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WIDER Working Paper 2018/20

A 2015 Social Accounting Matrix (SAM) for Mozambique

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Vincenzo Salvucci⁴, and Dirk van Seventer⁵

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Abstract: This paper documents a 2015 Social Accounting Matrix (SAM) for Mozambique. The SAM is built using unpublished Instituto Nacional de Estatística (INE) industry-level production accounts, commodity-level supply–demand balances and a supply matrix, together with national accounts, National Directorate of Planning and Budget (DNPO) government statistics and IMF balance of payment statistics (all for the year 2015), INE household and labour market survey data for 2014–15 and a use matrix from a 2007 SAM for Mozambique. It provides a detailed representation of the Mozambican economy and identifies 55 activities and commodities. Labour is disaggregated by education attainment level and household income and expenditure by per capita expenditure quintiles both for urban and rural areas. The SAM features production for home consumption as reported in the unpublished INE accounts and the INE household survey data and also presents government, investment, and foreign accounts. The SAM is a useful database for conducting economy-wide impact assessments, including multiplier analysis and computable general equilibrium (CGE) modelling.

Keywords: Social accounting matrix, national accounts, supply table, use table, cross-entropy SAM estimation

JEL classification: C63, E01, E16, P44

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Link to the [2015 National Social Accounting Matrix](#).

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List of acronyms

CGE	Computable general equilibrium
DNPO	Direcção Nacional de Planificação e Orçamento (National Directorate of Planning and Budget)
GDP	Gross domestic product
INE	Instituto Nacional de Estatística (National Institute of Statistics)
MEF	Ministério de Economia e Finanças (Ministry of Economy and Finance)
SAM	Social Accounting Matrix
SUT	Supply-use table

1 Introduction

This paper outlines the construction of a 2015 social accounting matrix (SAM) for Mozambique. A SAM is a consistent data framework that captures the information contained in the national income and product accounts and a supply-use table (SUT), as well as the monetary flows between institutions. Since it is an ex-post accounting and square framework, total receipts (row totals) must equal total payments (column totals) for each account reported by the SAM. The required data is drawn from various sources and must therefore be compiled and made consistent. This process is valuable since it helps identify inconsistencies among statistical sources. For example, there are invariably differences between the incomes and expenditures reported in household surveys and national accounts. SAMs are economy-wide databases that are used in conjunction with analytical techniques to strengthen the evidence underlying policy decisions.

Section 2 reviews the general structure of SAMs and Section 3 presents the key features of a 2015 SAM for Mozambique. A number of steps are involved. The first step in constructing the Mozambican SAM is compiling national accounts and other official data sources into a consistent SAM framework. The second step then draws on survey information to disaggregate labour and household accounts. Section 3 describes the data sources used to construct the SAM and the finalization of detailed SAM accounts is discussed in Section 4. Section 5 reports on some key data issues that were noted during the compilation process which highlights the need for further work on this SAM, while Section 6 summarizes.

The 2015 SAM is based on unpublished INE industry-level production accounts, commodity-level supply–demand balances and a supply matrix for 2015 together with National Directorate of Planning and Budget (DNPO) government statistics and IMF balance of payment statistics (all for the year 2015), unpublished INE household and labour market survey data for 2014–15 (INE, 2015) and a use matrix from a 2007 SAM for Mozambique (Arndt and Thurlow 2014). It provides a detailed representation of the Mozambican economy and separates 55 activities and commodities. Labour is disaggregated by education attainment level and household income and expenditures by per capita expenditure quintiles both for urban and rural areas. The SAM features production for home consumption as reported in the unpublished INE accounts and INE (2015) household survey data and also identifies government, investment, and foreign accounts. The construction of the SAM is part of the joint “Scaling Up Research and Capacity Building on Improved Development Policy in Mozambique for the period 2016–19” initiative, a collaboration of the Mozambique Ministry of Economy and Finance, University Eduardo Mondlane, UNU-WIDER and Copenhagen University.

Table 1: Basic structure of a 2015 SAM for Mozambique

	Activities	Commodities	Land	Labour	Capital	Enterprises	Households	Government	Net activity taxes	Net product taxes	Import duties	Income taxes	Changes in inventories	Accumulation	Rest of the world	
Activities		Marketed output of total domestic economy					Output for domestic consumption									Gross output
Commodities	Intermediate Inputs	Transaction margins					Final marketed consumption expenditure by households	Final consumption expenditure by general government					Change in inventories	Gross fixed capital formation	Exports of goods & services	Total demand
Land	Compensation for land use															Income from land
Labour	Compensation of employees														Compensation of Mozambican residents in the rest of the world	Labour income
Capital	Net operating surplus + Consumption of fixed capital (Depreciation)														Investment income (primary income) receipts	Capital income
Enterprises					Gross operating surplus of corporations			Government transfers to enterprises							Current transfers from the rest of the world to enterprises	Enterprise earnings
Households			Household earnings from land holdings	Compensation of residents		Property and investment income received by households		Government transfers to households							Current transfers from the rest of the world to households	Household earnings
Government					Property income of the government	Miscellaneous transfers by enterprises to government		Government transfers to other government units (can be netted out)		Sales tax collected and transferred to the government	Import duties collected and transferred to the government	Income and corporate tax collected and transferred to the government			Current transfers from the rest of the world to government	Government receipts
Net activity taxes																Net other taxes on production in all industries
Net product taxes		Taxes on products														Net taxes on products less import duties
Import duties		Import duties														Import duties
Income taxes						Corporate tax	Income tax on individuals									Current taxes on income
Changes in inventories														Change in inventories		Change in inventories
Accumulation						Corporate savings	Household savings	Government budget deficit							Balance on the current account	Savings
Rest of the world		Imports of goods & services		Remittances to non-resident workers	Investment income outflows	Transfers by enterprises to the rest of the world		Government transfers to the rest of the world								Foreign exchange outflows
Total	Gross output	Total Supply	Distribution of income from land	Distribution of labour income	Distribution of capital income	Enterprise outlays	Household outlays	Government outlays	Net other taxes on production in all industries	Net taxes on products less import duties	Taxes on international trade and transactions: Import duties	Current taxes on income	Change in inventories	Gross fixed capital formation (investment) + change in inventories	Foreign exchange inflow	

Source: Authors' own compilation.

2 General structure of SAMs

A SAM is an economy-wide accounting framework that usually represents the real economy of a single country¹ reported as a square matrix in which each account is represented by a row and a column. Each cell shows the payment from the account of its column to the account of its row – the incomes of an account appear along its row, its expenditures down its column. The underlying principle of double-entry accounting requires that, for each account in the SAM total revenue (row total) equals total expenditure (column total). Table 1 shows an aggregate SAM (with verbal explanations in place of numbers) with specific reference to data for Mozambique.

