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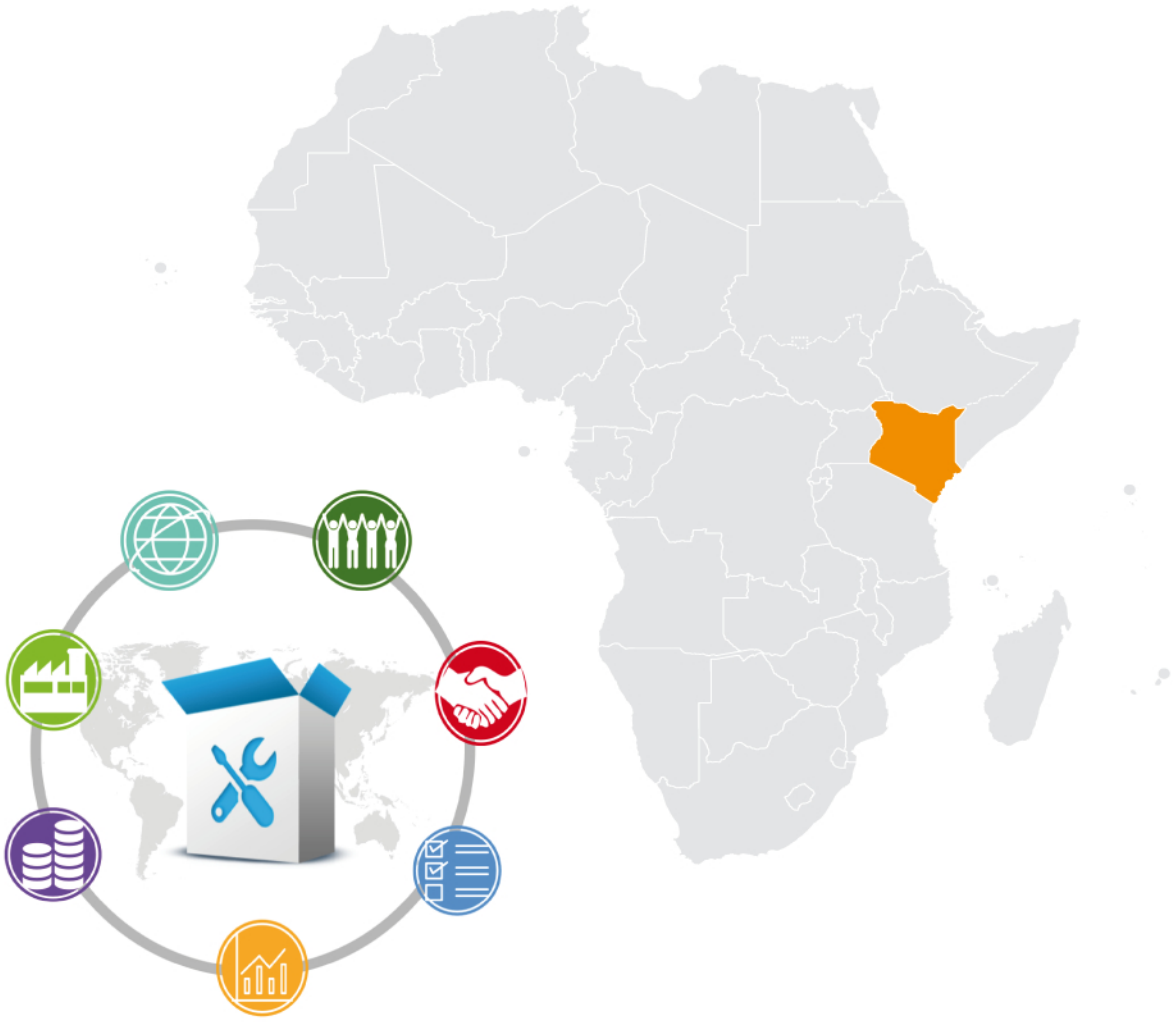

TRADE AND GENDER TOOLBOX

HOW WILL THE ECONOMIC PARTNERSHIP AGREEMENT BETWEEN THE EUROPEAN UNION AND THE EAST AFRICAN COMMUNITY AFFECT KENYAN WOMEN?

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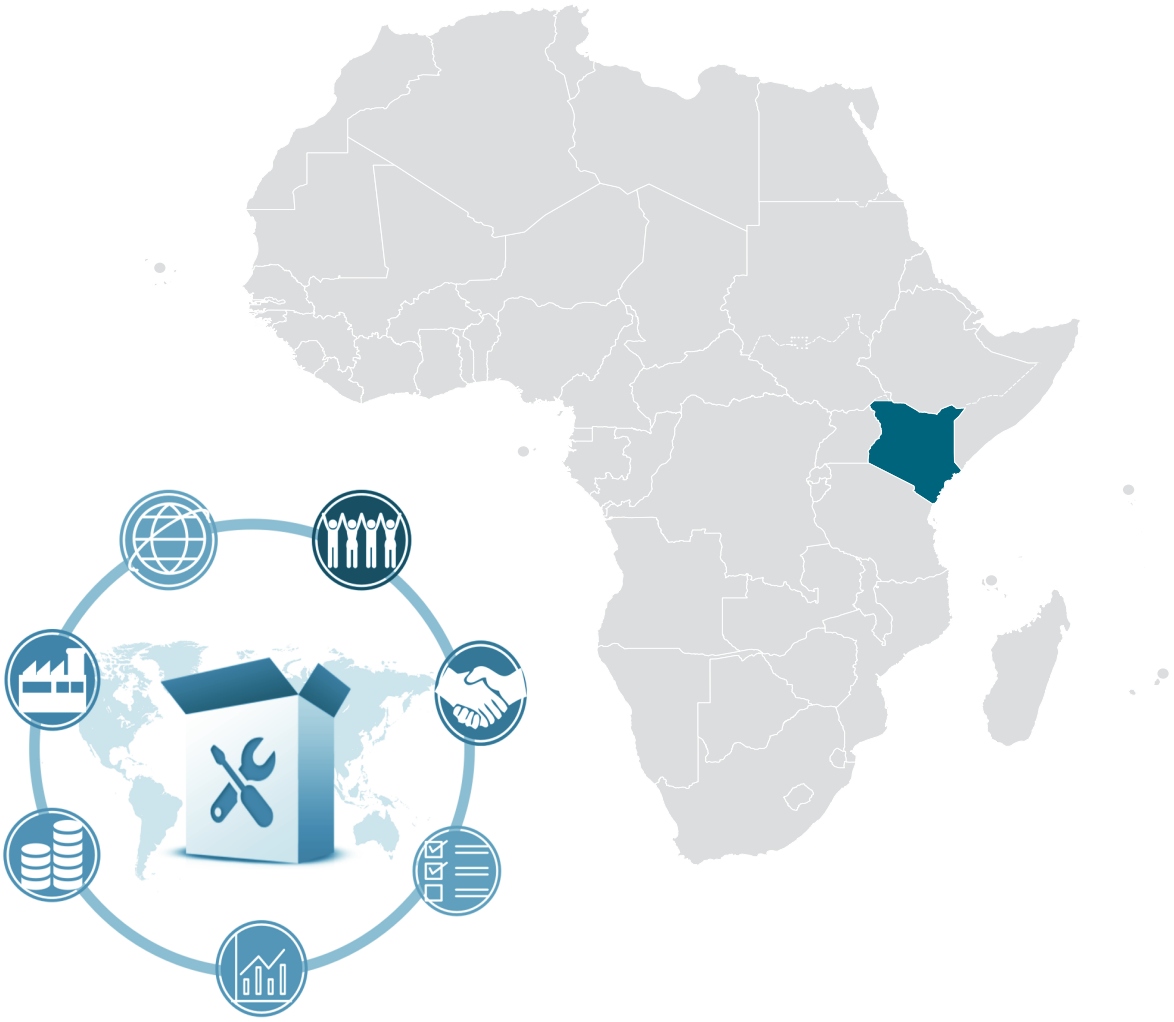

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LIST OF ABBREVIATIONS

ACP	Africa, Caribbean, Pacific
CGE	Computable General Equilibrium
EAC	East African Community
EBA	Everything But Arms
EPA	Economic Partnership Agreement
EU	European Union
FAO	Food and Agriculture Organization
GATT	General Agreement on Trade and Tariffs
GDP	Gross domestic product
GEG	Gender employment gap
GSP	Generalized System of Preferences
GTAP	Global Trade Analysis Project
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
IPUMS	Integrated Public Use Microdata Series
JHC	Jesuit Hakimani Centre
KHRC	Kenya Human Rights Committee
KLA	Kenya Land Alliance
KNBS	Kenyan National Bureau of Statistics
KSh	Kenyan shilling
LDCs	Least developed countries
PPP	Purchasing power parity
RoW	Rest of the world
TGI	Trade and Gender Index
TO	Trade Openness Index
UNCTAD	United Nations Conference on Trade and Development
WEF	World Economic Forum

EXECUTIVE SUMMARY

The Trade and Gender Toolbox is the first attempt to provide a systematic framework to evaluate the impact of trade reforms on women and gender inequalities prior to implementation of those reforms. The methodology is applied to a specific trade agreement – the Economic Partnership Agreement (EPA) between the European Union and the East African Community (EAC) – and is used to assess the likely impact of the EPA on the well-being and gender equality of women in Kenya, an EAC partner state, mainly through employment. The same methodology can be used to assess the gender impacts of any other trade agreement or trade reform in any other country.

