba as well as several other islets.¹ Politically, Zanzibar is a semi-autonomous part of the United Republic of Tanzania (URT) with its own government—the executive, headed by the President of Zanzibar—its own judicial system, and its own legislative assembly, known as the House of Representatives (OCGS 2019). Zanzibar is divided into five administrative regions (three in Unguja and two in Pemba), 11 districts (three in Urban West Region and two in each remaining region), 50 constituencies which represent Zanzibar in the Parliament of the URT, 54 constituencies for the House of Representatives in Zanzibar, and 387 *shehias* (Khalfan et al. 2009). Certain matters and policies fall under the auspices of the Government of the United Republic of Tanzania, i.e. the union government, and some are under the auspices of the Revolutionary Government of Zanzibar (RGoZ).²

The most recent population and household census for the URT was carried out in 2022; Zanzibar's population was estimated to be 1.9 million. The average annual population growth rate in Zanzibar increased from 2.8 per cent in 2012 to 3.7 per cent in 2022. The share of Zanzibar's population from overall Tanzania population has slightly increased in the last decade, growing to 3.08 per cent in 2022 from 2.90 per cent in 2012. (NBS 2022a).

Since the 1964 revolution, development aspects in Zanzibar have been administered by the RGoZ. The RGoZ has taken various measures to address the main development challenges faced by Zanzibar, namely: education, health, and poverty. Currently, Zanzibar envisions attaining upper-middle income status and realizing a near-zero absolute poverty by 2050 through sustainable and inclusive human development. Its development plan relies on four pillars: economic transformation, human capital and social services, infrastructural linkages, and governance and resilience (RGoZ 2020).

Zanzibar has achieved impressive growth in the economy, though the pace of poverty reduction has been low. The real gross domestic product (GDP) growth rate rose from 6 per cent in 2009 to 7 per cent in 2019 before slowing down to 1.3 per cent in 2020 due to the adverse effects of the COVID-19 pandemic. Following the global recovery, the economy grew by 5.1 per cent in 2021 (World Bank 2022; BoT 2022). The service sector dominates the economy, though its share of GDP slightly decreased from 49.8 per cent in 2016 to 45.3 per cent in 2021 (BoT 2022). The tourism subsector significantly contributes to Zanzibar's economic performance and about 80 per cent of the country's foreign exchange earnings (World Bank 2022). In 2021, the tourism subsector—indirectly measured in GDP statistics by 'accommodation and food services subsector'—contributed about 15.8 per cent in GDP (a

¹ The islands have a total area of 2,654 square kilometres; of this, Unguja, which is the largest, has an area of 1,666 square kilometres, while Pemba has an area of 988 square kilometres.

² The article of 'Union' that was signed on 22 April 1964 formed a two-government structure: the Government of the United Republic of Tanzania, which has executive power for all Union-related matters and all non-Union-related matters that concern mainland Tanzania; and the Revolutionary Government of Zanzibar, which has executive power for all non-Union-related matters that concern Zanzibar. The 'Union' matters are: the constitution and government of the United Republic; external affairs; defence; police; emergency powers; citizenship; immigration; external trade and borrowing; public services for the people of the United Republic; income tax, corporation tax, customs, and excise. Over time there have been some changes and more responsibilities have been added.

decrease from 20.2 per cent in 2019), followed by livestock (12.9 per cent), construction (9.3 per cent), and crops (mainly clove plantations) (8 per cent) (BoT 2022).

As is the case in most countries in the region, social benefits in Zanzibar are composed of transfers in cash or in kind covering the population for certain social shocks. These social benefits include both contributory systems (social insurance), to which very few people have access, and non-contributory systems such as the Productive Social Safety Net (PSSN) cash transfer programme, which is implemented by Tanzania Social Action Fund (TASAF) on behalf of the government, and the universal old age pension.

According to United Nations Human Rights Declaration of 1948, everyone has the right to social security and is entitled to realization in accordance with the organization and resources of each state. The minimum standard for social security was established through the ILO Social Security No. 102 Declaration of 1952. The RGoZ acknowledged the importance of social security through the establishment of Act No.15 of 1986, The Workers' Compensation Act; Act No. 4 of 1988, The Retirement Benefit Act, which was amended by Establishment Act No.1 of 1990, The Pensions (Political Appointees); Act No.2 of 1990, The Pension Establishment; and Act No.2 of 1995, The Zanzibar Trading and Consumer Protection Act.

While there is no statutory indexing regime for taxes to take account of inflation in Zanzibar, there is an indexing regime for benefits. Indexation of benefits comprises an adjustment of pensions and other cash benefits to take account of price movements and protection against inflation for the beneficiaries. Indexes may include prevailing statutory minimum wages and yearly average earnings of the contributors.

The Public Service Retirement Benefits Act 1997 set the voluntary retirement age in Zanzibar at 55 years and the statutory retirement age at 60, which is when people become eligible for the state pension. Retirees receive funds based on the contribution by employees and employers during the working life.

The working age in Zanzibar, like in mainland Tanzania, is 18 years and above; work below that age is referred to as child labour. Both primary and secondary education are free and compulsory for all children from seven years of age for primary education and from 14 years for secondary school education. Primary education lasts for seven years, with the minimum school-leaving age being 14 years, and secondary school education lasts for four years. Dependent children are defined as those under 18, as they are expected to have finished ordinary secondary education at the age of 18.

In terms of family structure, polygamy is fairly widespread in Tanzania, with origins in Customary Law and Islamic Law traditions. The 1971 Law of Marriage Act (LMA) allows men to have more than one wife (but not for women to have more than one husband) and was written with the intention of accommodating both Customary Law and Islamic Law traditions (Howland and Koenen n.d.). Importantly, the Act states that each wife shall enjoy equal rights and have equal status in law. However, where informal de facto variants of polygamy occur, the 'unofficial co-wives have limited social recognition and little protection under the LMA' (Howland and Koenen n.d.: 27).

Lone parenthood is not very prevalent but is on the rise. Tanzania's Local Customary Law (Declaration) Order of 1963 states that children of married couples belong to the father, and this custodianship continues beyond divorce. The only exception is that divorced women are given temporary custodianship of children that they are breastfeeding. If a woman has an illegitimate child, the child is said to belong to the woman's father (see Government of Tanzania 1963: chapters 3 and 4).

Like mainland Tanzania, the fiscal year runs from 1 July to 30 June. The Tanzanian Revenue Authority (TRA), the Zanzibar Revenue Board (ZRB), and municipal authorities hold a parallel mandate in collecting different categories of taxes in Zanzibar. TRA is responsible for administering income taxes

and taxes on international trade (import duty, excise duty on imports, trade levy, suspended duty, and withholding tax). However, all relevant revenue collected by the TRA is remitted to the Zanzibar Treasury, governed by the principle of retaining the revenue at source.

ZRB collects wide-ranging types of taxes within the territorial jurisdiction of Zanzibar, namely: local value-added tax (VAT); the petroleum product levy; and collections by ministries and autonomous government agencies such as the Zanzibar Investment Promotion Agency and the Zanzibar Tourism Commission. Other revenue sources for the ZRB include the hotel levy, restaurant and tour operator's levy, stamp duty, seaport service charges, business licences, and the entertainment tax (World Bank 2003).

Municipalities collect revenue under the oversight of the minister responsible for regional administration, local government, and special departments. The principal sources of local government revenue include trade licence fees, production taxes, property rents, and fines and penalties.

A similar progressive income tax regime is imposed on taxpayers in mainland Tanzania and Zanzibar. The personal income tax policy in Zanzibar entirely aligns with mainland Tanzania since 2020, which is applied at the level of the individual. Taxpayers need to fill in a tax return; however, tax evasion and avoidance are still quite widespread.

1.2 Social benefits

The Tanzania Social Action Fund (TASAF) is one of the largest social benefit programmes in URT and is co-financed by the government and development partners (DPs). It is a countrywide programme that is applied across mainland Tanzania and Zanzibar to support poor households. TASAF is responsible for implementing the Productive Social Safety Net (PSSN). The first phase of the PSSN programme ran from 2013 to 2019. Phase 2 of the PSSN commenced in 2020.³ There are two cash transfers—a fixed basic cash transfer and a variable conditional cash transfer—as well as a public works programme.

Benefit 1 (*Basic social assistance: PSSN, fixed basic cash transfer*): This is a cash transfer to low-income households. It is a non-contributory tax-financed benefit.

Benefit 2 (*Basic social assistance—conditional: PSSN, variable conditional cash transfer*): This is a top-up cash transfer to low-income households with children, conditional on compliance with requirements related to education and health behaviour. In Phase 2 it was extended to those with a disability.

Benefit 3 (*Basic social assistance: Zanzibar Universal Pension Scheme, ZUPS*): This is a cash transfer for older people in Zanzibar, called *Pencheni Jamii*. It is a non-contributory tax-financed benefit payable to people aged 70 and above. Recipients must be residents of Zanzibar and in possession of the Zanzibar Identification Card. This programme excludes individuals who have retired from government, and beneficiaries of the old age allowance.

Benefit 4 (*Basic social assistance: families living in the most vulnerable conditions*): This is a benefit for families living in the most vulnerable conditions (*Familia zinazoishi katika mazingira magumu zaidi*). The benefit is paid at TZS30,000 (Tanzanian shillings) per month. This benefit is not modelled in ZANMOD as the number of beneficiaries is so small: there were 219 beneficiaries in 2021/22 (information supplied by the Department of Social Welfare on request from the Second Vice President's Office).

³ In practice, because of the COVID-19 pandemic, the programme only began in the third quarter of 2020.