The SAM distinguishes between ‘activities’ (the entities that carry out production) and ‘commodities’ (representing markets for goods and non-factor services). SAM flows are valued at producers’ prices in the activity accounts and at market prices (including indirect commodity taxes and transactions costs) in the commodity accounts. The commodities consist of output produced by local activities (which are either exported or sold domestically), and imports.

Payments by activities (shown as columns in the SAM) are made to commodity accounts (comprising of locally produced and imported goods and non-factor services (at market prices) i.e., intermediate demand), and factors of production (value-added comprising of operating surplus and compensation of employees, land and/or livestock). The commodity accounts make payments (shown again as columns) to domestic activities, the rest of the world, and various tax accounts (for domestic and import taxes). This treatment allows for the data to model imports as perfect or imperfect substitutes vis-à-vis domestic production.

The government is disaggregated into a core government account and different tax collection accounts, one for each tax type identified in the data. In the SAM, direct payments between the enterprises, households, government and the rest of the world are reserved for transfers as reported in the national accounts, government and balance of payment statistics. As mentioned earlier, in the case of Mozambique, we draw on DNPO government finance statistics and IMF balance of payment statistics.

The SAM contains a number of factors of production, which earn incomes from their use in the production process, and then pay their incomes to enterprises, households, government and the rest of the world. Indirect capital earnings or enterprise profits are taxed according to average corporate tax rates and some profits may be repatriated abroad. The remaining capital earnings, together with labour earnings are paid to households. Households use their incomes to pay taxes, make transfers, save, and consume domestically produced and imported commodities.

¹ For general discussions of SAMs and SAM-based modelling, see Breisinger et al. (2009), Pyatt and Round (1985), Pyatt (1988), Reinert and Roland-Holst (1997), and Robinson and Roland-Holst (1988).

3 Constructing the SAM

The initial task in building a SAM involves compiling data from various sources into the SAM framework. For Mozambique, this information was drawn from unpublished 2015 INE data together with DNPO government finance statistics, IMF balance of payment statistics, and other selected data from the 2007 SAM (Arndt and Thurlow 2014).

The INE unpublished industry-level production accounts, commodity-level supply–demand balances, and a Supply Matrix for 2015 are consistent with each other (barring some rounding difference). The government finance and balance of payment data other than the INE data involves macro accounts and do not require adjustment elsewhere in the SAM. Where they overlap with the INE data, the latter is used. The use matrix taken from the 2007 SAM (Arndt and Thurlow 2014) is fitted to the INE activities’ intermediate use data and their commodities’ intermediate sales estimates using biproportional scaling. The use matrix had to be subjected to minor manual adjustment to ensure a solution to this scaling.

Table 2: A 2015 Macro SAM for Mozambique (Millions of Meticals)

	Activities	Commodities	Land	Labour	Capital	Enterprises	Households	Government	Net activity taxes	Net product taxes	Import duties	Income taxes	Changes in inventories	Accumulation	Rest of the world	Total
Activities		891,486					112,833									1,004,318
Commodities	465,535	124,546					288,189	157,807					79,092	189,089	190,616	1,494,875
Land	19,337															19,337
Labour	321,613														2,100	323,713
Capital	197,833														2,205	200,038
Enterprises					183,440			5,083							11,871	200,394
Households			19,337	321,633		121,716		15,962							5,386	484,034
Government					5,810	17,329		3,494		42,668	10,227	62,621			20,678	162,828
Net activity taxes																0
Net product taxes		42,668														42,668
Import duties		10,227														10,227
Income taxes						41,310	21,311									62,621
Changes in inventories														79,092		79,092
Accumulation						20,039	61,701	-23,809							210,250	268,182
Rest of the world		425,947		2,081	10,788	0		4,291								443,107
Total	1,004,318	1,494,875	19,337	323,713	200,038	200,394	484,034	162,828	0	42,668	10,227	62,621	79,092	268,182	443,107	

Source: Authors' own calculations.

Household income and expenditure data and labour force data (earnings by activity and level of education attainment) are available from unpublished household and labour market survey data for 2014–15 (INE 2015), the data that was processed in the same way as for the 2007 SAM (Arndt and Thurlow 2014) and the 2012 SAM (van Seventer 2015).

The Macro SAM shown in Table 2 is an aggregation of the more detailed micro SAM. The rest of this section explains how each macro SAM entry is derived and disaggregated. Each entry in the SAM is in turn discussed below. The notation for SAM entries is (row, column) and the values are in millions of 2015 Meticals. The final disaggregated SAM is included in the [accompanying Excel workbook](#)².

i (Commodities, Activities)...MTmill465,535

Intermediate consumption. The total for each industry is available from unpublished INE industry production accounts. A breakdown by commodity is based on a use matrix adapted from the 2007 SAM (Arndt and Thurlow 2014).

ii (Land, Activities)...MTmill19,337

Compensation for land use. Part of gross value added with the latter available from unpublished INE industry production accounts. Compensation for land use applies to agricultural crop activities and is based on the authors' assumption of around 1/5 share of the total agricultural crop value added. The rest is allocated to labour and capital components of value added (explained in iii below). For individual agricultural crop activities, an initial share of land-use value is taken from the 2007 SAM (Arndt and Thurlow 2014), followed by a biproportional scaling routine to ensure that lower level control totals are consistent with the wage share of value added for the total of all agricultural crop activities (see discussion below).

iii (Labor, Activities)...MTmill321,613

Compensation of employees. Part of gross value added with the latter available from unpublished INE industry production accounts. The share of labor in economy-wide value added is based on the INE's remunerations on employees plus a share of mixed income. The latter corresponds to 45 per cent of INE's total gross operating surplus (from which the land use value (see ii) is subtracted). The mixed income share is based on historical data from INE and on the authors' assumptions. The remaining 55 per cent corresponds to the share of capital in INE's total gross operating surplus (to be used in iv below). The share of labor in total agricultural crop value added is estimated using the average shares used in the 1994-1995 SAM (Arndt et al. 1998) and the 2007 SAM (Arndt and Thurlow 2014). For individual agricultural crop activities, an initial share of land-use value is taken from the 2007 SAM (Arndt and Thurlow 2014). Total wage earnings for non-crop (including non-agricultural) activities can be derived by taking the difference between economy-wide total wage earnings and wage earnings for crop activities. The initial breakdown of non-crop wage earnings is based on additional unpublished INE data for wage earnings by activity. For both crop and non-crop activities a separate

² Excel workbook is available at <https://www.wider.unu.edu/sites/default/files/Data/Data-for-a-2015-Mozambique-SAM-v2018.xlsx>.

biproportional scaling routine is used to ensure that the lower level control totals were met.