Developing countries are increasingly entering into bilateral and regional trade agreements with other developing countries, but also with developed countries and regions. Free trade agreements affect the structure of production, employment patterns, incomes, and the price of goods and services, with possible distinct impacts on women and men. Indeed, trade liberalization can act as a powerful force towards closing gender gaps by providing new opportunities for women, but may also exacerbate existing gender biases and discrimination.

Existing evidence about the effects of trade liberalization on women indicates no clear general pattern, but rather suggests that this relationship is likely context-specific and difficult to generalize. This is why the gender implications of trade reforms should be assessed on a case-by-case basis. An ex ante gender evaluation predicts the impact of a trade measure using data prior to its implementation. Essentially, ex ante gender analysis answers the question: what would happen to women if a given trade policy were implemented?

The toolbox developed by UNCTAD has four main components: (i) descriptive analysis of gender inequalities and the economic context of the country at stake; (ii) quantitative analysis of the expected consequences of the trade reform on the economy (e.g., exports, GDP, sectoral labor demand) and on women's participation in the economy in particular; (iii) a checklist for gender-sensitive accompanying measures and monitoring indicators; and (iv) a Trade and Gender Index.

The first component provides the economic context of the selected country, depicts women's participation in the economy, and singles out existing gender inequalities. The second component simulates the impact of trade reforms on the economy. The results of the first two components are matched in order to identify the critical economic sectors where trade liberalization is likely to have an impact on women by either alleviating or exacerbating gender inequalities. The third component provides a checklist for guiding the implementation of accompanying measures to achieve greater gender equality or to reduce the risk of making gender disparities worse. It also includes a monitoring framework to evaluate the effects of the trade reforms on gender equality over time by using specific indicators, such as changes in female employment, the gender wage gap, and access to productive resources. Finally, the fourth component of the toolbox is a Trade and Gender Index. The computation of this index serves as a measure to summarize the evolution of trade integration and gender equalities in the workplace at the aggregated sectoral level. The index is used for within-country analysis over time.

The negotiations between the EAC and the European Union for a region-to-region EPA were finalized in October 2014. The agreement covers trade in goods and development cooperation. It contains a specific chapter on fisheries – aimed mainly at reinforcing cooperation on the sustainable use of fishery resources – and foresees further negotiations on services and other trade-related areas, such as competition policy, investment, public procurement, and intellectual property rights. The agreement includes immediate duty-free and quota-free access to the European Union market for all EAC exports, and a partial and gradual opening of the EAC market to imports from the European Union, in recognition of the different level of development between EAC and European Union countries. A number of "sensitive" products are excluded from EAC liberalization commitments, including various agricultural products, chemicals, plastics, textiles and clothing, and footwear.

The agreement was expected to be signed and ratified by October 2016. However, at the time of this writing (June 2017) the future of the EPA remained unclear. On 1 September 2016, Kenya and Rwanda signed the EPA. Kenya ratified the agreement on 20 September 2016; Rwanda has not ratified it yet. The European Union and all of its member states have also

signed the EPA. Kenya ratified the agreement on 20 September 2016; Rwanda has not ratified it yet. The other EAC countries (Burundi, Uganda, South Sudan, and the United Republic of Tanzania) have neither signed nor ratified the EPA. This uncertainty can be particularly problematic for Kenya's economy. While the other EAC members benefit from duty-free access in the European Union market under the Everything But Arms (EBA) scheme because of their status as least developed countries (LDCs), Kenya was exceptionally granted duty-free entry to the European Union market during the negotiation rounds. In the event that the EPA does not come into force, the other EAC countries will likely retain their duty-free access to the European Union market because they are LDCs, while Kenya will have no such access. If the EPA does not enter into force, Kenya's exports to the European Union market fall under the Generalized System of Preferences (GSP) granted to developing countries, a less favorable scheme than the EBA scheme.

Europe is the second most important continent in terms of destinations for Kenyan exports, accounting for a quarter of the country's total exports. The European Union share in total exports is 22 per cent, equal to the share of Kenyan exports to other EAC countries. The European Union is the second most important partner in terms of imports, with a share of 15 per cent of total Kenyan imports. Tea is the most exported item by Kenya, followed by horticulture (cut flowers, fresh fruits, and vegetables) and, well behind, apparel, coffee and tobacco. On the import side, petroleum accounts for the largest share of Kenyan imports, followed by industrial machinery, road motor vehicles, and iron and steel.

The toolbox aims to answer the question of what the economic impact of the EPA would be on Kenyan women. To do so, the toolbox uses the GSP as the reference scenario. In other words, the two scenarios that are compared constitute one scenario where the EPA determines the trade regime between Kenya and the European Union, and an alternative scenario where the applied trade rules are those of the GSP.

The toolbox methodology is used to estimate the impact of implementation of the EPA (and particularly the tariff reduction on European Union exports to Kenya) on Kenya's GDP and exports; on the country's labour demand by sector; and on the Kenyan female labour force. The methodology is based on a Computable General Equilibrium (CGE) model. Specifically, it makes use of the Global Trade Analysis Project (GTAP) based on a static, multi-country, multi-sector CGE model.

According to the calculations, the impact of implementation of the EPA (as compared to the GSP scenario) is positive on Kenyan GDP, exports, and household income, but to a very small extent (0.02 per cent or less). Overall, the results of the estimation indicate a net welfare benefit, implying that the benefits for consumers (lower prices of imported goods) and producers (increased export opportunities) altogether outweigh the losses faced by import-competing producers, reduced employment, and diminished tariff revenues.

Conversely, the results show an overall negative effect of the EPA, compared to the GSP scenario, on the employment of both skilled and unskilled labour. There are no significant differences between the expected variation in demand for skilled and unskilled labour across most sectors. However, in all sectors the expected impact on labour demand is small in magnitude, as the estimated variation is generally less than 1 per cent. The most negatively affected labour force is in that of the chemical sector, where demand for skilled and unskilled labour is expected to decrease by 1.14 per cent and 0.54 per cent, respectively. Notable exceptions to the overall negative impact of the EPA on labour demand arise in the other crops, leather, and heavy manufacturing sectors, where demand for both skilled and unskilled labour is expected to increase.

There are several channels of transmission that may explain the effect of the EPA on labour demand. First, trade openness can lead to a sectoral shift, with import-competing sectors declining and export-oriented sectors expanding as a result of a change in relative prices. Second, tariff liberalization may induce local producers in Kenya to restructure their firms to be able to face competition from abroad. This may also result in the eviction of the least efficient outlets. Third, the adoption of new imported technologies may lead to a change in production patterns and labour requirements, with, for example, more automated tasks. Fourth, the fact that certain sectors shrink due to stiffened competition may affect other sectors of the economy due to existing interdependencies across sectors.

Moving to the possible impact of the EPA scenario as compared to the GSP one, specifically on sectors that employ a significant share of female workers, the

results differ by sector. It should be noted, however, that data are available only for the formal sector, so they do not fully reflect women's participation in the economy. Complementary sources are used to get a more accurate picture of economic sectors relevant for women. The government is the largest formal employer for Kenyan women (49 per cent of the formal female workforce in 2015), while agriculture is the second (12.4 per cent), followed by own-account activities (7.1 per cent), wholesale and retail trade (5.7 per cent), and manufacturing (5.3 per cent). However, around 85 per cent of active women work in the informal sector. They are involved in different kinds of activities ranging from selling second-hand items or food in open-air markets, to operating small grocery kiosks or providing low value-added services, such as hairdressing.

For agricultural crops where women are active economic agents, namely tea, horticulture, and coffee, the average estimated effect on labour demand is marginally positive. This is most likely driven by an increase in the output of this sector. The fact that no negative effect is found for these crops is due to their inclusion on the list of "sensitive products," which excludes them from the EPA liberalization schedule. Following implementation of the EPA, labour demand is expected to shrink in the public sector, albeit slightly. This is the result of the reduction in public expenditure due to the decline in government revenues induced by removal of the tariffs faced by European partners. Regarding manufacturing products, the estimated impact of the EPA on unskilled labour demand is largely negative. Textiles and tobacco manufactures are the least negatively affected, while chemicals and furniture-related activities are the most impacted, though to a small extent. It should be noted, however, that the chemicals and furniture sectors account for only a small share of the female workforce.

Overall, these results suggest that implementation of the EPA, compared to the GSP scenario, is likely to marginally affect Kenyan women in the workplace. Yet, the effects are on average negative for labour demand in the sectors that account for a significant share of the country's female workforce, though such negative effects are small in magnitude. Therefore, following implementation of the EPA, measures should be taken to minimize the possible adverse effects on women. For this purpose, this report includes a checklist to support policymakers in assessing accompanying policies that would facilitate greater gender equality or reduce the risk of exacerbating existing gender disparities. The three areas addressed in the checklist are export promotion, support to import-competing sectors, and other measures related to welfare. Governments may then ask themselves whether domestic-production support measures are in place. If they are, do they target sensitive sectors for women? Are women and men equally addressed by such measures? If there is an expected reduction in public expenditures due to tariff revenue loss, governments may need to assess whether such a reduction will likely translate into more limited provision of public services and who will be particularly affected by it.