Benefit 5 (*Basic social assistance: mothers with triplets*): This is a benefit for mothers who have given birth to more than two children concurrently (*Mama waliojifungua zaidi ya mapacha wawili*), commonly referred to as being for mothers with triplets. The benefit is paid at TZS30,000 per month for the period up until the children's second birthday. This benefit is not modelled in ZANMOD as the number of beneficiaries is so small: there were 12 beneficiaries across Unguja and Pemba in 2021/22 (information supplied by the Department of Social Welfare on request from the Second Vice President's Office).

Benefit 6 (*Basic social assistance: school feeding programme*). The pilot school feeding programme was launched in 2014 targeting 9,000 primary school children. The schools were targeted based on three indicators: poor performance, economic status, and nutrition. The programme expanded the coverage over time and reached 14,000 students in 27 schools in Pemba and Unguja (HGSFP 2021). This programme is not modelled in ZANMOD as information about the names of schools attended by children is not captured in the underpinning survey.

Benefit 7 (*Basic social assistance: children living in orphanages*): This is a benefit for children living in orphanages in Zanzibar. Each child receives TZS20,000 per month. This benefit is not modelled in ZANMOD as the number of beneficiaries is small: less than 40 children received this benefit in each year of 2018/19 to 2022/23 (information supplied by the Department of Social Welfare on request from the Second Vice President's Office).

Benefit 8 (*Basic social assistance: old age allowance*): This is a benefit for older people in Zanzibar, called *Posho la Wazee*. Each person receives TZS40,000 per month. It is payable to older people who are registered and living in a special home for the elderly called '*Nyumba za Wazee*', and recipients of this benefit are not eligible for ZUPS. This benefit is not modelled in ZANMOD as the number of beneficiaries is small: only 70 people received this benefit in 2021/22 (information supplied by the Department of Social Welfare on request from the Second Vice President's Office).

A disability benefit is under discussion for Zanzibar but has not yet been introduced.

1.2.1 Not strictly benefits

Not strictly benefit 1 (*Public works programme: PSSN, public works*): This is also a strand of the PSSN scheme. This programme is intended to link the beneficiaries to the labour market.

1.3 Social contributions

Social contribution 1 (*Pension contributory scheme 1: Zanzibar Social Security Fund (ZSSF)—mandatory*): The ZSSF was established under the Zanzibar Security Fund Act No. 2 of 1998, subsequently amended by the Zanzibar Social Security Fund Act No. 9 of 2002 and re-enacted by Act No. 2 of 2005. Currently, ZSSF operates two schemes: the main (mandatory) scheme and the supplementary (voluntary) scheme.⁴ The ZSSF schemes offer both short- and long-term benefits. The various short-term benefits comprise employment injury, health/medical care, maternity, death gratuity and funeral benefit, education, and withdrawals. The long-term benefits include old age pension, invalidity benefits, and survivors' benefits. Before the inception of the ZSSF, public service employees in Zanzibar were covered and received pension benefits under the Pensions Act No. 2 of 1990, where all benefits of the retired employees were available through the MoFP.

Social contribution 2 (*Pension contributory scheme 2: Zanzibar Social Security Fund (ZVSSF)—voluntary*): The ZVSSF is a voluntary contributory pension scheme under ZSSF. This scheme draws

⁴ The information in this section is drawn from ZSSF's website at <https://zssf.or.tz/#/home> unless specified otherwise.

members from both the formal and informal sectors who voluntarily choose to join the scheme. The aim of this scheme is to provide social security services to all irrespective of the sector in which they operate and to provide benefits that are based exclusively on members' contributions. Members of any mandatory scheme (such as the ZSSF mandatory scheme) who are willing to make additional savings in addition to those from the compulsory scheme are allowed to join the Zanzibar Voluntary Social Security Scheme (ZVSSS). ZVSSS is not modelled in ZANMOD due to the small number of contributors.

Social contribution 3 (*Pension contributory scheme 3: PSSSF*): This mandatory scheme was established by the Public Service Social Security Fund Act No.2 of 2018 and is managed by the Board of Trustees of the Public Service Social Security Fund. Under Section 29(1) of the act, the following benefits are payable: retirement benefit, survivors' benefit, invalidity benefit, maternity benefit, unemployment benefit, sickness benefit, and death gratuity. People in Zanzibar who are employed by the URT contribute to this scheme, but it is not modelled in ZANMOD as it is not possible to identify such individuals in the ZANMOD's dataset.

Social contribution 4 (*Health insurance contributory scheme 1: National Health Insurance Fund, NHIF*): This scheme was established in 1999 and is in place in both Zanzibar and mainland Tanzania. In Zanzibar it is an opt-in scheme as there is a public healthcare service in place. The Fund also covers Members of the Zanzibar House of Representatives. The coverage of the NHIF scheme is very low, averaging about 8 per cent of the URT population in 2022 (URT 2022b). In Zanzibar there were 11,613 contributors to the scheme in 2021 (data provided on request by the NHIF Office). It is not modelled in ZANMOD due to challenges with identifying the contributors (discussed further in the section on data).

1.4 Taxes

In Zanzibar, three institutions are responsible for domestic tax administration and/or collection, with different taxes being payable to, respectively, the Tanzania Revenue Authority (TRA), the Zanzibar Revenue Authority (ZRA) (formerly the Zanzibar Revenue Board, ZRB), and municipal authorities. The TRA is responsible for all taxes and related fees that are under the jurisdiction of the URT. However, all relevant revenue collected by the TRA is remitted to the Zanzibar Treasury, governed by the principle of retaining the revenue at source.

The ZRB was established under ZRB Act No. 7 1996 as the prime agency of the Government of Zanzibar for the collection and administration of all taxes from Inland Revenue sources other than customs, excise, and income taxes. On 29 December 2022, the Revolutionary Government of Zanzibar passed the Zanzibar Revenue Authority Act No. 11 of 2022 (ZRA Act) which established the ZRA, replacing the ZRB. This legislative change aimed to enhance the efficiency, effectiveness, and autonomy of revenue collection and fiscal management in Zanzibar. It also aims to ensure fairness, effectiveness, and efficient administration and enforcement of laws administered by the ZRA.

Municipal authorities are responsible for the administration and collection of local government revenue under the oversight of the minister responsible for regional administration, local government, and special departments.

Table 1.2 summarizes the main taxes in Zanzibar by the institution responsible for administering the tax.

Table 1.2: Summary of main taxes in Zanzibar by institution responsible for administration of the tax

| Institution | Tax |
|-----------------------|---|
| TRA | Import duty, infrastructure tax, VAT (import), excise duty (import), motor vehicle levy, trade levy, excise duty (petrol), PAYE, individual tax, skill development levy, corporation tax, withholding tax. |
| ZRA (formerly ZRB) | VAT (local), ⁵ excise duty (local), hotel levy, restaurant levy, tour operation levy, stamp duty, airport service charge, infrastructure tax (ZRB), motor vehicle registration fee, motor licensing fee, driving licence fee, airport safety fee, seaport service charge, road development fund, petroleum levy. |
| Municipal authorities | Trade licence fees, production taxes, property rents, and fines and penalties. |

Source: Authors' compilation.

Tax 1 (Personal income tax: presumptive income tax) Presumptive tax is applied to resident individuals with businesses that have an annual turnover of less than TZS100 million (TRA 2023a). Individuals with an annual turnover above this threshold pay personal income tax for individuals who prepare audited accounts and are taxed on their profits (see Tax 2). Individuals with an annual turnover of less than the presumptive tax threshold but who have other income, for example from salary employment, are also not eligible to pay presumptive tax and have to submit accounts (see Tax 2 also).

Tax 2 (Personal income tax: PAYE and personal income tax for individuals who prepare account cases): Employers are required by law to deduct income tax from an employee's taxable salary via PAYE (for a definition of taxable salary income see Leyaro et al. 2015: Annex 1). For PAYE, a withholding tax approach is used (for details about the withholding tax approach, see Leyaro et al. 2015: Annex 2; TRA 2023b). Individuals with an annual turnover above the presumptive tax threshold of TZS100 million pay personal income tax for individuals who prepare audited accounts and are taxed on their profits. Individuals with an annual turnover of less than the presumptive tax threshold but who have other income, for example from salary employment, are also not eligible to pay presumptive tax and have to submit accounts (TRA 2023a).

Tax 3 (Skills development levy): This is collected by TRA under the Vocational Education Training Act and is payable by the employer, with certain exceptions (TRA 2023c). This levy is calculated as 4 per cent of the emoluments paid to employees during the month.

Tax 4 (Capital gains tax): This tax is payable for the realization of interest in land or buildings, at 10 per cent for residents and 20 per cent for non-residents. It is also payable on net gains when investment assets are sold (TRA (2023d).

Tax 5 (Corporation tax): Corporation tax is a tax charged on the taxable incomes (profits) of entities such as limited companies and other organizations including trusts, clubs, cooperative societies, non-governmental associations, charitable organizations, domestic permanent establishment (branches of non-resident companies), political parties, government agencies, and other unincorporated bodies. It is payable at 30 per cent of profit (TRA 2023e).

Tax 6 (Excise duty): Excise duty is charged on imported goods and services by TRA and on local goods and services by ZRA. Specific rates are charged on alcoholic and soft drinks, recorded music, cigarettes, tobacco, petrol products, and natural gas. Ad valorem rates are applied to certain goods and services including money transfer services, electronic communication services, pay to view television services, imported furniture, motor vehicles, and plastic bags, varying from 0 per cent to 50 per cent (details of the local (Zanzibar) excise duty rates are available at ZRA (2023a)).