iv (Capital, Activities)...MTmill197,833

Gross operating surplus [net operating surplus + consumption of fixed capital (depreciation)]. Part of gross value added with the latter available from unpublished INE industry production accounts. The shares of gross operating surplus in gross value added for total crop and total non-crop (including non-agricultural) activities can be derived as a residual from ii and iii above. The same residual approach applies to detailed crop and non-crop activities.

v (Activities, Commodities)...MTmill891,486

Marketed output of total domestic economy. Available from unpublished INE industry production accounts and commodity supply accounts, including the distribution across activity and commodity. The data is presented so that activities make homogeneous commodities, characterized by a diagonal domestic marketed supply matrix.

vi (Commodities, Commodities)...MTmill124,546

Transaction margins. Available from unpublished INE commodity supply-demand balance accounts, including the distribution across commodities. Adjusted by the cross-entropy estimation method (see Section 4 below).

vii (Net product taxes, Commodities)...MTmill42,668

Taxes on products. Available from unpublished INE commodity supply-demand balance accounts, including the distribution across commodities.

viii (Import duties, Commodities)...MTmill10,227

Import duties. Available from unpublished INE commodity supply-demand balance accounts, including the distribution across commodities.

ix (Rest of the world, Commodities)...MTmill425,947

Imports of goods and services. Available from unpublished INE commodity supply-demand balance accounts.

x (Households, Land)...MTmill19,337

Household earnings from land holdings. Is equal to compensation for land use. All income is allocated to households and a breakdown into household categories is based on the 2008–09 Household Survey (INE 2009). The 2014–15 Household Survey did not report this data.

xi (Households, Labor)...MTmill321,633

Compensation of residents. Is calculated as compensation of employees plus remittances from workers abroad less remittances to non-resident workers. A breakdown of earnings into labor categories and household income groups is based on the 2014–15 Household

Survey (INE, 2015). The labour category shares are also applied to remittances from workers abroad.

- xii (Rest of the world, Labor)...MTmill2,081

Remittances to non-resident workers. Available from IMF Balance of Payments statistics (primary income flows). It is assumed that these remittance outflows only apply to the highest skilled labour category
- xiii (Enterprises, Capital)...MTmill183,440

Gross operating surplus of corporations. Derived as a residual by subtracting net primary income outflows and property income of the government from total gross operating surplus. Net primary income outflows are available from the IMF Balance of Payment statistics and property income received by the government is available from the DNPO government statistics.
- xiv (Government, Capital)...MTmill5,810

Property income of the government. Available from DNPO Government Finance statistics.
- xv (Rest of the world, Capital)...MTmill10,788

Investment income outflows. Available from IMF Balance of Payments statistics (primary income flows)
- xvi (Households, Enterprises)...MTmill121,716

Property and investment income received by households. Derived as a residual by netting enterprise transfers to- and from the government and the rest of the world (for details, see below), corporate tax and savings out from the transfer of gross operating surplus to enterprises. A breakdown into household categories is based on the distribution of enterprise income to households according to the 2008–09 Household Survey (INE 2009).
- xvii (Government, Enterprises)...MTmill17,329

Miscellaneous transfers by enterprises to government. Available from DNPO Government Finance statistics (non-fiscal revenue = receitas não fiscais, earmarked revenue = receitas consignadas)
- xviii (Income taxes, Enterprises)...MTmill41,310

Corporate tax. Available from DNPO Government Finance statistics
- xix (Accumulation, Enterprises)...MTmill20,039

Corporate savings. Assumed to be 10per cent of total revenue
- xx (Rest of the world, Enterprises)...MTmill000

Transfers by enterprises to the rest of the world. Available from IMF Balance of Payments statistics (Other current transfers)

xxi (Activities, Households)...MTmill112,833

Home consumption. Available from unpublished INE industry production accounts, including the distribution across activities. Each expenditure by activity is broken down across rural and urban deciles based on household expenditure patterns from the unpublished 2014–15 Household Survey (INE, 2015).

xxii (Commodities, Households)...MTmill288,189

Final consumption expenditure by households. Available from unpublished INE commodity supply-demand balance accounts, including the distribution across commodities. Each expenditure by commodity is broken down across rural and urban deciles based on household expenditure patterns from the unpublished 2014–15 Household Survey.

xxiii (Income taxes, Households)...MTmill21,311

Income tax on households. Available from DNPO Government Finance statistics. The breakdown into household categories follows the same principles as in the 2007 SAM (Arndt and Thurlow 2014) and the 2012 SAM (van Seventer 2015) and is based on the distribution on wage earnings of the two highest labour categories (with secondary and tertiary education attainments, see xi above).

xxiv (Accumulation, Households)...MTmill61,701

Household savings. Derived as a residual of household income and expenditure. The breakdown into household categories follows the same principles as for the 2007 SAM (Arndt and Thurlow 2014) and the 2012 SAM (van Seventer 2015) and is based on the distribution of enterprise earnings (see xvi above).

xxv (Commodities, Government)...MTmill157,807

Final consumption expenditure by general government. Available from unpublished INE commodity supply-demand balance accounts, including the distribution across commodities.

xxvi (Enterprises, Government)...MTmill5,083

Government transfers to enterprises. Available from DNPO Government Finance statistics (domestic public debt servicing (interest) = encargos da dívida pública interna (juros))

xxvii (Households, Government)...MTmill15,962

Government transfers to households. Available from DNPO Government Finance statistics (current transfers = transferências correntes, households = famílias). A breakdown across household categories is based on the 2014–15 Household Survey (INE, 2015).

- xxviii (Government, Government)...MTmill3,494
- Government transfers to other government units (can be netted out). Available from DNPO Government Finance statistics (current transfers = transferências correntes, for public administration = para a administração pública)
- xxix (Accumulation, Government)...MTmill-23,809
- Government budget deficit. Derived as a residual of government revenues and expenditures
- xxx (Rest of the world, Government)...MTmill4,291
- Government transfers to the rest of the world. Available from the DNPO Government Finance statistics [Current transfers abroad = Transferências correntes externas, external public debt servicing (interest) = encargos da dívida pública externa (juros)]
- xxxi (Government, Net product taxes)...MTmill42,668
- Sales tax collected and transferred to the government. Derived from elsewhere in the SAM (see vii above)
- xxxii (Government, Import duties)...MTmill10,227
- Import duties collected and transferred to the government. Derived from elsewhere in the SAM (see viii above)
- xxxiii (Government, Income taxes)...MTmill62,621
- Income and corporate tax collected and transferred to the government. Derived from elsewhere in the SAM (see xviii and xxiii above)
- xxxiv (Commodities, Changes in inventories)...MTmill79,092
- Change in inventories. Available from unpublished INE commodity supply-demand balance accounts, including the distribution across commodities.
- xxxv (Commodities, Accumulation)...MTmill189,089
- Gross fixed capital formation. Available from unpublished INE commodity supply-demand balance accounts, including the distribution across commodities.
- xxxvi (Changes in inventories, Accumulation)...MTmill79,092
- Change in inventories. Derived from elsewhere in the SAM and transferred to the accumulation account (see xxxiv above).