The toolbox also provides a monitoring mechanism to help countries assess whether gender inequalities in the workplace and in access to resources have decreased or conversely increased following the trade reforms. For this purpose, some indicators are put forth as measures, including female employment, the gender wage gap, and access to productive resources. By looking at those indicators and tracking changes over time, countries will be able to assess the evolution of gender disparities. This report includes data on those indicators for Kenya.

Finally, the report presents the results of the Trade and Gender Index for Kenya for the period 2008–2015. The index summarizes the evolution of gender inequalities and trade in a single indicator over time. More specifically, the index includes an indicator of gender inequalities in the workplace, through the computation of a gender employment gap, and an indicator of trade openness, by measuring the extent to which the country opened to trade. The index therefore informs on the simultaneous evolution of both dimensions. It does not establish a causal relation between those dimensions, though, since many factors beyond trade openness may play a role in alleviating or exacerbating gender inequalities. Nevertheless, the index may be used as a signal to indicate whether or not trade openness has benefitted women in the workplace. The Trade and Gender Index for Kenya suggests that the evolution of gender inequalities in the country should be scrutinized due to the trend in recent years of a worsening in the gender employment gap in agriculture and manufacturing. The possible implementation of the EPA may lead to a deterioration of working conditions in the sectors that account for a significant share of the female workforce.

1. INTRODUCTION TO THE TOOLBOX

1.1. THE NEED FOR A TOOLBOX TO EVALUATE THE EX ANTE GENDER IMPACT OF TRADE REFORMS

Trade policies tend to have a strong redistributive effect, both across economic sectors and among individuals. Existing evidence suggests that trade policies can have a significant and distinctive impact on women and men, particularly in terms of wages and employment (Beneria et al., 2015; Van Staveren et al., 2007). This impact, however, is multifaceted. Trade can give rise to opportunities for women's empowerment by opening new markets for their products and by providing formal employment, but it can also negatively affect them when, for example, it disrupts female-intensive sectors or when women are confronted with cheaper and sometimes better-quality imported goods that compete with their own products. Technological upgrading remains a challenge for many female producers. Women entrepreneurs are often found in small-scale activities and lack access to the capital, technical training, and marketing skills necessary to benefit from new trade opportunities, or at least survive in the presence of foreign competition. As consumers, women may gain when agricultural tariffs are reduced, but may lose as producers when the prices of those commodities fall. There are also other channels through which trade liberalization may affect gender inequalities, such as a reduction in public expenditure or an increase in taxation to offset tariff revenue losses. Because trade reforms have complex, and possibly negative, implications for women, the gender dimension should be considered during the design and implementation of trade policies.

The impact of trade liberalization on gender equality needs to be explored not only for equity concerns, but also for long-run growth prospects. There is evidence that empowering women has a catalytic effect on social and economic development, as it promotes education as well as better outcomes in family planning and agricultural development (Seguino, 2000). Therefore, it is important to mainstream gender in trade policy in order to maximize the benefits of trade reforms on economic development.

Mainstreaming gender in trade policy requires assessing to what extent trade policies affect men and women in a distinctive manner so as to make policies responsive to gender considerations. Ex ante assessment of the gender implications of trade policies is therefore critical in order to design these policies in a way that favors women's empowerment and well-being, and at the same time mitigates existing disparities and avoids exacerbating gender inequalities.

1.2. THE TOOLBOX APPROACH

The Trade and Gender Toolbox is the first attempt to provide a systematic framework to evaluate the impact of trade reforms on women and gender inequalities prior to their implementation. The toolbox relies on a stepwise approach (figure 1). First, it identifies the participation of women in the economy and the specificities of that participation based on legal texts and existing surveys. Second, it evaluates how expected trade reforms could affect different sectors of the economy. The results of the first two steps are matched in order to identify the critical economic sectors where trade liberalization is likely to have an impact on women by either alleviating or worsening gender inequalities. The third step introduces a checklist to guide the implementation of accompanying measures to achieve greater gender equality or to reduce the risk of exacerbating gender disparities. It also includes a monitoring framework to evaluate the effects of the trade reforms on gender equality over time (i.e. before and after the trade reform). Finally, the fourth step presents a Trade and Gender Index to measure the co-evolution of trade openness and gender inequality in the workplace.

The toolbox is intended for policymakers involved in trade negotiations, including government officials, but also for development practitioners working on gender equality issues. It aims to equip the relevant stakeholders with the necessary tools to gauge the effect of trade policies on gender equality. In addition, the toolbox provides a checklist to guide policymakers in selecting measures to accompany the trade reforms in the event that negative impacts on gender inequalities are foreseen.

This initiative contributes to ensuring that trade plays its role as a tool for inclusive development and for the economic empowerment of women, in line with the United Nations 2030 Agenda for Sustainable Development and Addis Ababa Action Agenda.

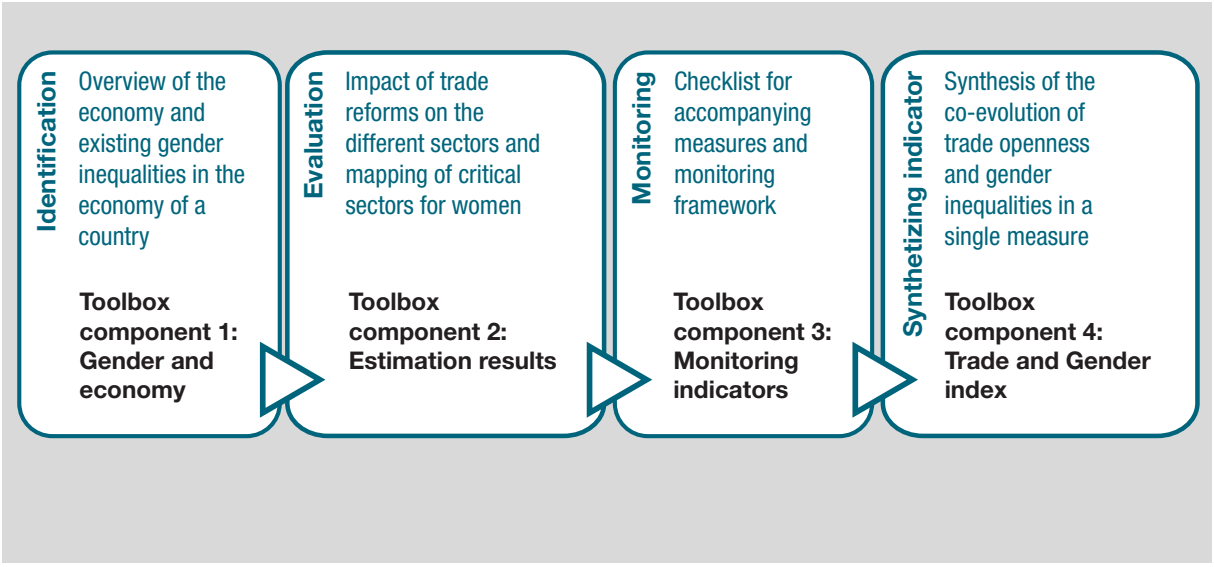
1.3. ORGANIZATION OF THE TOOLBOX

The four components of the toolbox are associated with corresponding worksheets that are presented as accompanying documents in Section 8 of this document:

- Worksheet 1: Gender and economy
- Worksheet 2: Estimation results
- Worksheet 3: Monitoring indicators
- Worksheet 4: Trade and Gender Index

This report summarizes the findings collected in those worksheets. Section 2 provides a brief user guide for the toolbox and a schematic summary of the key findings. Section 3 presents an overview of gender inequalities in Kenya, while Section 4 provides a synthesis of the country's economic situation. Section 5 summarizes the results of the estimation of the impact of the trade reforms on women. Section 6 discusses the computation of a Trade and Gender Index. Section 7 provides a presentation of the statistical methodology, and Section 8 presents the Toolbox Worksheets.

Figure 1. Stepwise approach of the toolbox to evaluate the impact of trade reforms on women and gender inequalities



2. USER GUIDE AND KEY FINDINGS

2.1. A USER GUIDE TO THE TOOLBOX

The toolbox aims to deliver tools to policymakers, and stakeholders in general, to assess the consequences of trade reforms on gender equalities ex ante. The tools and the structure of the toolbox can be replicated for assessing the consequences of trade reforms on women for any country. In the present document, the toolbox is applied to Kenya to forecast the impact of implementation of the Economic Partnership Agreement (EPA) between the East African Community (EAC) and the European Union, as described in the paragraphs below.

The toolbox is composed of four main components that are summarized and described in this report:

i. Descriptive analysis of gender inequalities and the economic context (see Sections 3 and 4 and Toolbox Worksheet 1)

ii. Quantitative analysis of the expected consequences of the reforms on the economy and on women in particular (see Sections 5.1. to 5.3 and Toolbox Worksheet 2)

iii. Checklist and monitoring indicators (see Sections 5.4 and 5.5 and Toolbox Worksheet 3);

iv. Trade and Gender Index (see Section 6 and Toolbox Worksheet 4).