Tax 7 (VAT): VAT registration is required in Zanzibar when taxable turnover exceeds TZS50 million per year. The standard rate of VAT in Zanzibar is 15 per cent, and zero-rated supplies are listed in the First

⁵ In addition, VAT on manufactured goods produced in mainland Tanzania but destined for Zanzibar is collected by TRA-Mainland and is subsequently remitted to the Zanzibar Treasury.

Schedule of the VAT Act No.4 of 1998 (ZRA 2023b). The TRA is responsible for VAT on imports from outside the URT territory.

Tax 8 (Other ZRA taxes and charges): These include stamp duty, infrastructure tax, petroleum levy, tour operation levy, restaurant levy, hotel levy, airport and seaport service charges, airport safety fee, motor vehicle registration, and driving licence (ZRA 2023c).

Tax 9 (Other TRA taxes and charges): These include import duty.

2 Simulation of taxes and benefits in ZANMOD

2.1 Scope of simulation

Table 2.1 shows the benefit policies that are simulated in ZANMOD. Table 2.2 lists the main taxes and social contributions and specifies which are simulated within ZANMOD. As Zanzibar's financial year runs from 1 July to 30 June, it has been decided that ZANMOD's systems for each year should reflect the position as of 1 July in each year, rather than selecting a time point in June. So, for example, ZANMOD's 2019 system refers to the arrangements that were applicable from 1 July 2019.

Table 2.1: Simulation of benefits in ZANMOD

| | Variable name | Treatment in ZANMOD | | | | | Why not fully simulated? |
|--|----------------|---------------------|------|------|------|------|---|
| | | 2019 | 2020 | 2021 | 2022 | 2023 | |
| Zanzibar Universal Pension Scheme | <i>boa_s</i> | S | S | S | S | S | |
| Basic social assistance PSSN (<i>bsa_zn</i>) | <i>bsa_s</i> | PS | PS | PS | PS | PS | Community assessment of eligibility cannot be simulated. |
| Basic social assistance—conditional PSSN (<i>bchot_zn</i>) Applicable 2019–20 | <i>bchot_s</i> | PS | PS | — | — | — | Community assessment of eligibility and conditionalities cannot be simulated. |
| Basic social assistance—conditional PSSN (<i>bsa01_zn</i>) Applicable 2021–23 | <i>bsa01_s</i> | — | — | PS | PS | PS | Community assessment of eligibility and conditionalities cannot be simulated. |
| Public works PSSN (<i>bun_zn</i>) | <i>bun_s</i> | PS | PS | PS | PS | PS | A flag is created for eligible households. |
| Families living in the most vulnerability | <i>n/a</i> | E | E | E | E | E | Very small number of beneficiaries |
| Mothers with triplets | <i>n/a</i> | E | E | E | E | E | Very small number of beneficiaries |
| School feeding programme | <i>n/a</i> | E | E | E | E | E | Selected schools only |
| Old age allowance | <i>n/a</i> | E | E | E | E | E | Very small number of beneficiaries |
| Children living in orphanages | <i>n/a</i> | E | E | E | E | E | Very small number of beneficiaries |

Notes: '—' policy did not exist in that year; 'PS' policy is *partially simulated* as some of its relevant rules are not simulated; 'S' policy is *simulated* although some minor or very specific rules may not be simulated. 'E' policy is *excluded* from the model as it is neither included in the microdata nor simulated; PSSN, Productive Social Safety Net.

Source: Authors' compilation.

Table 2.2: Simulation of taxes and social contributions in ZANMOD

| | Variable name | Treatment in ZANMOD | | | | | Why not fully simulated? |
|--|--------------------------------------|---------------------|------|------|------|------|---|
| | | 2019 | 2020 | 2021 | 2022 | 2023 | |
| Presumptive tax (<i>ttn_zn</i>) | <i>ttn_s</i> | S | S | S | S | S | |
| Personal income tax (<i>tin_zn</i>) | <i>tin_s</i> | S | S | S | S | S | |
| Excise (<i>tex_zn</i>) | <i>tex01_s</i> <i>tex02_s</i> | PS | PS | PS | PS | PS | Simulated for certain goods only (tobacco products and kerosene/paraffin) |
| VAT (<i>tva_zn</i>) | <i>tva_s</i> | S | S | S | S | S | |
| Capital gains tax | <i>n/a</i> | E | E | E | E | E | No information available |
| Health insurance NHIF | <i>n/a</i> | E | E | E | E | E | Insufficient information available |
| Pensions contributions ZSSF mandatory scheme (<i>tscee01_zn</i> and <i>tscer01_zn</i>) | <i>tscee01_s</i> <i>tscer01_s</i> | S | S | S | S | S | |
| Pensions contributions ZSSF voluntary scheme (<i>tscee02_zn</i> and <i>tscer02_zn</i>) | <i>n/a</i> | E | E | E | E | E | No information available |
| Pensions contributions PSSSF | <i>n/a</i> | E | E | E | E | E | No information available |

Notes: NHIF, National Health Insurance Fund; VAT, value-added tax; ZSSF, Zanzibar Social Security Fund; ‘—’ policy did not exist in that year; ‘E’ policy is *excluded* from the model as it is neither included in the microdata nor simulated; ‘PS’ policy is *partially simulated* as some of its relevant rules are not simulated; ‘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 shows the order in which taxes and benefits are simulated in ZANMOD. The table is a reproduction of the policy spine from the model.

Table 2.3: ZANMOD spine—order of simulation

| Policy | 2019 | 2020 | 2021 | 2022 | 2023 | Description of the instrument and main output |
|------------------|--------|--------|--------|--------|--------|--|
| uprate_zn | on | on | on | on | on | DEF: UPRATING FACTORS |
| neg_zn | on | on | on | on | on | DEF: Recode negative income to zero |
| ilsdef_zn | on | on | on | on | on | DEF: STANDARD INCOME LISTS |
| ildef_zn | on | on | on | on | on | DEF: MODEL SPECIFIC INCOME LISTS |
| ildef_stats_zn | on | on | on | on | on | DEF: STATS PRESENTER INCOME LISTS |
| ildef_exp_zn | on | on | on | on | on | DEF: EXPENDITURE INCOME LISTS (COICOP) |
| tundef_zn | on | on | on | on | on | DEF: ASSESSMENT UNITS |
| constdef_zn | on | on | on | on | on | DEF: CONSTANTS |
| spl_zn | on | on | on | on | on | DEF: Poverty lines |
| ses_zn | on | on | on | on | on | DEF: Equivalence scales |
| tscee_zn | on | on | on | on | on | SIC: Employee contributions to ZSSF |
| tscer_zn | on | on | on | on | on | SIC: Employer contributions to ZSSF |
| ttn_zn | on | on | on | on | on | TAX: Presumptive income Tax |
| tin_zn | on | on | on | on | on | TAX: Income tax |
| bsa_zn | on | on | on | on | on | BEN: PSSN fixed basic cash transfer |
| bsa01_zn | n/a | n/a | on | on | on | BEN: PSSN variable conditional cash transfer (2021 onwards) |
| bchot_zn | on | on | n/a | n/a | n/a | BEN: PSSN variable conditional cash transfer (pre 2021) |
| bun_zn | on | on | on | on | on | BEN: Eligibility for public works |
| boa_zn | on | on | on | on | on | BEN: Zanzibar Universal Pension Scheme (ZUPS) |
| tva_zn | on | on | on | on | on | TAX: Value-added tax |
| tex_zn | on | on | on | on | on | TAX: Excise duty and VAT on excise duty items |
| xhhadj_zn | on | on | on | on | on | DEF: Adjust consumption to new disposable income plus in-kind benefits |
| tva_tex_cbs_zn | switch | switch | switch | switch | switch | TAX: VAT and excise duty - constant budget shares |
| output_std_zn | on | on | on | on | on | DEF: STANDARD OUTPUT INDIVIDUAL LEVEL |
| output_std_hh_zn | off | off | off | off | off | DEF: STANDARD OUTPUT HOUSEHOLD LEVEL |

Notes: DEF, definitional policy; SIC, social insurance contribution policy; BEN, benefit policy; PSSN, productive social safety net. For information about the policies spl_zn, ses_zn, and tva_tex_cbs_zn, see Section 2.3 on policy switches.

Source: Authors' compilation

Extensions (switches) are used in two policies within ZANMOD.

The first switch ('POV') is in respect of the poverty policy (spl_zn). This policy provides two poverty lines, each of which has two variants—a 'normal' variant and a post fiscal variant. The two poverty lines are the basic needs poverty line and the food poverty line. By default, the two variants of the food poverty line are switched OFF (and so by implication the two variants of the basic needs poverty line are switched ON).

The second policy to use extensions is the policy tva_tex_cbs_zn and the switch is called 'tva_tex_cbs': by default, the VAT and excise duty policies calculate indirect taxes on the basis of constant consumption. The additional policy tva_tex_cbs_zn calculates indirect taxes on the basis of constant budget shares. By default, the switch 'tva_tex_cbs' (which determines whether the policy tva_tex_cbs_zn is switched on or not) is switched OFF.

2.3 Social benefits

2.3.1 Zanzibar Universal Pension Scheme (ZUPS) (boa_zn)

In April 2016, Zanzibar became the first territory in East Africa to implement a universal pension financed fully by the government (Galvani and Knox-Vydmanov 2017). This is a non-contributory, universal scheme for elderly individuals. The ZUPS is administered by the Department of the Elderly and Social Welfare, which is the Social Protection Unit of the ministry.