xxxvii (Commodities, Rest of the world)...MTmill190,616

Exports of goods and services. Available from unpublished INE commodity supply-demand balance accounts, including the distribution across commodities. Some manual adjustment had to be undertaken in order to avoid exports being larger than domestic supply. In particular this is a problem for the commodities “tobacco leaf” and for “other mining”. In the case of tobacco leaf, some exports were reallocated to beverages and manufactured tobacco while some other mining exports were shifted to coal.

xxxviii (Labor, Rest of the world)...MTmill2,100

Primary income, compensation of employees residing in the rest of the world. Available from IMF Balance of Payments statistics (primary income flows). The distribution across labour categories is based on total earnings shares extracted from the 2014–15 Household Survey (INE, 2015).

xxxix (Capital, Rest of the world)...MTmill2,205

Primary income, investment income from the rest of the world. Available from IMF Balance of Payments statistics (primary income flows)

xl (Enterprises, Rest of the world)...MTmill11,871

Current transfers from the rest of the world to enterprises. Available from IMF Balance of Payments statistics

xli (Households, Rest of the world)...MTmill5,386

Current transfers from the rest of the world to households. Available from IMF Balance of Payments statistics (Other current transfers). A further breakdown into households is based on the 2014–15 Household Survey (INE 2015)

xlii (Government, Rest of the world)...MTmill20,678

Current transfers from the rest of the world to government. Available from IMF Balance of Payments statistics

xliii (Accumulation, Rest of the world)...MTmill210,250

Balance on the current account. Derived as a residual of receipts from and payments to the rest of the world

4 Finalizing the SAM

Finalizing the SAM takes places in two stages. First, a detailed SAM is constructed that contains aggregate entries for factors and households (labelled here as the SUTSAM). As mentioned at the start of the previous section, the core data of this SUTSAM is derived from INE’s unpublished industry-level production accounts, commodity-level supply–demand balances and a supply matrix for 2015. Aggregation of these data sources to SAM commodities and activities is reported in Appendix A. These data source are consistent with each other.

The DNPO government finance and the IMF balance of payment data other than the INE data mentioned above involves macro accounts with internal residuals calculated in the Macro SAM. They therefore do not require adjustments elsewhere in the SUTSAM. Where they overlap with INE data such as with total government expenditure on goods and services and total indirect taxes on goods and services, the INE data is used. The use matrix taken from the 2007 SAM (Arndt and Thurlow 2014) is fitted to INE's activities' intermediate use estimates and their commodities' intermediate sales estimates, using biproportional scaling. The use matrix had to undergo minor manual adjustment to ensure a solution to this scaling.

In order to complete the SUTSAM, errors were resolved using the Cross-Entropy Estimation method as described by Robinson et al. (2001). The method has been set up such that the Macro SAM entries of Table 2 are preserved.

In a second stage, the SUTSAM, is disaggregated across factors and households using the 2014–15 Household Survey data [INE 2015 with some shares also taken from the 2008–09 Household Survey (INE 2009)]. Since the aggregate SUTSAM is balanced, this can be set up such that it results in imbalances for the household accounts only. These household accounts were balanced by biproportional scaling of the income distribution submatrix of the SAM. All sources of household income and household expenditure were initially disaggregated using the 2014–15 Household Survey data [INE 2015 with some shares also taken from the 2008–09 Household Survey (INE 2009)]. The resulting total income was compared with the total outlays of each household. Adjustments were made by scaling across the income sources while the target household income/expenditure total for the final balanced SAM was set to be the household outlay totals. Imbalances were therefore eliminated while holding all other non-household-related entries of the SUTSAM constant.

Finally, all operating surplus payments by the three livestock industries are reallocated to a newly created production factor 'livestock'. The receipts by the livestock production factor account are paid directly to households according to the relevant shares in the underlying 2008–09 Household Survey. These receipts are subtracted from the payments by capital to enterprises and by enterprises to households. In that way, no rebalancing is required.

5 Data issues

While the SAM construction described above can be considered as the acceptable given the data sources at hand, a number of improvements can be considered. They are:

1. The reallocation of mixed income from gross operating surplus to labour and land is based on the best judgment from the authors described in section 3ii above, as has happened in the past. While INE is not publishing this detail, further research is required to arrive at sound criteria based estimates.
2. The 2015 SAM is using government expenditure and revenues from INE's unpublished data combined with DNPO data. Due to timing of data releases, the latest government revenue information from the 2015 State General Account (Government of Mozambique 2016) could not be incorporated in INE's unpublished data.
3. The use matrix is at this stage derived from the 2007 SAM (Arndt and Thurlow 2014). Earlier, we mentioned that we had to make several manual adjustments in order to fit this use matrix to the INE industry and commodity-level intermediate use and sales respectively. Moreover, the origin of the use matrix dates back well into the 1990s (Arndt et al. 1998). It is recommended that recent enterprise surveys and other sources (including

case studies for selected crops in agriculture) are explored in order to construct a new use matrix.

4. Land, livestock, and enterprise income distribution to households was not available from the 2014–15 Household Survey and were based on shares from the 2008–09 Household Survey (INE 2009), (see discussion in 3x and 3xvi above). For the same reason, the distribution of household income tax payments and outlays of savings were modelled (see discussion in 3xxiii and 3xxiv above). It is recommended that the next household survey makes an attempt to capture these earnings in the better way.

6 Summary

This paper documented a 2015 Social Accounting Matrix (SAM) for Mozambique. The SAM is built using INE unpublished industry-level production accounts, commodity-level supply–demand balances and a Supply Matrix, together with National Accounts, DNPO government and IMF balance of payment statistics, all for the year 2015. Household and labour market survey data for 2014–15 (INE 2015) are used for further detail as well as a use matrix from a 2007 SAM for Mozambique (Arndt and Thurlow 2014).

It offers a detailed representation of the Mozambican economy and identifies 55 activities and commodities. Labour is disaggregated by education attainment level, and household income and expenditure by per capita expenditure quintiles both for urban and rural areas. The SAM features production for home consumption as reported in the unpublished data made available by INE and identifies government, investment and foreign accounts.

The core data for the SAM uses INE unpublished industry-level production accounts, commodity-level supply–demand balances and a supply matrix together with national accounts. While the SAM construction described above can be considered as acceptable given the data sources at hand, a number of improvements can be considered. They could focus on:

1. criteria-based estimates of the mixed income shares in gross operating surplus and land use values for agriculture crop activities;
2. incorporating the latest government revenue data in INE’s unpublished activity and commodity accounts;
3. updating the use matrix using enterprise surveys;
4. including details for some components of household income and outlays that were not available from the 2014–15 Household Survey (INE 2015) in the next household survey.