The rationale of the first component is to get a picture of the participation of women in the economy and the level of existing gender inequalities, as well as the economic context of the country. This component is a prerequisite to get a thorough understanding of the country's economy and gender profile in order to properly interpret the other components of the toolbox. This component relies on the collection of detailed statistics that are gathered in a separate worksheet (Toolbox Worksheet 1) and interpreted in the present document in Sections 3 and 4. The corresponding sources are systematically reported in the worksheets to facilitate a replication of the results.

In a second component, a rigorous quantitative estimation is undertaken to simulate the impact of the trade reforms on the economy. The results of the estimation are presented in Section 5, the methodology is described in the methodological appendix (Section 7), and the corresponding results are provided in Toolbox Worksheet 2. These results are matched with those of the previous section related to female participation in the economy in order to identify the sectors likely to face a worsening of gender inequalities or, conversely, an improvement. In addition, the toolbox provides a checklist for guiding implementation of accompanying measures to mitigate the possible negative effects on women or, conversely, to foster the benefits for them.

A series of monitoring indicators is also presented, allowing for the preparation of an analysis of the gender impact of trade reforms over time (Section 5.5). This component is particularly important both to monitor the effects of the trade reforms and to assess the relevance of corrective measures through the observation of reliable and comparable indicators before and after the reforms. A framework for monitoring these indicators is provided in Toolbox Worksheet 3.

Finally, a Trade and Gender Index is presented in Section 6. This index provides a synthetic measure for analysing the co-evolution of trade integration and gender inequalities in the workplace. A corresponding worksheet (Toolbox Worksheet 4) is dedicated to the computations for this analysis. As such, the index will not be used for cross-country comparisons but rather for within-country analysis over time.

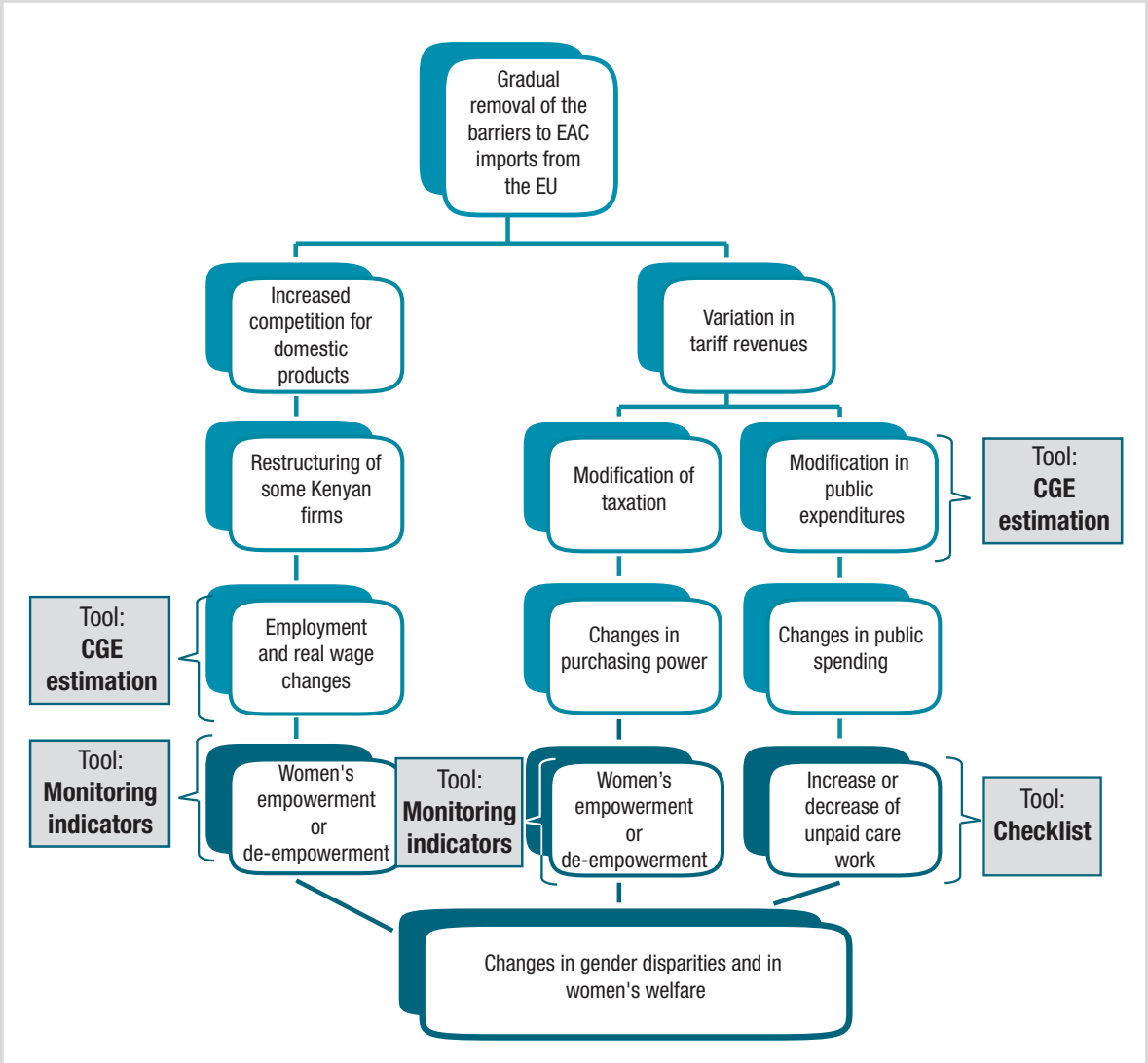
In this document, the toolbox is applied to analyse the consequences of implementation of the EPA between the European Union and the EAC on gender equality in Kenya. The EPA negotiations between the EAC and the European Union were finalized on 16 October 2014, with a scheduled signing of the EPA set for 18 July 2016. As of June 2017, only Kenya had signed and ratified the EPA, while Rwanda had signed but not ratified it. At the time this report was prepared (June 2017), the future of the EPA remained unclear. This uncertainty could be particularly problematic for Kenya's economy. While the other EAC members benefit from duty-free access in the European Union market under the Everything But Arms (EBA) scheme because of their status as least developed countries (LDCs), Kenya – which is classified as a developing country – was exceptionally granted duty-free entry to the European Union market during the negotiation rounds. In the event that the EPA does not come into force, the other EAC countries will likely retain their duty-free access because they are LDCs, but Kenya will not. Because of Kenya's status as a developing

country, a failure to finalize the EPA would mean that Kenya's exports to the European Union would fall under the Generalized System of Preferences (GSP) granted to developing countries, a less favorable scheme than the EBA scheme.

The stakes are therefore high for Kenya and possibly for Kenyan women. For this reason, the toolbox can be particularly relevant to assess the future consequences of the EPA for women and help to maximize its benefits or minimize its potential adverse effects on gender equality.

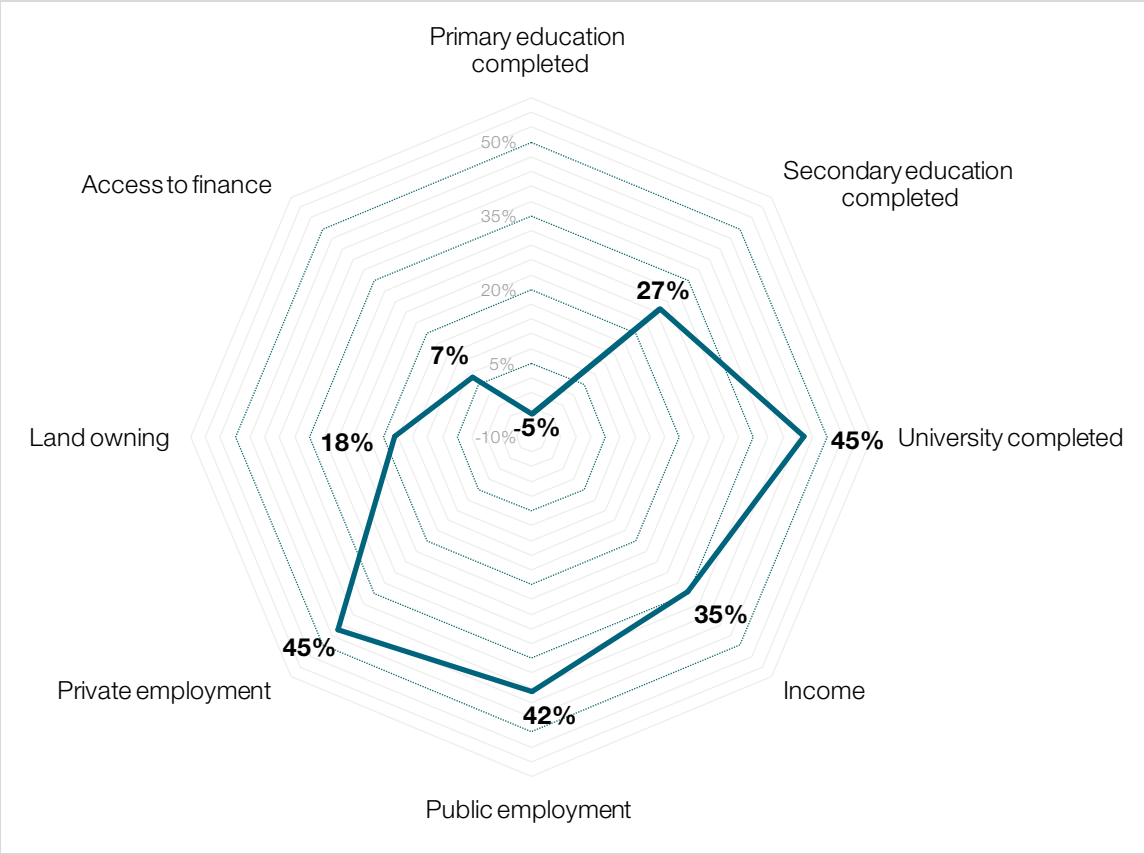
Figure 2 illustrates (non-exhaustively) how the different components of the toolbox can be used to identify the possible effects on women of the removal of the barriers to EAC imports from the European Union in Kenya.