Definitions

For the purpose of this benefit, elderly individuals are defined as those aged 70 years and above.

Eligibility conditions

This benefit is payable to all individuals aged 70 and above, who have been Zanzibar residents for at least 10 years between the age of 18 and the age of retirement, irrespective of whether they are also in receipt of a pension from the ZSSF. It is not payable to the small number of individuals who are in receipt of the old age allowance (*Posho la Wazee*).

Income test

There is no income test.

Benefit amount and duration

The benefit is paid at TZS 20,000 per month. The amount has been held constant since the benefit was introduced in 2016 (ILO 2016) but has increased in 2023.

ZANMOD notes

Residence history is not captured in ZANMOD's underpinning dataset so, as a proxy for this eligibility criterion, individuals in the dataset are excluded from this policy if they are not Tanzanian citizens. Depending on how many older people from mainland Tanzania are present in the survey (i.e. older people who are Tanzanian citizens but who have not yet resided in Zanzibar for the minimum duration of ten years), this may result in a slight overestimate of eligibility.

2.3.2 Basic social assistance (PSSN: fixed basic cash transfer) (*bsa_zn*)⁶

Definitions

For the purposes of this benefit, a child is defined as aged 5–17 years inclusive, and an infant is defined as aged 0–4 years inclusive. This benefit is applied at the household level.

Eligibility conditions⁷

TASAF defines the eligibility conditions for this benefit as follows:

- Households with very low and unpredictable income compared with other households in the community.
- Households that cannot afford or cannot be certain that they can afford to have three meals per day.
- Households located in extremely poor environments/settlements. TASAF further elaborated that this criterion takes into account the number of rooms, windows, and bedrooms of the house; type of foundation of the house; construction material used for the house; and the type of floor, roof, and walls.

Identification of potential beneficiary households takes place after a village assembly has elected and formed a community team (or community management committee). The community team is briefed about the targeting process, and the community team and local government authority (LGA) facilitators are then responsible for identifying potential beneficiary households using pre-determined criteria that have been agreed upon at the village assembly meeting. The pre-determined criteria are themselves based on a standard criterion that is reviewed and agreed upon by the village assembly.

⁶ This section is taken from the TAZMOD Country Report (Leyaro et al. 2023) as the rules are identical to mainland Tanzania.

⁷ The details listed in Sections 2.3.1 and 2.3.2 relate to PSSN Phase 1, which in practice ran until late 2020.

The standard criterion is that households should be below the food poverty line of TZS26,085.50 per adult equivalent per month for the systems up to and including 2017 (NBS 2014: 54); and below TZS33,748 for the 2018 and 2019 systems (MoFP-PED and NBS 2019: 9).⁸

Once the community teams have produced a final list of households, village assembly meetings are convened to approve the list. Each community team has two members: one person with a good knowledge of households in the village so that they can help identify those most in need and one person with at least primary school education to administer paperwork used in targeting and enrolment activities. Once potential beneficiaries have been identified, key household data are collected which are then entered into the Unified Registry of Beneficiaries (URB) at the local government level. The TASAF monitoring unit (TMU) then applies the proxy means test (PMT) and each household that has been entered into the URB receives a welfare score. Households whose welfare score falls below the food poverty line are considered eligible for the programme (even if this means that the resulting beneficiary number for the district is above the target set by the resource allocation formula).

In addition to the basic transfer, targeted households with children are eligible for conditional transfer, and households with able-bodied people of working age are eligible for the public works programme. This matching exercise is automated using the URB. The TMU then provides the LGAs with lists of households accepted and rejected by the PMT who, in turn, take these lists to the villages for a final round of community validation.

Income test

A proxy means test (PMT) is applied (see above) in order to identify households that are likely to be below the food poverty line, which avoids the need to collect income or expenditure data at the point of application (Leite 2012). The PMT was derived using regression analysis of variables in the Household Budget Survey (HBS), with the dependent variable being those below the food poverty line.

Benefit amount and duration

The amount payable is TZS10,000 per month per household that contains one or more adults, and TZS4,000 per month per household that contains one or more children or infants. In practice, this benefit is paid every two months in order to reduce the costs of implementation.

In PSSN Phase 2 (from 2021 onwards), the amount payable is TZS12,000 per month per household that contains one or more adults, and TZS5,000 per month per household that contains one or more children or infants.

ZANMOD notes

It is not possible to simulate the initial ranking of villages that is undertaken in order to prioritize areas for support (Leite 2012).

It is also not possible to simulate the multi-stage decision-making roles of the village assembly and the community team.

It was not necessary to implement the PMT, as households below the food poverty line could be identified in the HBS, without the need to implement the PMT. Indeed, the PMT was derived using

⁸ In practice, TASAF has raised this threshold slightly to capture approximately 14 per cent of the population, rather than the 10 per cent captured below the food poverty line, in recognition that those just above the line will be at risk (personal correspondence with TASAF).

regression analysis of variables in the HBS, with the dependent variable being those below the food poverty line (Leite 2012).

2.3.3 Basic social assistance—conditional (PSSN: variable conditional cash transfer) (bchot_zn)^{9,10}

Definitions

For the purpose of this benefit, children are divided into four groups: pre-primary (aged 0–6 years inclusive), primary (aged 7–13 years inclusive, Standard I–VII), ordinary level secondary (aged 14–17 years inclusive, Form 1–4), and advanced secondary (aged 18–19 years inclusive, Forms 5 and 6). This benefit is applied at the household level.

Eligibility conditions

TASAF defines the eligibility conditions for this benefit as follows. The first three are the same as the non-conditional cash transfer described above:

- Households with very low and unpredictable income compared with other households in the community.
- Households that cannot afford or cannot be certain that they can afford to have three meals per day.
- Households located in extremely poor environments/settlements.

In addition, there are the following selection criteria:

- Household with school-age children (7–17 years inclusive) that cannot afford to register or enrol the children in school or where the children have dropped out of school because the household cannot afford to send them to school.
- Households with children (0–6 years inclusive) that do not attend the clinic to get health services/treatment.
- Households with pregnant women.

The conditionalities are as follows:

Education: Annual enrolment of school-age children in primary and secondary schools (where available) and regular attendance of at least 80 per cent of the school days per month.

Maternal and infant health: all pregnant women within beneficiary households shall attend a minimum of four prenatal medical examinations; they should deliver at a health facility or be assisted by skilled personnel and attend a post-natal check-up according to the country's health protocol. Children younger than two years shall attend regular check-ups at health services at least once every month, including regular growth monitoring and distribution of micronutrients and counselling. All children of the household aged between 24 and 60 months shall attend routine health services at least once every six months; for all children younger than five years, the health facility will provide full immunization.

Income test

The same PMT is applied as for basic social assistance (see above) in order to identify households that are likely to be below the food poverty line (Leite 2012).

⁹ This policy was created afresh for 2021 and named bsa01_zn in ZANMOD as it contains an additional category relating to people with disability.

¹⁰ This section is taken from the TAZMOD Country Report (Leyaro et al. 2023) as the rules are identical to mainland Tanzania.

Benefit amount and duration

A flat rate amount of TZS4,000 per month is paid to households that contain one or more pre-primary school-age children (aged 0–6 years inclusive). TZS1,000 per month is paid per primary school-age child (for a maximum of four children of this age). TZS2,000 is paid per child in lower secondary school (for a maximum of three children of this age) and TZS3,000 per child in high secondary school (for a maximum of two children). In practice, this benefit is paid every two months in order to reduce the costs of implementation; so, for example, TZS2,000 is paid per primary school-age child six times per year. No more than TZS19,000 in total can be paid per month per household for the basic cash transfer plus the variable cash transfer.

In PSSN Phase 2 (from 2021 onwards), a flat rate amount of TZS5,000 per month is paid to households that contain one or more pre-primary-school-age children (aged 0–5 years inclusive). TZS2,000 per month is paid per lower-primary-school-age child and TZS4,000 per month per upper-primary-school-age child, but the combined payment cannot exceed TZS12,000. TZS6,000 is paid per child in lower secondary school and TZS8,000 per child in upper secondary school, but the combined payment cannot exceed TZS16,000. In addition, a payment of TZS5,000 per month is paid to households containing one or more disabled people. No more than TZS55,000 in total can be paid per month per household for the basic cash transfer plus the variable cash transfer.

ZANMOD notes

This benefit is targeted at households where children are unable to attend school or the clinic because of household poverty. The HBS does not measure pregnancy status of women and so this criterion cannot be simulated. Receipt of the benefit is dependent on the child attending school and going to the clinic. This raises the conundrum when designing the policy in ZANMOD that potentially eligible children would be those who do not comply with the conditions, whereas currently eligible recipients will be complying with the conditions. For the time being, eligibility for this benefit in ZANMOD is simply linked to the existence of children of the various age ranges.

2.3.4 Public works programme (PSSN: public works) (bun_zn)¹¹

Definitions

The public works programme enables beneficiaries to earn additional income through their participation in public works during four months of the lean season.

Eligibility conditions

The beneficiary must be of working age and the household must comply with the same eligibility conditions as for the basic cash transfer and must have been part of that initiative for six months.

Income test

This is the same as for the basic cash transfer.

Benefit amount

The public works programme offers a guaranteed 15 days of paid work per month for four months to enrolled households targeted under the PSSN. The daily wage rate is TZS3,000 (or USD1.5 per day), and the total a household can earn in a year is USD90. The programme runs for three years.

In PSSN Phase 2 (from 2021 onwards), the daily wage rate remained set at TZS3,000 per day.