References

- Arndt, C., and J. Thurlow (2014). 'A 2007 Social Accounting Matrix (SAM) for Mozambique'. Washington DC: International Food Policy Research Institute (IFPRI). Available at: <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/128888/filename/129099.pdf>
- Arndt, C., A. Cruz, H. Tarp Jensen, S. Robinson, and F. Tarp (1998). 'Social accounting matrices for Mozambique, 1994 and 1995', IFPRI TMD Working Paper 28. Washington DC: International Food Policy Research Institute. Available at: <http://www.ifpri.org/publication/social-accounting-matrices-mozambique-1994-and-1995>.
- Breisinger, C., M. Thomas and J. Thurlow (2009). 'Social Accounting Matrices and Multiplier Analysis: An Introduction with Exercises', Food Security in Practice Technical Guide 5. Washington DC: International Food Policy Research Institute (IFPRI). Available at: <http://www.ifpri.org/sites/default/files/publications/sp5.pdf>.
- DNPO, Mapa Fiscal, (2017). Maputo: National Directorate of Planning and Budget, Fiscal Tables, March.
- INE (Instituto Nacional de Estatística) (2009). 'Inquérito ao Orçamento Familiar 2008/09 (IOF08)'. Maputo: Instituto Nacional de Estatística.
- INE (Instituto Nacional de Estatística) (2014). 'Statistical Yearbook 2013 (Anuario Estatístico)'. Maputo: Instituto Nacional de Estatística.
- INE (Instituto Nacional de Estatística) (2015). 'Inquérito aos Orçamentos Familiares (IOF) 2014-2015 – Iº Trimestre'. Maputo: Instituto Nacional de Estatística. Available at: <http://www.ine.gov.mz/operacoes-estatisticas/inqueritos/inquerito-sobre-orcamento-familiar/inquerito-aos-orcamentos-familiares-iof-2014-2015-2013-io-trimestre/view>.
- INE (Instituto Nacional de Estatística) (2016). 'Statistical Yearbook 2015 (Anuario Estatístico)'. Maputo: Instituto Nacional de Estatística.
- IMF Balance of Payment Statistics. Available at: <http://data.imf.org/?sk=b4a9517a-a080-4d8a-b1dd-d1bba58213b7&sId=1390030109571>. Washington D.C.: International Monetary Fund.
- Pyatt, G. (1988). 'A SAM Approach to Modelling', *Journal of Policy Modelling*, 10(3): 327–52.
- Pyatt, G., and J. Round (1985). 'Social Accounting Matrices: a Basis for Planning'. Washington DC: World Bank.
- Reinert, K.A., and D.W. Roland-Holst (1997). 'Social Accounting Matrices', in J.F. Francois and K.A. Reinert (eds) *Applied Methods for Trade Policy Analysis: A Handbook*. New York: Cambridge University Press.
- Robinson, S., A. Cattaneo, and M. El-Said (2001). "Updating and Estimating a Social Accounting Matrix Using Cross Entropy Methods", *Economic Systems Research*, 13(1), 47–64.
- Robinson, S., and D.W. Roland-Holst (1988). 'Macroeconomic Structure and Computable General Equilibrium Models', *Journal of Policy Modelling*, 10(3): 353–75.
- van Seventer, D.E.N. (2015). A 2012 Social Accounting Matrix (SAM) for Mozambique. Helsinki: UNU-WIDER. Available at: <https://www.wider.unu.edu/database/2012-social-accounting-matrix-mozambique>.

Appendix A: Mapping from INE to SAM Activity and Commodity

	SAM Code	SAM Description	INE Activity Code	INE Activity Description	INE Commodity Code	INE Commodity Description
1.	ocer	Other cereals	R011	Agricultura	P01111-1	Trigo
2.	maiz	Maize	R011	Agricultura	P01111-2	Milho
3.	sorg	Sorghum and millet	R011	Agricultura	P01111-9	Mapira, mexocira e outro cereais em grão
4.	puls	Pulses	R011	Agricultura	P01112-1	Feijão
5.	gnut	Groundnuts	R011	Agricultura	P01112-2	Amendoim
6.	rice	Rice	R011	Agricultura	P01120	Arroz em casca
7.	cass	Cassava	R011	Agricultura	P01131	Mandioca
8.	root	Other roots	R011	Agricultura	P01139-1	Outros tubérculos e raízes
9.	vege	Vegetables	R011	Agricultura	P01139-2	Produtos hortícolas
10.	sugr	Sugar cane	R011	Agricultura	P01140	Cana de açúcar
11.	toba	Tobacco	R011	Agricultura	P01150	Tabaco-folha
12.	cott	Cotton and fibres	R011	Agricultura	P01161	Algodão-carçoço
13.	frui	Fruits and nuts	R011	Agricultura	P01200	Frutos frescos
14.	frui	Fruits and nuts	R011	Agricultura	P01231	Cajú
15.	oils	Other oilseeds	R011	Agricultura	P01240-1	Copra e coco
16.	ocrp	Other crops	R011	Agricultura	P01240-9	Jatrofa
17.	coff	Coffee and tea	R011	Agricultura	P01251	Chá-folha
18.	ocrp	Other crops	R011	Agricultura	P01291	Outros produtos agrícolas de uso industrial
19.	ocrp	Other crops	R011	Agricultura	P01292	Outros produtos agrícolas não industriais
20.	catt	Cattle	R014	Produção animal	P01410	Gado bovino
21.	oliv	Other livestock	R014	Produção animal	P01420	Gado ovino e caprino
22.	oliv	Other livestock	R014	Produção animal	P01430	Gado suíno
23.	poul	Poultry	R014	Produção animal	P01440-1	Aves vivas
24.	poul	Poultry	R014	Produção animal	P01440-2	Ovos frescos
25.	oliv	Other livestock	R014	Produção animal	P01499-1	Animais selvagens e outros comestíveis
26.	oliv	Other livestock	R014	Produção animal	P01499-9	Produtos de origem animal
27.	fore	Forestry	R020	Silvicultura, exploração florestal e actividades relacionadas	P02200-1	Lenha e carvão vegetal
28.	fore	Forestry	R020	Silvicultura, exploração florestal e actividades relacionadas	P02200-2	Madeira em toros e outros produtos da silvicultura