Figure 2. Schematic mapping of the relevant tools of the toolbox to assess the possible effects of the EPA



Note: The figure is a non-exhaustive illustration of the possible transmission channels from trade reforms to gender equalities and shows how the toolbox can be used to understand these effects. CGE: Computable General Equilibrium Model; EAC: East African Community; EPA: Economic Partnership Agreement; EU: European Union.

Figure 3. Overview of the multiple dimensions of the gender gap in Kenya



Source: Calculations by the UNCTAD secretariat based on various sources.
Note: The reported figures are the relative gender gap calculated as follows: $(X_{male} - X_{female}) / X_{male}$, where X_{male} and X_{female} represents male and female values of indicator X. The gender gaps are calculated using the most recent available data. The gender gap for education completion (World Bank) and employment (Kenyan National Bureau of Statistics) is based on data for 2009 (the 2009 Kenya Population and Housing Census is the latest census data available for Kenya). For land owning (World Bank) and income (World Economic Forum), the gender gap is based on 2016 data, and for access to finance (World Bank) it is based on 2014 data.

2.2. KEY FINDINGS

The collection of data from various sources in Section 3 allows for obtaining an overview of existing gender imbalances in Kenya across different dimensions, as summarized in figure 3. Each summit of the bold line corresponds to the value of the gender gap (calculated as the ratio of the difference between men's and women's value, divided by men's) for the corresponding dimension. The larger the area within the polygon (outlined by the bold line), the greater the size of the gender imbalance.

According to figure 3, Kenyan women are disadvantaged in almost all of the dimensions shown, including education, employment, and access to resources, as indicated by the positive gender gaps. A notable exception is primary education, where girls outnumber boys, as reflected by the negative gender gap, owing to the fact that primary school in Kenya has been free and compulsory since 2003. However, the gender gap jumps to 27 per cent at the secondary level and worsens at university level, where women represent less than half the number of men. This situation persists in the (formal) workplace, where the gender employment gap is high, and is similar across the public and private sectors, reaching 42 and 45 per cent, respectively. In terms of income, women are clearly disadvantaged, as they earn an estimated 35 per cent less than men. Interestingly, the gender gap is lower in terms of access to resources.

Considering gender inequalities in land owning (sole and joint property), the gap is estimated at 18 per cent. Considering exclusively the gender gap in sole property, however, the gap increases to 77 per cent. In terms of access to formal financial services, the gender gap is even lower, at 7 per cent.

The second component of the toolbox (Section 5) focuses on the estimated effects of the EPA on sectors that are critical for the female workforce. Relying on the estimation of a general equilibrium model, we are able to predict the variation in labour demand induced by implementation of the EPA. Then, we concentrate on the economic sectors that include a significant share of the female labour force. Based on the results obtained, two key results stand out. First, the impact of the EPA on women's labour demand is uneven across sectors: it is positive for the selected agricultural crops, but negative for all the other sectors. Second, the estimated effects are small in magnitude, ranging between -1.14 per cent and 0.02 per cent, indicating that the EPA is likely to only marginally affect Kenyan women in the workplace. On average, however, the effect on labour demand is negative. The toolbox provides additional tools to accompany the implementation of supporting measures for women.

3. PARTICIPATION OF WOMEN IN THE KENYAN ECONOMY

3.1. ACCESS TO RESOURCES

3.1.1. Access to land

Land is an important component of resources, as it can generate income through cash crop farming, serve as collateral for credit to finance other activities, or provide for subsistence farming. The Kenyan legal framework, and land property rights in particular, have been undergoing significant changes since the promulgation of the country's new Constitution in 2010. The new bill of rights acknowledges the right of women to equal treatment under the law and prohibits gender-based discrimination. Furthermore, the Matrimonial Property Act of 2013 states explicitly that married women and married men have the same property rights, and the inheritance laws in Kenya make no distinction between the rights of sons and daughters. However, female and male surviving spouses are still not equal to inherit assets (World Bank, 2016). In spite of a relatively progressive legal framework, women's land ownership in Kenya still lags far behind men's. In Kenya, women hold only 1 per cent of registered land in their names and around 5-6 per cent of registered titles are held in joint names (KLA, 2014). In 2014, 30 per cent of men owned a house alone, while only 7 per cent for women did so (table 1). The same pattern applies to house ownership; the proportion of joint property is much greater than the share of own property for women as opposed to men. The persistence of gender disparities in land access can be explained, at least partly, by the fact that customary land laws that discriminate against women still prevail even under the new constitution (Kiriti-Nganga, 2015).

3.1.2. Access to financial resources

Based on recent estimates (World Bank, 2016), the gender gap in access to formal financial resources is around 7 percentage points in Kenya, with 59 per cent of men and 52 per cent of women holding an account at a financial institution in 2014. This gender gap marginally increased over time: from 6.5 per cent in 2011 to an estimated 7 per cent in 2014. While women represent nearly half of micro, small and medium-size enterprise owners in Kenya, they hold less than 10 per cent of available credit (Ellis, 2007). The gender disparity in formal credit access is the result of a combination of factors. First, women lack collateral, as men often own the land. Second, a significant share of economically active women work in the informal sector and are therefore considered higher-risk borrowers. Third, women often earn lower wages, increasing the difficulties in accessing credit, especially given the fact that formal banks have high opening fees and minimum balance requirements (Dupas and Robinson, 2013). Fourth, women lack information about existing formal financial services and access requirements, which may be due to limited digital literacy. To confront these constraints, women resort to informal financial services that range from informal lenders such as usurers that charge high interest rates to rotating savings and credit associations[1] and savings and credit cooperatives. An analysis of the determinants of credit access, relying on data provided by the Financial Access Surveys (Johnson and Nino-Zarazua, 2011), confirms that being a woman increases the probability of resorting to informal financial services. These alternatives provide small loans and often for short time periods, which may help female-led businesses meet short-term needs but does not help them to expand to any considerable extent (Kiriti-Nganga, 2015).

Access to financial resources is a critical issue. It is a highly effective instrument to empower women economically, as evidenced by a recent field

Table 1. House and land ownership by sex, 2014

	Per cent of men who own…	Per cent of women who own…
House alone	37.8	7.9
House jointly	11.0	30.6
Land alone	30.2	7.0
Land jointly	12.6	28.2

Source: World Bank Gender Statistics Database, 2016.

experiment undertaken in Kenya by Dupas and Robinson (2013). In the framework of their experiment, they randomized the access to non-interest-bearing bank accounts among two types of self-employed individuals in rural Kenya: market vendors (mostly women) and bicycle taxi drivers (exclusively men). Women significantly increased their total savings as well as their investments in their businesses compared to the control group. After 4-6 months, the authors' most conservative estimate suggests a 38-56 per cent increase in average daily investment for market women following access to a bank account. Beneficiary market women also significantly increased their expenditures, with daily private expenditures about 37 per cent higher compared to similar women without bank accounts.

3.2. ACCESS TO EDUCATION

Since 2003, primary school has been free and compulsory in Kenya. As a consequence, discrimination against girls does not appear in the primary track. In 2012, around 87 per cent of girls and 83 per cent of boys within the official age group for primary education were enroled in Kenya (figure 4). According to the 2009 Population and Housing Census, girls even outnumber boys in terms of completion of the primary track (table 2).

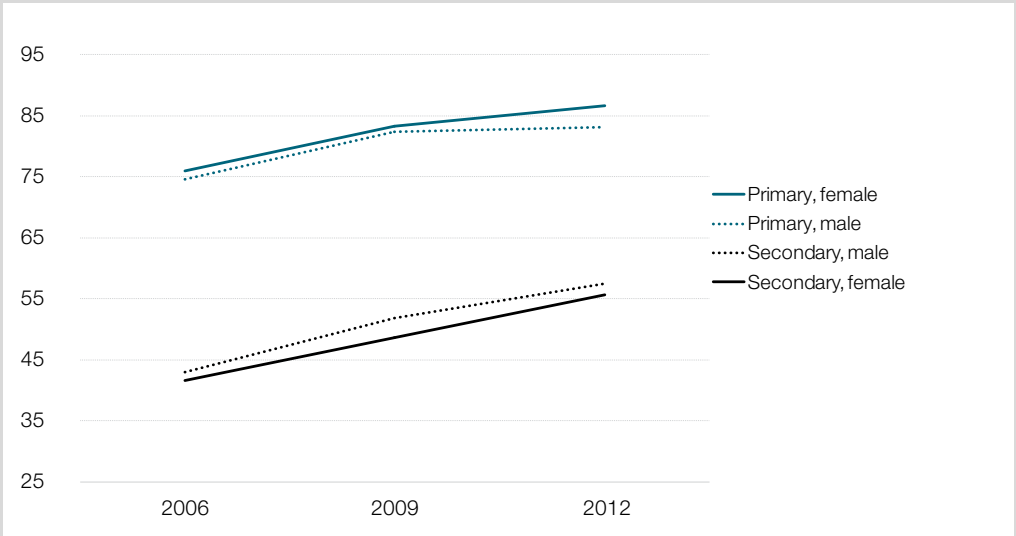
Above the primary level, there is a positive relationship between the educational level and the magnitude of the gender gap in educational attainment (i.e. the higher the educational level, the greater the difference between the educational attainment of men and that of women). This reflects high female dropout rates and low transition rates to secondary schools for girls. The estimated gender gap indicates that males were at least 20 per cent more likely to complete the secondary track than females in 2009. The gap is higher at the university level, where the number of men that completed university (20,920) is almost double that of women (11,701) (table 2).