¹¹ This section is taken from the TAZMOD Country Report (Leyaro et al. 2023) as the rules are identical to mainland Tanzania.

ZANMOD notes

Within ZANMOD it is only possible to identify potentially eligible households on the basis of receipt of the basic cash transfer. The number of potentially eligible households will not take into account the limited duration of the scheme (see benefit amount). Although in practice an eligible household is able to choose which member of the household will participate in the scheme, participation is assigned to the head of the household in ZANMOD. This means that analysis of this policy by gender (whether with respect to the gender of the household head or at individual level) would be problematic.

2.4 Social contributions and taxes

2.4.1 Pension fund contributions (ZSSF Mandatory) (tscee_zn and tscer_zn)

Liability to contributions

This scheme provides various benefits to members subject to their work record in the formal sector and the contributions they paid during their formal sector employment. The benefits offered under the ZSSF mandatory scheme are old age benefits, invalidity (disability) benefits, survivor's pension, maternity benefits, education loan, start-up life loan, and pensioner's loan.

Income base used to calculate contributions

The employee's gross income.

Contribution rates

The employee contributes 7 per cent of their monthly salary. The employer contributed 13 per cent of the employee's salary in 2019–22, and 14 per cent in 2023 (RGoZ 2016).¹²

ZANMOD notes

In ZANMOD the contributions are simulated but not the benefits, as there is insufficient information in the input dataset about contribution history.

It is assumed that all formal sector employees contribute to this scheme and that there are no voluntary members.

2.4.2 Personal income tax (tin_zn)

Personal income tax is typically divided into three categories: presumptive income tax, which is a simplified tax payable by people whose turnover from self-employment is less than TZS100 million per year; personal income tax for account cases, which is payable by people whose self-employment income exceeds the presumptive tax threshold; and PAYE for those in receipt of income from salaries and wages (TRA 2023f). An employer is required by law to deduct income tax from an employee's taxable salary or wages.

Tax unit

The tax unit is at the level of the individual.

¹² The employer contribution rate increased to 14 per cent in January 2023 for the private sector and July 2023 for the civil service.

Exemptions

Part III Division 1 Subdivision C of the Income Tax Act Chapter 332 (revised 2019) (TRA 2023f) sets out the conditions for incomes that are exempt from income tax. The items are listed in Schedule II of the Act and include alimony, maintenance, and child support.

Tax allowances

We define tax allowances as any amount subtracted from pre-tax income (including social insurance contributions). Differently from Verbist (2004), there is no distinction between those that are fixed amounts (tax allowances) and those whose level is a function of pre-tax income (deductions). Tax rebates are deductions from tax payable (as distinct from tax allowances that are deductions from pre-tax income).

In Zanzibar, contributions to health insurance schemes are treated as tax allowances (Paragraph 7(3)(c) of the Income Tax Act Chapter 332 (revised 2019)) (TRA 2023f). In addition, there are various capital and depreciation allowances where an individual is undertaking a business that is not subject to turnover tax. The deductions are set out in Part III Division 1 Subdivision D of the Income Tax Act Chapter 332 (revised 2019) (TRA 2023f).

Tax base

Personal income tax: Income from employment, property, land, agriculture, 'other income', and—for those whose turnover exceeds TZS100 million per year in 2019–23—self-employment income. For further details see Part III Division I Subdivision B of the Income Tax Act Chapter 332 (revised 2019) (TRA 2023f).

Presumptive income tax: Turnover from self-employment—for those whose turnover is less than TZS100 million per year (for the years 2019–23).

Tax schedule

Personal income tax has five tax bands (see Table 2.4).

Table 2.4 Personal income tax bands, 2019–23

| Tax band | Income band 2019 (TZS per year) | 2019 Rate (%) | Income band 2020 (TZS per year) | 2020 Rate (%) | Income band 2021–23 (TZS per year) | 2021–23 Rate (%) |
|----------|------------------------------------|------------------|------------------------------------|------------------|---------------------------------------|---------------------|
| 1 | 0–1,800,000 | 0 | 0–2,160,000 | 0 | 0–3,240,000 | 0 |
| 2 | 1,800,001–4,320,000 | 13 | 2,160,001–4,320,000 | 9 | 3,240,001–6,240,000 | 8 |
| 3 | 4,320,001–6,480,000 | 20 | 4,320,001–6,480,000 | 20 | 6,240,001–9,120,000 | 20 |
| 4 | 6,480,001–8,640,000 | 25 | 6,480,001–8,640,000 | 25 | 9,120,001–12,000,000 | 25 |
| 5 | >8,640,000 | 30 | >8,640,000 | 30 | >12,000,000 | 30 |

Source: Authors' construction based on public income tax legislation (URT 2019, 2020, 2021, 2022a).

Presumptive income tax rates are shown below in Table 2.5.

Table 2.5 Presumptive income tax bands, 2019–23

| Tax band | Income band (TZS per year) 2019–21 | Rate (%) 2019–21 | Income band (TZS per year) 2022–23 | Rate (%) 2022–23 |
|----------|--|---------------------|--|---------------------|
| 1 | 0–4,000,000 | 0 | 0–4,000,000 | 0 |
| 2 | 4,000,001–14,000,000 | 3.0 | 4,000,001–11,000,000 | 3.0 |
| 3 | 14,000,001–100,000,000 | 3.5 | 11,000,001–100,000,000 | 3.5 |

Note: Bands match those included in ZANMOD V1.1.

Source: Authors' construction based on public income tax legislation (URT 2019, 2020, 2021, 2022a).

ZANMOD notes

Personal income tax for account cases and for those in receipt of income from salaries and wages is treated as a single policy in ZANMOD as the rules are the same. For employed persons, simulation of personal income tax is restricted to those in the formal sector. Withholding tax is not taken into account in ZANMOD because it is a payment administration mechanism rather than a tax.

2.4.3 VAT (tva_zn)

Tax unit

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

Exemptions

Zero-rated supplies are listed in the First Schedule of the VAT Act No.4 of 1998, and VAT-exempted items are listed in the Second Schedule (ZRA 2023b).

Tax base

VAT is applied to transactions of certain goods and services.

Tax schedule

The standard rate of VAT in Zanzibar is 15 per cent.

ZANMOD notes

The tax unit for the purposes of the VAT policy in ZANMOD is the household. VAT is simulated based on the household's purchases of goods and services. A total of 565 purchasable items are listed in the income list 'il_exp_vat01', with zero-rated or VAT-exempt items shown as 'n/a'—this income list relates to the HBS 2019–20, as the COICOP codes comprise those provided in that dataset. Where the survey makes a distinction between the location of purchase (Zanzibar or mainland Tanzania), only items that were purchased in Zanzibar are included in the model's dataset. As the point of origin of the items purchased in Zanzibar is not captured by the survey, it is further assumed that the Zanzibar VAT rates are applicable, and that the revenue accrues to the ZRB (whereas in practice the ZRB and TRA undertake monthly reconciliations for funds disbursements).

2.4.4 Excise duty (tex_zn)

Tax unit

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

Tax base

Excise duty is payable on items specified in the Excise Duty Act No. 8 of 2017 (ZRA 2023a).

Tax schedule

The excise duty payable on different items is specified in Schedule 1 of the Excise Duty Act No. 8 of 2017 and has not been updated during the period 2019–23.

ZANMOD notes

Excise duty is only simulated for certain items in ZANMOD (tobacco products and kerosene/paraffin). It is assumed that these products were purchased in Zanzibar as no distinction is made in the survey. As the point of origin of the items purchased in Zanzibar is not captured by the survey, it is further

assumed that the Zanzibar VAT and excise rates are applicable, and that the revenue accrues to the ZRB (whereas in practice the ZRB and TRA undertake monthly reconciliations for funds disbursements).

Given that VAT is payable on the cost of these certain items *after* excise duty, a decision was made to simulate excise and VAT for these items in the same ZANMOD policy.

Of the items that are customarily included in the SOUTHMOD models (alcohol, tobacco, and fuel), excise duty on petrol/diesel cannot be calculated because the survey makes no distinction between petrol and diesel; and there were too few cases of alcohol purchases in the survey to enable this to be modelled robustly.

3 Data

3.1 General description

ZANMOD v1.1 contains an input dataset drawn from the Zanzibar Household Budget Survey 2019/20 carried out by the Office of the Chief Government Statistician (OCGS).

The main objective of the HBS 2019/20 is to provide up-to-date information on poverty, consumption, and other socio-economic indicators for Zanzibar in order to monitor and evaluate progress with regard to poverty reduction and the efficiency of development policies, programmes, and projects aimed at improving households' living standards. The specific aims of the HBS 2019/20 are to: review household consumption patterns; help in rebasing National Accounts statistics (GDP) and the Consumer Price Index (CPI); provide baseline data on other socio-economic indicators for a measure of multi-dimensional poverty; and provide information on the distribution of household income and expenditure (OCGS 2020: 1).

The HBS 2019/20 is a cross-sectional survey that collects information from private households on household income and expenditure, economic activities, housing characteristics, and asset ownership. The survey is in eight parts (forms) as shown in Table 3.1.

The HBS 2019/20 is representative at the national (Zanzibar) level, for urban and rural residence and for the 11 districts of Zanzibar.

The survey used a two-stage stratified sampling design. At the first stage, the 235 Zanzibar Enumeration Areas (EAs) from the 2012 Tanzania Population and Housing Census were grouped by districts (11) and by rural-urban location. The EAs were then drawn using probability proportional to size, with size based on the total number of households in each EA. At the second stage, private households (i.e. excluding institutional households such as military barracks, hostels, etc) were drawn using systematic random Sampling from the listed households. In total, 2,820 households were sampled.