	SAM Code	SAM Description	INE Activity Code	INE Activity Description	INE Commodity Code	INE Commodity Description
29.	fore	Forestry	R020	Silvicultura, exploração florestal e actividades relacionadas	P02300	Outros produtos florestais, excepto madeira
30.	fish	Fishing	R030	Pesca, aquacultura, e actividades dos serviços relacionados	P03111-1	Peixes frescos, refrigerados
31.	fish	Fishing	R030	Pesca, aquacultura, e actividades dos serviços relacionados	P03111-2	Camarão, gamba e lagosta
32.	fish	Fishing	R030	Pesca, aquacultura, e actividades dos serviços relacionados	P03111-3	Outros produtos da pesca
33.	coal	Coal and lignite	R051	Extracção de carvão	P05100	Carvão mineral
34.	ngas	Natural gas	R062	Extracção de gás natural e condensados	P06201	Gás natural, liquefeito ou no estado gasoso
35.	ngas	Natural gas	R062	Extracção de gás natural e condensados	P06202	Condensados de gás natural
36.	omin	Other mining	R070	Extracção e preparação de de minérios metálicos	P07291	Bauxite
37.	omin	Other mining	R070	Extracção e preparação de de minérios metálicos	P07299	Outros minerais metálicos
38.	omin	Other mining	R080	Outras indústrias extrativas	P08100	Pedra, argila e areia
39.	omin	Other mining	R080	Outras indústrias extrativas	P08991	Pedras preciosas e semi-preciosas
40.	omin	Other mining	R080	Outras indústrias extrativas	P08999	Outros minerais não metálicos
41.	meat	Meat	R101	Abate de animais, preparacao e conservação de carne e de produtos a base de carne	P10101-1	Carne de bovino
42.	meat	Meat	R101	Abate de animais, preparacao e conservação de carne e de produtos a base de carne	P10101-2	Carne de suino
43.	meat	Meat	R101	Abate de animais, preparacao e conservação de carne e de produtos a base de carne	P10101-3	Carne de outros animais domesticados, excepto aves
44.	meat	Meat	R101	Abate de animais, preparacao e conservação de carne e de produtos a base de carne	P10101-8	Peles e couro

Appendix A (cont): Mapping from INE to SAM Activity and Commodity

	SAM Code	SAM Description	INE Activity Code	INE Activity Description	INE Commodity Code	INE Commodity Description
45.	meat	Meat	R101	Abate de animais, preparacao e conservacao de carne e de produtos a base de carne	P10102	Carne de aves
46.	meat	Meat	R101	Abate de animais, preparacao e conservacao de carne e de produtos a base de carne	P10104	Produtos a base de carne
47.	food	Other foods	R107	Fabricação de outros produtos alimentares diversos, n.e.	P10200	Produtos da pesca preparados e em conserva
48.	food	Other foods	R107	Fabricação de outros produtos alimentares diversos, n.e.	P10301	Frutos e produtos vegetais transformados incl sumos
49.	food	Other foods	R107	Fabricação de outros produtos alimentares diversos, n.e.	P10302	Amêndoa de cajú inteira e partida
50.	food	Other foods	R107	Fabricação de outros produtos alimentares diversos, n.e.	P10400	Óleos vegetais e animais
51.	food	Other foods	R107	Fabricação de outros produtos alimentares diversos, n.e.	P10500	Leite processado e derivados
52.	cvgp	Cereal and vegetable processing	R106	Transformação de cereais e leguminosas; fabricação de rações	P10611-1	Farinha de trigo
53.	cvgp	Cereal and vegetable processing	R106	Transformação de cereais e leguminosas; fabricação de rações	P10611-2	Farinha de milho
54.	cvgp	Cereal and vegetable processing	R106	Transformação de cereais e leguminosas; fabricação de rações	P10612	Farinha de mandioca e derivados, inclui tapioca
55.	cvgp	Cereal and vegetable processing	R106	Transformação de cereais e leguminosas; fabricação de rações	P10613	Arroz descascado
56.	cvgp	Cereal and vegetable processing	R106	Transformação de cereais e leguminosas; fabricação de rações	P10619	Outros produtos e serviços de moagem
57.	food	Other foods	R107	Fabricação de outros produtos alimentares diversos, n.e.	P10710	Pão, e produtos de pastelaria e doçaria
58.	food	Other foods	R107	Fabricação de outros produtos alimentares diversos, n.e.	P10730	Açúcar e Melaço de açúcar
59.	food	Other foods	R107	Fabricação de outros produtos alimentares diversos, n.e.	P10750	Massas alimentícias
60.	food	Other foods	R107	Fabricação de outros produtos alimentares diversos, n.e.	P10790	Outros produtos das indústrias alimentícias
61.	cvgp	Cereal and vegetable processing	R106	Transformação de cereais e leguminosas; fabricação de rações	P10800	Rações
62.	beve	Beverage & tobacco mnf	R110	Fabricação de bebidas e tabaco	P11010-1	Aguardentes e outras bebidas espirituosas
63.	beve	Beverage & tobacco mnf	R110	Fabricação de bebidas e tabaco	P11010-2	Bebidas alcoólicas tradicionais
64.	beve	Beverage & tobacco mnf	R110	Fabricação de bebidas e tabaco	P11020	Vinho
65.	beve	Beverage & tobacco mnf	R110	Fabricação de bebidas e tabaco	P11030	Cerveja e malte

Appendix A (cont): Mapping from INE to SAM Activity and Commodity

	SAM Code	SAM Description	INE Code	INE Activity Description	INE Commodity Code	INE Commodity Description
66.	beve	Beverage & tobacco mnf	R110	Fabricação de bebidas e tabaco	P11041	Águas minerais e bebidas refrigerantes não alcoólicas
67.	ptob	Beverage & tobacco mnf	R110	Fabricação de bebidas e tabaco	P12002	Cigarros, de charutos e similares
68.	text	Textiles	R130	Fabricação de artigos têxteis e vestuário	P13111-1	Fibra de algodão
69.	text	Textiles	R130	Fabricação de artigos têxteis e vestuário	P13111-2	Outros produtos de fiação
70.	text	Textiles	R130	Fabricação de artigos têxteis e vestuário	P13900	Produtos têxteis, malhas e tapeçaria
71.	clth	Clothing	R130	Fabricação de artigos têxteis e vestuário	P14100	Vestuário, excepto de plástico
72.	leat	Leather and footwear	R150	Preparação de couro e artigos de couro	P15000	Curtumes, calçado e artigos de couro
73.	wood	Wood and paper	R160	Indústria de madeira e da cortica excepto mobiliário	P16000	Produtos da serração de madeira, folhados e contraplacados, carpintaria
74.	wood	Wood and paper	R170	Produção de papel e impressão	P17000	Papel e artigos de papel e cartão
75.	wood	Wood and paper	R170	Produção de papel e impressão	P18100	Impressão
76.	petr	Petroleum	R200	Fabricação de produtos químicos, plásticos e de borracha	P19200-1	Gasolina
77.	petr	Petroleum	R200	Fabricação de produtos químicos, plásticos e de borracha	P19200-2	Gasóleo
78.	petr	Petroleum	R200	Fabricação de produtos químicos, plásticos e de borracha	P19200-3	Outros combustíveis derivados do petróleo
79.	petr	Petroleum	R200	Fabricação de produtos químicos, plásticos e de borracha	P19200-9	Óleos e massas lubrificantes, inclui betume
80.	chem	Chemicals	R200	Fabricação de produtos químicos, plásticos e de borracha	P20100	Outros produtos químicos industriais
81.	chem	Chemicals	R200	Fabricação de produtos químicos, plásticos e de borracha	P20210	Adubos e pesticidas
82.	chem	Chemicals	R200	Fabricação de produtos químicos, plásticos e de borracha	P20220	Tintas, vernizes, resinas sintéticas e materiais plásticos
83.	chem	Chemicals	R200	Fabricação de produtos químicos, plásticos e de borracha	P20231	Sabões e sabonetes, detergentes, produtos de limpeza
84.	chem	Chemicals	R200	Fabricação de produtos químicos, plásticos e de borracha	P20290	Produtos químicos diversos
85.	chem	Chemicals	R200	Fabricação de produtos químicos, plásticos e de borracha	P21000	Produtos farmacêuticos
86.	chem	Chemicals	R200	Fabricação de produtos químicos, plásticos e de borracha	P22110	Pneus e câmaras de ar
87.	chem	Chemicals	R200	Fabricação de produtos químicos, plásticos e de borracha	P22190	Outros artigos de borracha
88.	chem	Chemicals	R200	Fabricação de produtos químicos, plásticos e de borracha	P22200	Artigos de plástico