3.3. FEMALE EMPLOYMENT PATTERNS

The workforce in Kenya is essentially located in the informal sector through self-employment and informal family businesses. According to the 2009 Kenyan Population and Housing Census, the most comprehensive and reliable source of statistics to measure participation in the informal sector, only 15 per cent of the working population is in the formal private sector, with a higher proportion for men (18 per cent) than women (11 per cent). In the informal sector, women outnumber men: 76 per cent of active men work in the informal sector and this proportion climbs to 85 per cent for active women (table 3).

Among individuals working informally within family holdings, both men and women are preponderantly found in non-agricultural activities (table 4), though

Figure 4. Educational enrolment by sex, 2006–2012 (per cent)



Source: World Bank, World Development Indicators, 2016.

the proportion is higher for women, with 75 per cent of women working informally within family holdings involved in non-agricultural activities. According to various sources cited in Kiriti-Nganga (2015), women working in the informal sector are essentially involved in retail trade selling second-hand items or food in open-air markets, hairdressing, operating small grocery kiosks, etc. Unfortunately, more detailed statistics about the activities of women in the informal sector are non-existent or unreliable.

Table 2. Educational attainment by sex, 2009

	Male	Female	Males (per cent)	Females (per cent)	Gender gap (per cent)
No schooling	448,679	513,621	25.96	29.11	-12.14
Some primary completed	437,525	437,022	25.31	24.77	2.15
Primary (six years) completed	401,933	432,031	23.25	24.48	-5.30
Lower secondary general completed	125,452	124,647	7.26	7.06	2.67
Secondary, general track completed	184,775	148,698	10.69	8.43	21.17
Some college completed	7,851	5,776	0.45	0.33	27.93
Secondary, technical track completed	6,435	4,531	0.37	0.26	31.02
Post-secondary technical education	47,937	43,161	2.77	2.45	11.80
University completed	20,920	11,701	1.21	0.66	45.21
Unknown/missing	47,085	43,369	2.72	2.46	9.77

Source: Calculations by the UNCTAD secretariat based on Kenya's 2009 Population and Housing Census, available via the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center, 2015).
Note: The gender gap is calculated by dividing the difference between male and female educational attainment by male attainment. These figures are computed for the total population sample.

Table 3. Sectoral employment by sex, 2009

	Males (per cent)	Females (per cent)	Gender gap (per cent)
Public sector	4.64	2.92	41.76
Formal private sector	18.32	10.82	45.37
Individual/family enterprise and self-employment	75.66	85.24	-4.25
Foreign government or nongovernmental organization	0.56	0.48	20.74
Other, unspecified	0.21	0.16	32.59
Faith-based organization	0.60	0.38	40.37

Source: Calculations by the UNCTAD secretariat based on Kenya's 2009 Population and Housing Census, available via the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center, 2015).
Note: The gender gap is calculated by dividing the difference between male and female employment by male employment.

Table 4. Sector of employment within family holding by sex, 2009

	Males (per cent)	Females (per cent)
Agricultural activity	30.46	25.05
Non-agricultural activity	69.54	74.95

Source: Calculations by the UNCTAD secretariat based on Kenya's 2009 Population and Housing Census, available via the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center, 2015).

In the other sectors of the economy, the gender employment gap is high and significant, reaching its highest level in the private sector (45 per cent). In the public sector, gender equality is far from being reached, with a gender employment gap of 42 per cent. In the formal sector, women are mainly found in the care economy, but also in the "other services" sector. Based on statistics provided by the Kenyan National Bureau of Statistics and summarized in table 5, the education sector accounts for almost one-quarter of women working in the formal sector. Public administration is the second largest employer of women in the formal sector with 17.6 per cent of working women. The agricultural sector is the third largest employer of women involved in the formal sector.

As shown in table 6, women are under-represented in all manufacturing sectors, whether in production or non-production tasks.[2] Legally, there is no specific law prohibiting discrimination in the hiring process. On average, women represent 17 per cent of workers employed in production tasks in the manufacturing industry in Kenya. Yet, this share is higher for non-production tasks, where women constitute 30 per cent of workers. The employment gender gap is lowest for the retail sector, where women represent almost half of non-production workers. In terms of managerial positions, 40 per cent of firms surveyed have a woman among the owners.[3] The highest proportion of firms with at least one woman among owners is found in the food and paper sectors.

Table 5. Sectoral distribution of formal sector employment by sex, 2013

	Female share in total employment (per cent)	Share of total female employment (per cent)
Education	46.4	23.1
Agriculture, forestry, and fishing	33.8	12.0
Public administration and compulsory social security	73.2	17.6
Activities of households as employers; undifferentiated goods and services-producing activities of households for own use	64.0	7.6
Human health and social work activities	57.0	7.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	25.2	5.9
Manufacturing	18.4	5.6
Information and communication	37.5	4.0
Financial and insurance activities	40.1	2.9
Accommodation and food service activities	32.9	2.6
Construction	33.3	4.7
Transportation and storage	26.9	2.3
Professional, scientific, and technical activities	30.3	2.1
Other service activities	39.0	1.3
Electricity, gas, steam, and air conditioning supply	27.5	0.4
Water supply; sewerage, waste management and remediation activities	23.1	0.3
Arts, entertainment, and recreation	31.3	0.2
Mining and quarrying	15.5	0.2
Real estate activities	25.6	0.1
Administrative and support service activities	12.2	0.1
Activities of extraterritorial organizations and bodies	27.3	0.0

Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.

Table 6. Share of women workers and owners by industry, 2013

Industry sector	Per cent share of women among permanent workers			Per cent share of firms with at least one woman among owners
	Production tasks	Non-production tasks	Total	
Food	23.68	26.85	55.30	58.9
Textiles	29.96	31.6	12.52	44.44
Garments	30.3	35.88	9.06	38.46
Leather	29.86	19.5	0.75	25.0
Wood	7.5	26.88	0.08	50.0
Paper	14.05	35.1	0.80	62.5
Publishing, printing, and recorded media	24.66	34.05	0.72	33.33
Chemicals	20.86	40.44	5.95	41.18
Plastics, rubber	10.17	30.02	1.37	23.81
Non-metallic mineral products	17.18	17.96	1.82	45.0
Basic metals	13.05	33.59	1.21	22.22
Fabricated metal products	4.26	26.68	1.05	30.43
Machinery and equipment	6.31	31.74	0.72	33.33
Electronics	21.23	24.44	0.93	42.86
Transport machines	10.61	18.92	2.63	18.75
Furniture	21.28	28.65	3.51	42.86
Recycling	18.52	33.33	0.42	–
Wholesale	18.75	33.97	0.13	50.0
Retail	19.6	47.22	0.86	44.79
Hotels and restaurants	3.13	29.14	0.17	42.03

Source: World Bank Enterprise Survey, 2014.
Note: The classification of the industry sector is based on ISIC rev. 3.1 code. The total sample is comprised of 781 representative Kenyan firms in 2013 that were selected using stratified random sampling. 369 firms reported the information regarding the production and non-production tasks.

3.4. GENDER INEQUALITIES IN EARNINGS

Table 7 reports average annual income by gender as estimated by the World Economic Forum. Based on these figures, the gender wage gap is 34.7 per cent, which is how much higher men's pay is than women's pay. The gender wage gap is calculated as the ratio of the difference between male and female earnings over male earnings. It is important to note, however, that this raw gender gap should be interpreted with caution, as other factors such as education, experience, and age group are not taken into account in the calculation. For this reason, the raw gender gap does not reveal pure discrimination. Nonetheless, because in many countries there are institutional barriers that prevent women from accessing higher education, this raw gender gap remains a useful measure of gender wage inequalities.

The World Economic Forum's Executive Opinion Survey (WEF, 2016), which surveys executive leaders, reports a qualitative indicator of wage equality for similar work that is estimated to be 0.65 (the unity reflecting parity). This indicates a perception among executives of the existence of gender discrimination in the workplace.