Table 3.1: HBS 2019/20 survey components

| | |
|------------------|---|
| Form I | Demographics, parents' survivorship, citizenship, education and literacy, health, labour market indicators, non-farm household businesses, individual non-wage income migration, birth delivery and breast feeding, non-communicable diseases (NCDs), disability, and nutrition for children under the age of five. |
| Form II | Dwellings; utility; water and sanitation, transport and communications, recall expenditures for main dwelling, durable goods, furniture, furnishings, tools and appliances for household maintenance, garments and footwear, health expenditures, transport and communication, vehicles purchased, transportation, entertainment facilities, expenditures to buy or rent any of the specified equipment, expenditures on personal trips abroad. |
| Form III | Businesses and individual income; non-farm household businesses and investment in last 12 months. |
| Form IV | Agriculture and livestock, livestock by products, food security, food consumed, non-wage, social security, access to community resources and crops grown by households. |
| Form V | Household diary for recording daily household consumption and expenditure over a 14-day period. |
| Form VI | Individual diary for recording daily consumption and expenditure for each household member aged five and above for 14 days. |
| Form VII | Time use. |
| Form VIII | Transfer to and from Zanzibar, demographic characteristics of sender, frequency and value of cash received, usage of cash received, items in kind received, and household expenditure on outward personal transfers. |

Source: Authors' own table quoting forms listed in OCGS (2020: 3).

Table 3.2: ZANMOD database description

| | |
|--------------------------------|---|
| Original name | Household Budget Survey |
| Provider | Office of the Chief Government Statistician |
| Year of collection | 2019/20 |
| Period of collection | 1 March 2019 to 28 February 2020 |
| Income reference period | The immediate last seven days or the previous month, three months, or year before the first date of interview |
| Sample size | 14,838 individuals and 2,788 households |
| Response rate | 99% |

Note: For further details about the survey, see OCGS (2020).

Source: Authors' compilation.

A household is defined as 'People who live together and share income and food' (OCGS 2020: 4). The usual multi-person household contains husband, wife, and children. Other relatives, boarders, and visitors are included in the household if they 'pool their resources, share their consumption and have been living with the household for at least two weeks' (OCGS 2020: 5). The household head is identified as the member of the household who 'holds the role of decision maker in that household', usually taking part in the 'economy, control and welfare of the household' (OCGS 2020: 5).

The data has been analysed by the OCGS (2020), focusing on demographics, education and health, dwellings, economic activity (including agricultural activities), household consumption and expenditure, income poverty and inequality, business and individual income, business trips and recreation, food security and nutrition, gender and time use, internal migration, transfer of goods and services, and non-communicable diseases.

3.2 Data adjustment

3.2.1 General data adjustments

The survey was directly supplied by the OCGS as over 100 separate data files from Forms 1–5 and 8, plus a file containing poverty variables constructed by OCGS. These files were merged with appropriate linkage variables which varied by data file depending on the files to be merged and the availability of linkage variables within the files. The linkage variables utilized were *interview_key* (short form

interview identification number) or a unique identifier created by combining *interview_key* with a variable giving the ID number recorded in *F3S1_RtheReal1* (variously called *f3s1_rth*, *F3S1_RtheReal1_id*, or *SN*).

For certain files, a few cases (between one and seven) did not match with the full person level Demographics file which was used as the master file. This information was therefore disregarded. No cases were dropped from the master file.

3.2.2 Income shocks resulting from the COVID-19 pandemic

Since ZANMOD uses survey data from before the pandemic, incomes in the dataset are not adjusted downwards automatically despite the economic shock resulting from the COVID-19 pandemic. Most SOUTHMOD models include a policy to adjust incomes 'on model' in 2020 and 2021 (Lastunen 2022), however this was not undertaken in ZANMOD due to the lack of Zanzibar-level data on the impact of the pandemic on GDP by industry type in Zanzibar.¹³

3.3 Imputations and assumptions

Although consistency checks were undertaken at the stage of the data collection (OCGS 2020), inconsistencies in the data were apparent.

The possible responses to the question on marital status (*F1S1_Q8*) are single, married, divorced, separated, widowed, living together, and not mentioned. Tanzania's Marriage Act sets the minimum age for marriage as 18 years for boys and 15 years for girls (with parental consent), but both girls and boys can marry at 14 years of age with the court's permission. For the 4,366 cases with a missing value, all were aged below 14 years and so were recoded as single in the *dms* variable. Four cases with a not mentioned value (distinct from missing) were all recoded as single as they were either under 14 or the son/daughter or other relative of the head of household. In addition, 17 children under 14 who were coded as married were recoded as single (the 25 aged 14–17 who were coded as married were left as such) and the one under 18 coded as divorced was recoded as single. Finally, any cases with a missing value who were spouses of the head of household were recoded as married in the *dms* variable.

Using *dms* and the person ID number (*SN*), all the spouses of the head of household were assigned the head's ID number in *idpartner*, and 2,178 of the 2,788 heads (78 per cent) were assigned their spouse's ID number. For polygamous marriages, the senior wife (i.e. the spouse with lowest *SN*, who was usually the oldest wife) was identified and defined as the partner. Because of a lack of information about partners in the dataset, there were 528 individuals aged 14 or over who were recorded as married or living together (11 per cent) for whom a partner could not be identified.

The compulsory variables *idfather* and *idmother* were created using the person ID number (*SN*) and the variable relationship to head of household (*F1S1_Q2*) and could be checked against *F1S2_Q27* and *F1S2_Q28* which record whether the father/mother is in the household, elsewhere, or dead. Children were assigned the head's ID number where they were either the son/daughter or stepson/stepdaughter of the household head. After this process, a large number of children under 18 were missing the information for *idfather* and *idmother* (36 and 89 per cent, respectively). Some additional cases were captured by assigning the spouse of the head of household to children missing either *idfather* (in the case of a female head with a male spouse) or *idmother* (in the case of a male

¹³ The model for mainland Tanzania (TAZMOD) does include adjustments for the shock of the pandemic in 2020 and 2021. However, the external data that was used for this purpose applies to the whole of URT and could not be obtained for just Zanzibar; when the composite URT-level data was applied and tested in ZANMOD, the simulated results for 2020 and 2021 corresponded less well to the external validation data on tax revenue than without the inclusion of this adjustment, so a decision was made not to include the COVID-adjustment option in ZANMOD.

head with a female spouse). This resulted in 31 per cent of children under 18 still with a missing value for *idfather* and 26 per cent still with a missing value for *idmother*. There were 1,813 children (25 per cent) with a missing value for both *idfather* and *idmother*. As a final step, all children without a value for *idfather* or *idmother* were assigned to either the male or female household head as a large proportion were the grandchildren or other close relative of the household head.

Income from employment was assumed to be net pay (the question asks 'How much in TZSH cash did the person earn from their PRIMARY job?') and was converted to gross employment income (*yem*) using a technique described below. Analysis revealed outliers in the data, so *yem* was capped at the 93rd percentile.

In order to calculate net taxable income for self-employed income (*yse*), it was necessary to deduct expenses from sales. A large number of negative values were generated where expenses exceeded sales. This may be as a result of the different periods for the questions used to calculate *yse*, where the only question relating to income/sales was for the last 30 days, while the five questions relating to expenses were for either the last month or the last 12 months (which was converted to monthly by dividing by 12). However, many of these cases are traders with small turnovers and therefore will be covered by presumptive tax (a tax on turnover, which does not require information on expenses) rather than *yse* being included in personal income tax.

Income from agriculture (*yag*) is the sum of livestock sales minus the sum of livestock costs (crop sales and costs are captured under household business in *yse*), which again generated a large number of negative values.

VAT and excise duty (where applicable) were removed from expenditure items so that expenditure is brought into the model ex-VAT and excise. This simplifies the modelling of indirect taxes on the model. The VAT and excise duty removed are carried into the model as the variables for imputed VAT (*tvaiiv*) and imputed excise duty (*texiv*). Any cigarettes, tobacco, or kerosene expenditure and quantity values were set to zero where the base expenditure, after having subtracted the quantity-based excise, yielded a negative figure.

As is indicated elsewhere, very small numbers of households purchased alcohol which meant that it was not possible to model excise duties on alcohol purchase. Furthermore, the question on motor fuel did not distinguish between petrol and diesel, therefore excise duties on purchase of motor fuel could not be modelled. In consequence, only the VAT was removed from these items.

It was possible to model excise duties on kerosene, but this required imputation in some cases. Purchase of kerosene was recorded in two ways. In the diary, the cost of the kerosene and the quantity purchased over the past two weeks were recorded. However, the purchase of kerosene over the previous three months was also recorded, but only the cost was recorded, not the amount purchased. In order to estimate excise duties to subtract for the non-diary purchase, it was necessary to use the diary data to estimate the average cost per litre and to estimate the quantity of kerosene purchased in the general questionnaire by dividing the cost by the average cost per litre.

A number of variables were created for the calculation of poverty on the model within Statistics Presenter. In order to produce an equivalence scale on model which matches that used by OCGS in their calculations of consumption poverty, a variable called *smf* was created. This is a multiplicative factor based on the number of days an individual was present in the household (variable *f5s1r1_q*), summed across the household. It is used on the model to adjust the equivalence scale values for each age/sex group.