Appendix A (cont): Mapping from INE to SAM Activity and Commodity

	SAM Code	SAM Description	INE Activity Code	INE Activity Description	INE Commodity Code	INE Commodity Description
89.	nmet	Non-metal minerals	R230	Fabricação de produtos minerais não metálicos	P23100	Vidro e artigos de vidro
90.	nmet	Non-metal minerals	R230	Fabricação de produtos minerais não metálicos	P23920	Materiais de barro para a construção
91.	nmet	Non-metal minerals	R230	Fabricação de produtos minerais não metálicos	P23910	Artigos de porcelana, faiança e grés
92.	nmet	Non-metal minerals	R230	Fabricação de produtos minerais não metálicos	P23941	Cimento e clínquer
93.	nmet	Non-metal minerals	R230	Fabricação de produtos minerais não metálicos	P23950	Produtos de fibrocimentoç cal e gesso ou (Fabricação de produtos de betão)
94.	nmet	Non-metal minerals	R230	Fabricação de produtos minerais não metálicos	P23960	Pedra para construção e outros produtos nao metálicos
95.	metl	Metals and metal products	R241	Indústria metalúrgica de base	P24100-1	Produtos laminados de ferro e aço
96.	metl	Metals and metal products	R241	Indústria metalúrgica de base	P24100-2	Varão, arame e tubos de ferro ou aço
97.	metl	Metals and metal products	R241	Indústria metalúrgica de base	P24100-3	Outros produtos básicos de ferro ou aço
98.	metl	Metals and metal products	R242	Indústria de alumínio de base	P24200-1	Alumínio
99.	metl	Metals and metal products	R241	Indústria metalúrgica de base	P24200-2	Outros produtos da industria basica de metais não ferrosos
100.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P25110	Elementos de construção em metal
101.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P25930	Cutelarias, ferramentas manuais
102.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P25990	Outros produtos metálicos
103.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P26200	Maquinas de escritorio e equipamento
104.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P26400	Equipamento e aparelhos de radio, TV e comunicacoes
105.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P26999	Outros produtos electrónicos e ópticos
106.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P27500	Aparelhos para uso doméstico, eléctrico e não eléctrico
107.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P27900	Maquinas e aparelhos electricas exc. para uso doméstico
108.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P28210	Tractores e seus acessórios, maquinas e equipamentos agrícolas
109.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P28240	Máquinas para as indústrias extractivas e para construção
110.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P28999	Outras maquinarias e equipamento

Appendix A (cont): Mapping from INE to SAM Activity and Commodity

	SAM Code	SAM Description	INE Activity Code	INE Activity Description	INE Commodity Code	INE Commodity Description
111.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P29100-1	Automóveis para o transporte de passageiros
112.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P29100-2	Outros automóveis (incl. machimbombos)
113.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P29300	Partes, peças separadas e acessórios de automveis
114.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P30000	Outro material de transporte n.e.c.
115.	oman	Other manufacturing	R310	Fabricação de mobiliário (não madeira) e outras indústrias transformadoras	P31000	Mobília
116.	oman	Other manufacturing	R310	Fabricação de mobiliário (não madeira) e outras indústrias transformadoras	P32000	Outros produtos transformados não especificados
117.	mach	Machinery and equipment	R250	Fabricação de prod. metálicos incluído maquinas e equip.	P33000	Reparação e manutenção de produtos metálicos, máquinas e equipamentos
118.	elec	Electricity, gas and steam	R351	Produção, transporte, distribuição e comércio de electricidade	P35100	Electricidade
119.	elec	Electricity, gas and steam	R352	Produção de gás; distribuição de combustíveis gasosos por condutas e comércio de gás por conduta	P35200	Gas
120.	watr	Water supply and sewage	R360	Captação, tratamento e distribuição de água	P36000	Captação, tratamento e distribuição de água
121.	watr	Water supply and sewage	R380	Recolha, tratamento, etc. de águas residuais, lixo, resíduos; descontaminação	P38000	Recolha, tratamento, etc. de águas residuais, lixo, resíduos; descontaminação
122.	cons	Construction	R410	Construção geral de edificios e e desenvolvimento de projectos de edificios	P41000	Construção de edificios (residenciais e não residenciais)
123.	cons	Construction	R421	Construção de auto-estradas, pontes, aeroportos e vias ferreas	P42100	Construcao de auto-estradas, estradas, pontes, aeroportos e vias ferreas
124.	cons	Construction	R422	Construção de redes de transporte de agua, distribuição de energia, de telecomunicacoes e outras redes	P42200	Construcao de redes de transporte de agua, distribuicao de energia, de telecomunicacoes e outras redes
125.	trad	Wholesale and retail trade	R451	Comercio por grosso e a retalho	P45100	Serviços de comércio
126.	trad	Wholesale and retail trade	R452	Manutenção e reparação de veiculos automoveis e motociclos	P45200	Reparação de veículos
127.	tran	Transportation and storage	R491	Transporte ferroviario	P49110	Transporte ferroviário de passageiros
128.	tran	Transportation and storage	R491	Transporte ferroviario	P49120	Transporte ferroviário de mercadorias
129.	tran	Transportation and storage	R492	Transporte rodoviario	P49210	Transporte rodoviário de passageiros
130.	tran	Transportation and storage	R492	Transporte rodoviario	P49230	Transporte rodoviário de mercadorias