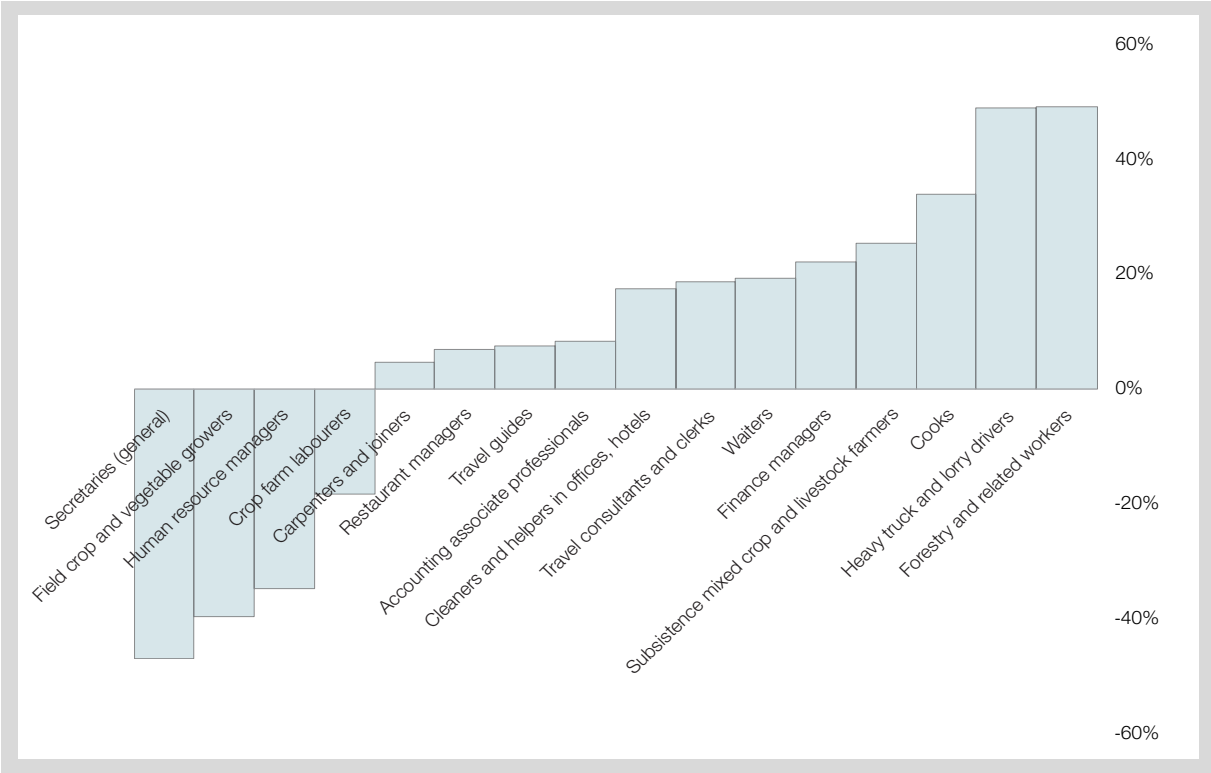
In terms of wages, it is difficult to measure inequalities at a more disaggregated level between men and women, as data are scarce and often not comprehensive enough to draw meaningful conclusions. A notable exception is the recent survey by Tijdens and Wanbugu

Table 7. Estimated annual earned income and gender income gap

Male	Female	Gender wage gap	Wage equality for similar work indicator
PPP US $ 3,574	PPP US $2,334	34.7%	0.65

Source: World Economic Forum (2016).
Note: The wage equality for similar work indicator is computed from the response to the survey question, "In your country, for similar work, to what extent are wages for women equal to those of men?" (1 = not at all — significantly below those of men; 7 = fully — equal to those of men). The data are then converted to a female-over-male ratio ranging between 0 and 1. PPP: purchasing power parity.

Figure 5. Gender wage gap across a selected sample of occupations, 2012



Source: Calculations by UNCTAD secretariat based on Tijdens and Wanbugu (2012).
Note: The gender wage gap should be interpreted with caution, as it is calculated based on the average hourly wage within each occupation group without taking into account the differences in terms of education, experience, age, etc. between men and women.

(2012). The authors conducted a face-to-face survey of the labour force in Kenya in February 2012 that aims to measure the wages and salaries earned by Kenyan workers, including the self-employed. This survey draws a random sample of individuals in a predefined set of occupations that includes skilled and unskilled occupations in all industries.[4] In total, 1,515 persons were interviewed.

Based on the data reported in figure 5, most occupations face a significant difference in terms of earnings in favour of men. For instance, male cooks earn 34 per cent more than female ones. The difference is also important for finance managers, among whom men earn 22 per cent more than women. It is also interesting to note that in the occupations considered as being more "feminine," such as secretaries or vegetable growers, the earning difference is in favour of women. Female secretaries earn 48 per cent more than their male counterparts. The information provided through these figures provides an important indicator, although a more thorough statistical analysis should

be undertaken in order to draw conclusions about the significance of the gender wage gap, particularly when differences in education level and experiences are taken into account.

NOTES

[1] Rotating savings and credit associations, often referred as merry-go-rounds, consist of shared saving pools called “pots” to which each member of a group contributes. At the end of each contributing period, the pot money is given to a single member of the group, using a rotation system.

[2] Based on the classification used in the framework of the World Bank’s Enterprise Survey, “non-production” refers to workers who are not engaged in production operations. It includes managers and other supervisory personnel with responsibilities for the performance of shop floor supervisors and below; employees in sales, sales delivery, janitorial and guard services, advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, and personnel; employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations and who are utilized as a separate work force; and professional and technical employees.

[3] The sample of firms used in this survey is a representative picture of Kenyan firms, as the firms have been selected using stratified random sampling in order to cover every region, firm size, and economic sector.

[4] Regarding the sampling of the individuals in the survey, Tijdens and Wanbugu (2012, p.2) write: “The survey covered all districts in the country. The target number of respondents (1,500) was distributed across the 61 districts. At the district level, the quota was distributed across the broad occupational categories. Respondents were then randomly selected by specially trained supervisors and interviewers to ensure every occupation was represented. The survey used the clusters used by the Kenyan National Statistics Bureau in Kenya. The sampling strategy included both workers in the formal and in the informal sector, including workers in the agricultural sector.”

4. OVERVIEW OF KENYA'S ECONOMY AND TRADE FLOWS

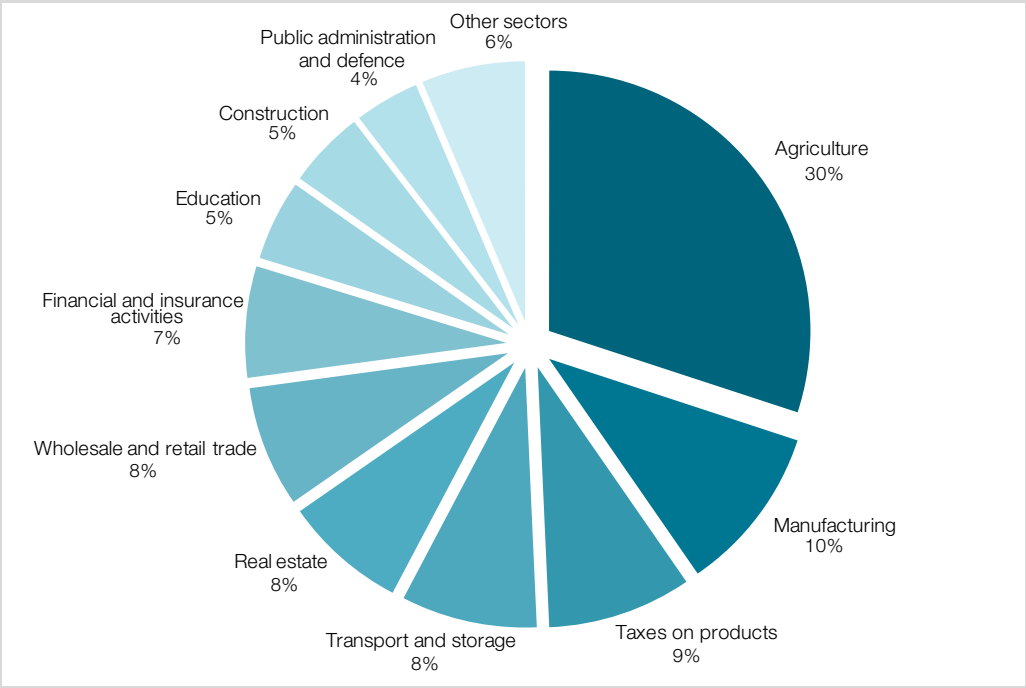
This section provides an overview of the Kenyan economy and its trade relationship with the rest of the world, first through the contribution of the different economic sectors to GDP, second through an overview of the country's import and export flows, and finally through the identification of its main trading partners.

4.1. CONTRIBUTION OF ECONOMIC SECTORS TO GDP

The distribution of the contribution of each economic sector to the overall Kenyan economy is summarized in figure 6. Although the contribution of the economic sectors to GDP does not necessarily coincide with employment opportunities, it is an important indicator of the orientation of the Kenyan economy and is relevant for understanding the consequences of the trade reforms. Based on the sector categorization used by the Kenyan National Bureau of Statistics, agricultural activities represented 30 per cent of GDP in 2014, of which 22 per cent originated from the growing of crops (tea, horticultural products, sugarcane, coffee, etc.) and 5 per cent from livestock production. Adding together the different services-oriented sectors (transport and storage, real estate, wholesale and retail trade, financial and insurance activities, and education), it can be seen that services made a large contribution to the country's economy (above 30 per cent), confirming that Kenya is increasingly becoming a services-oriented economy.