An attempt was made to simulate contributions to the NHIF social insurance scheme in ZANMOD. Although the survey data did collect information on contributions to the scheme, the variable that measures contributions to the scheme was inconsistent when compared with related variables and so

could not be used. For example, only 61 respondents stated that they had contributed to the scheme, and yet 407 stated that they are covered by the scheme; conversely, 11 cases stated that they contribute to the scheme but also that they are not covered by it. As an alternative, various proxies were explored, but these resulted in significant over-simulations of contributors compared to the external validation data, so a decision was made not to include the policy in ZANMOD V1.1.

3.3.1 Time period

The survey data were collected between March 2019 and February 2020. Income data were gathered in relation to the immediate last seven days or the previous month, three months, or year before the first date of interview.

All monetary variables were inflated or deflated to a July 2019 time-point using CPI data provided by OCGS. The variable *xhh* relating to household consumption was excluded from this inflation/deflation as it had already been temporally adjusted by OCGS.

3.3.2 Gross incomes

Incomes from wages and salaries are reported net of personal income taxes in the HBS 2019/20. The model in turn requires gross incomes in order to calculate personal income tax. Accordingly, it was necessary to impute gross incomes. This process involved the following steps:

- 1 Creating a temporary gross earned income variable initially equal to net income plus TZS10.
- 2 Computing income tax using the temporary gross income variable.
- 3 Adding the model-generated income tax to the original net income (thereby producing an imputed gross income) and comparing this to the temporary gross income.
- 4 If the difference exceeded TZS10, the temporary gross income was incremented by TZS10 and the process was repeated. The process required approximately 350,000 iterations, at which point the temporary gross income was within TZS10 of recorded net income.

3.3.3 Disaggregation of harmonized variables

It was not necessary to disaggregate composite variables for the ZANMOD dataset.

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 OCGS provided CPI data, including overall CPI and then the CPI for different categories. The base year was July 2022. Given that the Zanzibar financial year runs from 1 July to 30 June, a decision was made to uprate the model to a time point of 1 July in each year and the uprating indices were adjusted accordingly. The list of uprating factors can be found in Table 3.3.

Table 3.3: ZANMOD uprating factors

| Index | Constant name | Values of the indices | | | | | Income components uprated by the index |
|--------------|------------------|-----------------------|------|------|------|------|--|
| | | 2019 | 2020 | 2021 | 2022 | 2023 | |
| Overall CPI | \$f_CPI_Overall | 0.9 | 0.94 | 0.96 | 1 | 1.03 | |
| Food CPI | \$f_CPI_Food | 0.89 | 0.95 | 0.96 | 1 | 1.05 | Food |
| Non Food CPI | \$f_CPI_Non_Food | 0.91 | 0.93 | 0.95 | 1 | 1.01 | Non-food |
| Alcohol CPI | \$f_CPI_Alcohol | 0.9 | 1.01 | 1 | 1 | 1 | Alcohol |
| Tobacco CPI | \$f_CPI_Tobacco | 0.9 | 1.01 | 1 | 1 | 1 | Tobacco |
| Fuel | \$f_CPI_Fuel | 0.84 | 0.84 | 0.92 | 1 | 1.05 | Energy and fuels |

Note: CPI, consumer price index. Base for all estimates: July 2022=1.

Source: Authors' compilation based on OCGS (2023).

3.5 Consumption levels

Consumption levels are based on the original reported consumption levels in the input data (xhh created from *AECONS* multiplied by *adj_aeq*). These levels are uprated 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 into account changes in market incomes (e.g. COVID-related decreases in earnings) as well as changes in benefits and contributions. 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).

4 Validation

4.1 Aggregate validation

ZANMOD results have been validated against external benchmarks where feasible for the period 2019–23. The main discrepancies between ZANMOD results and external benchmarks are discussed in the following sub-sections. Factors that may explain the observed differences are also discussed.

4.1.1 Validation of incomes inputted into the simulation

It was not possible to validate the number of recipients of various types of market income in the input dataset using external statistics, nor the aggregate annual amounts of various types of market income. It was also not possible to assess the extent to which non-simulated policies are adequately captured.

4.1.2 Validation of outputted (simulated) incomes

Table A2 in Appendix compares the number of recipients of various types of simulated benefits/number of payers of simulated taxes or simulated social insurance contributions in ZANMOD with external statistics. Notably, ZANMOD does not simulate any liabilities for presumptive income tax, whereas a small number of individuals (2,184 in 2021) do pay this tax in Zanzibar. This is because no individuals in the survey met the criteria. In contrast, ZANMOD over-simulates the number of people liable for PIT by four times in the baseline, reducing to 2.3 times in 2021. ZANMOD's simulations of contributors to the ZSSF scheme align closely with the external data in the baseline year 2019 as well

as 2020 and 2022.¹⁴ The external figures for PSSN were obtained at household level and so reported simulations are also presented at household level: for 2022, ZANMOD simulates just 34 per cent of the reported number of beneficiary households. There are several reasons why the simulated and reported numbers of beneficiary households may differ (see Wright et al. 2019). ZANMOD simulates a higher number of ZUPS recipients than in the external validation data—this may be due to various factors including non take-up, the inclusion by the model of citizens who have not been resident in Zanzibar for the required minimum period of ten years (as the survey data does not capture residence history), or the weights for older individuals in the survey might be too large.

Table A3 compares the simulated and published aggregate yearly amounts for the simulated taxes and benefits in 2019–23. For direct taxes in 2022 (i.e. presumptive tax plus PAYE plus those who prepare accounts), ZANMOD simulates 57 per cent of the external figure if revenue from presumptive tax and PIT are pooled. This fact, along with the over-simulation of people with direct tax liabilities by ZANMOD, implies that the survey may under-represent high-income earners in Zanzibar (or that the capping of anomalous high incomes reduced simulated tax by too much), and that it may over-represent low-income earners, though there may be a separate issue of non-compliance. The marked increase in personal income tax revenue (PAYE and individuals) in 2022 may in part be due to the Zanzibar Government having amended the civil-servant salary scale that year. Conversely the decrease in presumptive tax revenue received by TRA in 2022 may in part be due to changes made that year in Zanzibar by ZRA to stamp duty that affected small traders.¹⁵

Expenditure on PSSN (cash transfer) increased steeply in 2022, so ZANMOD’s simulated expenditure in that year was just 59 per cent of reported expenditure, compared to 97 per cent for 2021.

ZANMOD simulates only 5 per cent of local excise duty revenue in 2022. This is because the simulated figure is only for selected items. Finally, ZANMOD under-simulates VAT for all years (at just 45 per cent of revenue from local VAT in 2022). The marked increase in VAT revenue in 2022 is likely to be because of improved efficiency in virtual fiscal device (VFD) enforcement, the completion of planned tax audits and verifications, the enforcement of withholding tax on existing government projects, and increased efficiency and enforcement related to the transfer of goods between mainland Tanzania and Zanzibar.¹⁶

4.2 Income distribution

In Zanzibar, poverty analysis is undertaken using consumption data, so the income-based poverty analysis of the ZANMOD output data will differ greatly from the published figures, but the consumption-based poverty analysis is similar to the published figures. The coefficients for the Adult Equivalence Scale used by the OCGS are shown in Table 4.1.

¹⁴ It is likely that the fall in number of contributors in 2022 (compared to 2021) is because the government did not undertake a recruitment exercise to the scheme that year (personal correspondence, ZSSF Zanzibar).

¹⁵ Personal correspondence with TRA Zanzibar Branch.

¹⁶ Personal correspondence with Tax Unit, Ministry of Finance, Zanzibar.

Table 4.1: Coefficients for the Adult Equivalence Scale

| Age (years) | Male | Female |
|-------------|------|--------|
| 0–2 | 0.40 | 0.40 |
| 3–4 | 0.48 | 0.48 |
| 5–6 | 0.56 | 0.56 |
| 7–8 | 0.64 | 0.64 |
| 9–10 | 0.76 | 0.76 |
| 11–12 | 0.80 | 0.88 |
| 13–14 | 1.00 | 1.00 |
| 15–18 | 1.20 | 1.00 |
| 19–59 | 1.00 | 0.88 |
| 60+ | 0.88 | 0.72 |

Source: Authors' adaptation from NBS (2014: 52). Reproduced under NBS' [Licence Agreement](#). The OCGS uses the same scale; see Table A3.1 in OCGS (2020: 208).

4.2.1 Income inequality

In Zanzibar, inequality is measured with reference to consumption, not income. Table A4 in Appendix shows the ZANMOD Gini coefficients for 2019–23 (0.31), which is the same as the published Gini coefficient using the HBS 2019/20. Using income data, the Gini coefficient in 2023 was 0.58.

4.2.2 Poverty rates

Table A5 in Appendix shows that using the ZANMOD output data for 2023, 35.8 per cent of the population were in basic needs poverty, and 14.4 per cent were in food poverty, using consumption data. Income-based poverty levels are much higher at 92.9 per cent for basic needs poverty and 88.3 per cent for food poverty in 2023.

4.3 Summary of 'health warnings'

As far as we have been able to ascertain, the income data in the HBS dataset has not been used previously for research purposes. Although some data cleaning processes have been undertaken (see data section), there are several ways in which this work could be extended.

Every effort has been made to collate the precise tax and benefit rules, but this was difficult to achieve and has been an iterative process.