Appendix A (cont): Mapping from INE to SAM Activity and Commodity

	SAM Code	SAM Description	INE Activity Code	INE Activity Description	INE Commodity Code	INE Commodity Description
131.	tran	Transportation and storage	R493	Oleodutos e gasodutos	P49300-1	Transporte por oleodutos
132.	tran	Transportation and storage	R493	Oleodutos e gasodutos	P49300-2	Transporte por gasoduto
133.	tran	Transportation and storage	R500	Transportes por água	P50000	Transporte marítimo e cabotagem
134.	tran	Transportation and storage	R510	Transportes aéreo	P51000	Transporte aéreo
135.	tran	Transportation and storage	R520	Armazenagem e actividades auxiliares dos transportes	P52240	Serviços anexas e auxiliares dos transportes
136.	comm	Information and communication	R530	Actividades postais e dos correios	P53000	Serviços de correio
137.	hotl	Accommodation and food services	R550	Alojamento e hotéis	P55000	Serviços de hotéis
138.	hotl	Accommodation and food services	R560	Restauração e similares	P56000	Serviços de restaurantes
139.	comm	Information and communication	R580	Actividades de edição de livros, jornais e de outras publicações	P58000	Edição de livros, jornais e de outras publicações
140.	comm	Information and communication	R590	Actividades de rádio e de televisão	P59000	TV, rádio, filmes vídeos
141.	comm	Information and communication	R610	Telecomunicações	P61100	Serviços de telecomunicações por fio
142.	comm	Information and communication	R610	Telecomunicações	P61200	Serviços de telefonia móvel
143.	comm	Information and communication	R610	Telecomunicações	P61900	Outros serviços de telecomunicações
144.	comm	Information and communication	R620	Consultoria informática e actividades de processamento de dados; portais web	P62000	Consultoria informática, etc.
145.	fsrv	Finance and insurance	R642	Outras instituições financeiras monetárias	P64000-1	Serviços de intermediação financeira exc. SIFIM
146.	fsrv	Finance and insurance	R642	Outras instituições financeiras monetárias	P64000-2	SIFIM
147.	fsrv	Finance and insurance	R650	Seguros e fundos de pensões	P65000	Serviços de seguros
148.	fsrv	Finance and insurance	R660	Actividades auxiliares de serviços financeiros e de seguros	P66000	Serviços auxiliares de intermediação financeira
149.	real	Real estate activities	R680	Actividades imobiliárias	P68000-1	Serviços de imóveis residenciais
150.	real	Real estate activities	R680	Actividades imobiliárias	P68000-2	Outros serviços de imóveis
151.	bsrv	Business services	R690	Actividades de consultoria, científicas, técnicas e similares	P69000	Consultorias científicas, técnicas e similares
152.	bsrv	Business services	R770	Actividades de aluguer	P77000	Serviços de aluguer de máquinas e equipamentos de transporte

Appendix A (cont): Mapping from INE to SAM Activity and Commodity

	SAM Code	SAM Description	INE Activity Code	INE Activity Description	INE Commodity Code	INE Commodity Description
153.	bsrv	Business services	R790	Agências de viagem, operadores turísticos e outros serviços de reservas e actividades relacionadas	P79000	Serviços das agências de viagens e turismo
154.	bsrv	Business services	R820	Actividades de serviços administrativos e de apoio prestados às empresas	P82000	Serviços prestados principalmente às empresas
155.	padm	Public administration	R841	Administração central	P84111	Serviços da administração pública (central) e defesa
156.	padm	Public administration	R842	Administração local	P84112	Serviços da administração autárquica
157.	padm	Public administration	R843	Segurança social obrigatória	P84300	Serviços de segurança social obrigatória
158.	educ	Education	R850	Educação	P85000-1	Serviços de educação pública
159.	educ	Education	R850	Educação	P85000-2	Serviços de educação privada
160.	educ	Education	R850	Educação	P85000-3	Outros serviços educativos
161.	heal	Health and social work	R860	Actividade de saúde humana	P86000-1	Serviços de saúde pública
162.	heal	Health and social work	R860	Actividade de saúde humana	P86000-2	Serviços de saúde privada
163.	heal	Health and social work	R870	Actividades de acção social	P87000-1	Serviços de acção social pública
164.	heal	Health and social work	R870	Actividades de acção social	P87000-2	Serviços de acção social privada
165.	osrv	Other services	R900	Actividades artísticas, espectáculos, desportivos e recreativos	P90000	Serviços artísticas, espectáculos, desportivos e recreativos
166.	osrv	Other services	R940	Actividades de organizações associativas	P94000	Serviços prestados por organizações
167.	osrv	Other services	R950	Reparação de computadores e bens de uso pessoal e doméstico	P95000	Reparação de computadores e bens de uso pessoal e doméstico
168.	osrv	Other services	R960	Outras actividades de serviços pessoais	P96000	Outros serviços pessoais
169.	osrv	Other services	R970	Actividades das famílias empregadoras de pessoal doméstico	P97000	Serviços domésticos
170.	osrv	Other services			P99300	Aquisições efectuadas directamente no estrangeiro
171.	osrv	Other services			P99400	Aquisições efectuadas pelos não residentes no país
172.	mach	Machinery and equipment			P99900	Produtos não especificados

Source: Authors' own compilation.

Appendix B: Global Set for a 2015 SAM for Mozambique

28 acvgp	82	ccvgp	Cereal and veg processing	126	hhd-r5	Rural - Quintile 5
29 afood	83	cfood	Other foods	127	hhd-u1	Urban - Quintile 1
30 aptob	84	cptob	Tobacco processing	128	hhd-u2	Urban - Quintile 2
31 atext	85	ctext	Textiles	129	hhd-u3	Urban - Quintile 3
32 aclth	86	cclth	Clothing	130	hhd-u4	Urban - Quintile 4
33 aleat	87	cleat	Leather and footwear	131	hhd-u5	Urban - Quintile 5
34 awood	88	cwood	Wood and paper	132	mgov	Government
35 apetr	89	cpetr	Petroleum	133	matx	Taxes - Activity
36 achem	90	cchem	Chemicals	134	mftx	Taxes - Factors
37 anmet	91	cnmet	Non-metal minerals	135	mstx	Taxes – Sales
38 ametl	92	cmatl	Metals and metal products	136	mmtx	Taxes – Import
39 amach	93	cmach	Machinery and equipment	137	metx	Taxes – Export
40 aoman	94	coman	Other manufacturing	138	mdtx	Taxes - Direct
41 aelec	95	celec	Electricity, gas and steam	139	mstk	Change in stocks
42 awatr	96	cwatr	Water supply and sewage	140	ms-i	Savings-Investment
43 acons	97	ccons	Construction	141	mrow	Rest of world
44 atrad	98	ctrad	Wholesale and retail trade			

Note: not all accounts contain data

Source: Authors' own compilation.