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Appendix

Table A1: Unemployment and employment figures, 2019

| | ZANMOD 2019 (A) | External 2020/21 (B) | Ratio (A/B) |
|----------------------------------|-----------------|----------------------|-------------|
| Number of employed individuals | 563,919 | 603,123 | 93.5 % |
| Number of unemployed individuals | 77,096 | 147,599 | 52.2 % |

Notes: The Integrated Labour Force Survey is used for the external figures. This has a different time-point (2020/21) to ZANMOD (2019) and was undertaken during the COVID-19 pandemic, which will impact on the employment figures. Column A: employed individuals = weighted total of those who had income from employment (yem) or self-employment (yse). Unemployed individuals = weighted total of those who stated that their main status in the past 12 months is 'long term unemployed', and who did not do any work in the last week, those self-employed and employed who did not have a job or enterprise to which they would return, and pensioners (those who were retired, too old to work, or over 60 years old). Column B: employed individuals = persons aged 15 and above who worked either for pay in cash or in kind during the reference week (paid employees) or who were in self-employment for profit or family gain, and persons who were temporarily absent from work but would definitely return. Unpaid family workers in family businesses are included in the employed category.

Source: Column A: ZANMOD version 1.1. Column B: NBS (2022b).

Tables A2 and A3 are found after Tables A4 and A5.

Table A4: Income inequality, 2019–23

| Gini coefficient | 2019 | 2020 | 2021 | 2022 | 2023 |
|--------------------------------|------|------|------|------|------|
| ZANMOD (A) | | | | | |
| Income-based | 0.58 | 0.58 | 0.58 | 0.58 | 0.58 |
| Consumption-based | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| External statistics (B) | | | | | |
| Income-based | N/A | N/A | N/A | N/A | N/A |
| Consumption-based | 0.31 | N/A | N/A | N/A | N/A |
| Per cent captured (A/B) | | | | | |
| Income-based | N/A | N/A | N/A | N/A | N/A |
| Consumption-based | 100 | N/A | N/A | N/A | N/A |

Notes: ZANMOD and external source both use the same equivalence scale.

Source: Panel A: Simulated output from ZANMOD v1.1. Panel B: OCGS (2020: 100).

Table A5: Poverty rates, 2019–23

| Poverty head-count | 2019 | 2020 | 2021 | 2022 | 2023 |
|---------------------------------------|------|------|------|------|------|
| ZANMOD (A) | | | | | |
| Income-based food poverty | 86.1 | 86.8 | 87.0 | 87.9 | 88.3 |
| Income-based basic needs poverty | 91.1 | 91.8 | 92.0 | 92.6 | 92.9 |
| Consumption-based food poverty | 9.5 | 10.4 | 11.4 | 13.1 | 14.4 |
| Consumption-based basic needs poverty | 25.7 | 29.3 | 30.4 | 33.6 | 35.8 |
| External statistics (B) | | | | | |
| Income-based | N/A | N/A | N/A | N/A | N/A |
| Consumption-based food poverty | 9.3 | N/A | N/A | N/A | N/A |
| Consumption-based basic needs poverty | 25.7 | N/A | N/A | N/A | N/A |
| Per cent captured (A/B) | | | | | |
| Income-based | N/A | N/A | N/A | N/A | N/A |
| Consumption-based food poverty | 102 | N/A | N/A | N/A | N/A |
| Consumption-based basic needs poverty | 100 | N/A | N/A | N/A | N/A |

Notes: ZANMOD and external source both use the same equivalence scale. The food poverty line is TZS47,541 per adult equivalent per month, and the basic needs poverty line is TZS66,313 per adult equivalent per month. These figures were inflated using the CPI for subsequent years.

Source: Panel A: Simulated output from ZANMOD version 1.1; Panel B: OCGS(2020: 92–93).

Table A2: Tax and benefit instruments simulated in ZANMOD—number of recipients/payers

| Tax-benefit policy | 2019 | 2020 | 2021 | 2022 | 2023 |
|--|--------|--------|--------|--------|--------|
| ZANMOD (A) | | | | | |
| Presumptive income tax | 0 | 0 | 0 | 0 | 0 |
| Personal income tax (PAYE and prepared accounts) | 83,924 | 82,767 | 74,587 | 75,220 | 75,921 |
| VAT | N/A | N/A | N/A | N/A | N/A |
| Excise duty | N/A | N/A | N/A | N/A | N/A |
| ZSSF contributors | 72,310 | 72,310 | 72,310 | 72,310 | 72,310 |
| PSSN (number of households) | 18,296 | 18,296 | 18,296 | 18,296 | 18,296 |
| ZUPS recipients | 36,592 | 36,592 | 36,592 | 36,592 | 36,592 |
| External data (B) | | | | | |
| Presumptive income tax | 1,231 | 1,942 | 2,184 | - | - |
| Personal income tax (PAYE and individuals) | 20,867 | 23,895 | 32,671 | - | - |
| VAT | N/A | N/A | N/A | N/A | N/A |
| Excise duty | N/A | N/A | N/A | N/A | N/A |
| ZSSF contributors | 71,204 | 72,774 | 86,721 | 71,853 | - |
| ZVSSF contributors | 1,043 | 1,014 | 1,228 | 2,359 | - |
| PSSN (number of households in receipt of transfer) | 30,632 | 29,041 | 33,662 | 54,133 | - |
| PSSN (number of public works project participants) | - | - | 30,602 | 38,720 | - |
| ZUPS recipients | 28,461 | 29,182 | 28,735 | 28,776 | - |
| Per cent captured (A/B) | | | | | |
| Presumptive income tax | 0 | 0 | 0 | - | - |
| Personal income tax (PAYE and prepared accounts) | 402 | 346 | 228 | - | - |
| VAT | N/A | N/A | N/A | N/A | N/A |
| Excise duty | N/A | N/A | N/A | N/A | N/A |
| ZSSF contributors | 102 | 99 | 83 | 101 | - |
| PSSN (number of households) | 60 | 63 | 54 | 34 | - |
| ZUPS recipients | 129 | 125 | 127 | 127 | - |

Notes: N/A: Not applicable; '-' : not available.

Source: Panel A: ZANMOD version 1.1. Panel B: Direct taxes data—provided at the request of the Second Vice President's Office by TRA. ZSSF data—provided at the request of the Second Vice President's Office by ZSSF Office. NHIF data—provided on request by NHIF Office. PSSN data—provided on request by TASASF. ZUPS data—provided at the request of the Second Vice President's Office by Ministry of Community Development, Gender, Elderly and Children.

Table A3: Tax and benefit instruments simulated in ZANMOD—annual amounts (TZS million)

| Tax-benefit policy | 2019 | 2020 | 2021 | 2022 | 2023 |
|--|-----------|-----------|-----------|------------|---------|
| ZANMOD (A) | | | | | |
| Presumptive income tax | 0 | 0 | 0 | 0 | 0 |
| Personal income tax (PAYE and prepared accounts) | 83,814 | 80,044 | 54,183 | 59,485 | 63,597 |
| VAT | 125,360 | 127,948 | 132,325 | 140,052 | 142,881 |
| Excise duty | 1,893 | 1,893 | 1,893 | 1,893 | 1,893 |
| ZSSF contributions (employer and employee) | 96,425 | 100,711 | 102,852 | 107,138 | 115,870 |
| PSSN | 5,535 | 5,535 | 8,025 | 8,025 | 8,025 |
| ZUPS | 8,782 | 8,782 | 8,782 | 8,782 | 8,782 |
| External data (B) | | | | | |
| Direct taxes (total) | 67,806.9 | 64,930.4 | 61,713.4 | 104,042.6 | - |
| Presumptive income tax | 7,325.7 | 8,474.2 | 6,805.2 | 2,697.2 | - |
| Personal income tax (PAYE and individuals) | 60,481.2 | 56,456.1 | 54,908.2 | 101,345.4 | - |
| VAT (on imports) | 54,369.2 | 61,958.8 | 74,242.7 | 84,497.9 | - |
| VAT (local) | 159,603.4 | 118,059.3 | 180,720.9 | 308,252.02 | - |
| Excise duty (on imports) | 19,520.3 | 21,946.6 | 23,751.4 | 34,583.7 | - |
| Excise duty (local) | 26,585.4 | 28,851.8 | 32,410.9 | 36,572.7 | - |
| ZSSF contributions (employer and employee) | 76,497.0 | 78,801.2 | 90,888.3 | 92,984 | - |
| ZVSSF contributions (employer and employee) | 227.1 | 217.9 | 343.9 | 375.8 | - |
| PSSN (cash transfer) | 8,287.5 | 6,633.0 | 8,234.0 | 13,633.9 | - |
| ZUPS | 6,830.6 | 7,003.7 | 6,896.4 | 7,500.0 | - |
| Per cent captured (A/B) | | | | | |
| Direct taxes (total) | 124 | 123 | 88 | 57 | - |
| VAT (local) | 79 | 108 | 73 | 45 | - |
| Excise duty (local) | 7 | 7 | 6 | 5 | - |
| ZSSF contributions (employer and employee) | 126 | 128 | 113 | 115 | - |
| PSSN | 67 | 83 | 97 | 59 | - |
| ZUPS recipients | 129 | 125 | 127 | 117 | - |

Notes: N/A: not applicable; ‘-’: not available. Direct taxes external data comprises revenue from PAYE plus individuals for Zanzibar.

Source: Panel A: ZANMOD version 1.1. Panel B: Direct taxes data—provided at the request of the Second Vice President’s Office by TRA; TRA (2023g). VAT and excise data on imports—TRA (2023g). VAT and excise data (local)—ZRA (2023d). ZSSF data—provided at the request of the Second Vice President’s Office by ZSSF Office. NHIF data—provided on request by NHIF Office. PSSN data—provided on request by TASASF. ZUPS data—Authors’ calculation using numbers of beneficiaries (Table A2) in the absence of expenditure data.