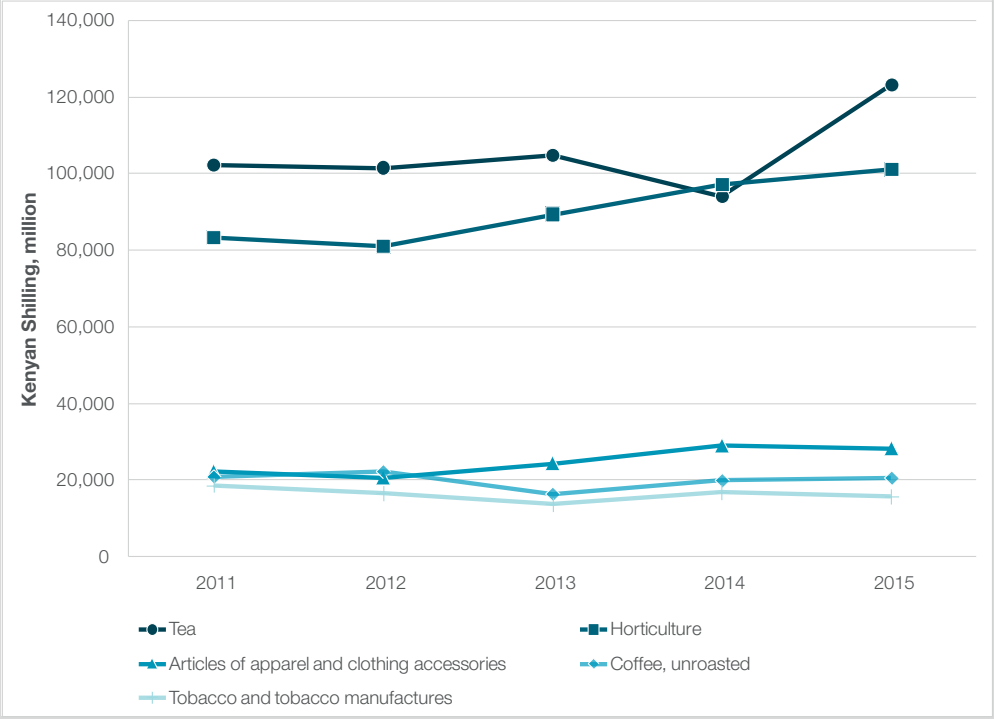
The third most important sector in terms of contribution to the economy is manufacturing, which represented 10 per cent of Kenyan GDP in 2015. Manufacturing production in Kenya is intrinsically linked with the agricultural sector, as around 40 per cent of output consists of processing food, beverages, and tobacco items. Chemicals and petroleum products represent around 20 per cent of manufacturing output, while textiles and clothing account for 5 per cent (World Bank, 2013). Fiscal revenues from taxes on products

Figure 6. Contribution of the different economic sectors to GDP, 2015



Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.
Note: The category "other sectors" represents all the sectors for which the individual contribution to GDP is below 2 per cent. GDP is defined in current prices. The value of "taxes on products" is added to the value of "all economic activities" to calculate GDP in current prices.

Figure 7. Top five exported commodities in terms of value, 2011–2015



Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.

Table 8. Top 10 exported commodities, 2011–2015

Industry sector	In terms of value (millions of Kenyan shillings)					Per cent share of total exports				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Tea	102,236	101,441	104,648	93,996	123,025	21.10	21.15	22.96	20.41	24.62
Horticulture	83,331	81,129	89,339	97,105	100,963	17.20	16.91	19.61	21.08	20.20
Articles of apparel and clothing accessories	22,260	20,676	24,379	28,948	28,226	4.59	4.31	5.35	6.29	5.65
Coffee, unroasted	20,863	22,271	16,328	19,913	20,580	4.31	4.64	3.58	4.32	4.12
Tobacco and tobacco manufactures	18,633	16,615	13,709	16,827	15,757	3.85	3.46	3.01	3.65	3.15
Iron and steel	18,165	15,098	15,560	13,443	12,290	3.75	3.15	3.41	2.92	2.46
Medicinal and pharmaceutical products	7,446	8,699	7,068	8,296	11,199	1.54	1.81	1.55	1.80	2.24
Essential oils	13,822	13,623	11,172	10,854	9,822	2.85	2.84	2.45	2.36	1.97
Titanium ores and concentrates				7,282	9,420				1.58	1.89
Cement	8,898	8,118	8,292	7,541	7,721	1.84	1.69	1.82	1.64	1.55

Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.

corresponded to 9 per cent of Kenya's GDP in 2014. The most important sources of fiscal revenues for the 2013–2014 fiscal year were income, profit, and capital gains taxes (KSh 459.3 billion), value-added taxes (KSh 236.5 billion), and taxes on other goods and services (KSh 159.4) billion (KNBS, 2014).

4.2. STYLIZED FACTS ON EXPORT FLOWS

Consistent with its production structure, Kenya predominantly exports agricultural products, which represented 45 per cent of its total exports in 2015.[5] Figure 7 depicts the evolution in terms of value of the top five exported commodities between 2011 and 2015.

Kenya is the world's third largest tea producer, and tea is the country's number one exported commodity (with the exception of 2014, when there was reduced production). The second most exported item, horticulture, includes exports of cut flower and fresh fruits and vegetables. Well behind, apparel, coffee, and tobacco were also among the top five exported commodities over the period. Apparel and clothing exports increased considerably due to increased investment and hiring under the United States African Growth and Opportunity Act aimed at increasing exports, essentially apparel, from selected African countries.

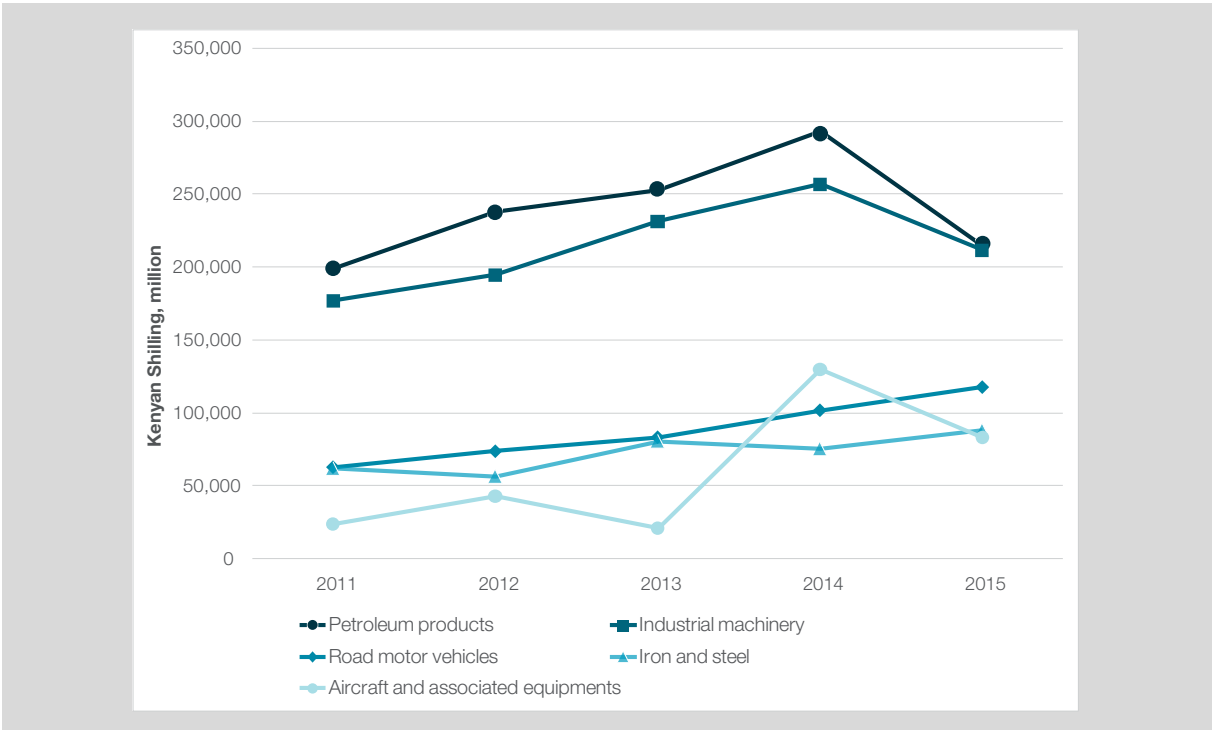
In terms of non-agricultural exports, the medicinal and pharmaceutical sector is also growing fast, as shown in table 8, reflecting the strong position of Kenya in this segment, especially with regard to the regional EAC market.

4.3. STYLIZED FACTS ON IMPORT FLOWS

On the import side, the ranking of commodities in terms of value indicates the importance of industrial products (figure 8 and table 9).

Petroleum accounts for the largest share of imports. Industrial machinery is the second most important commodity imported in the country, and the three following most-imported commodities are all related to industrial machinery: road motor vehicles, aircraft and associated equipment, and iron and steel. The increase in the value of imports of these commodities can be related to the growth of construction activities, particularly road and railway line infrastructure.

Figure 8. Top five imported commodities in terms of value, 2011–2015



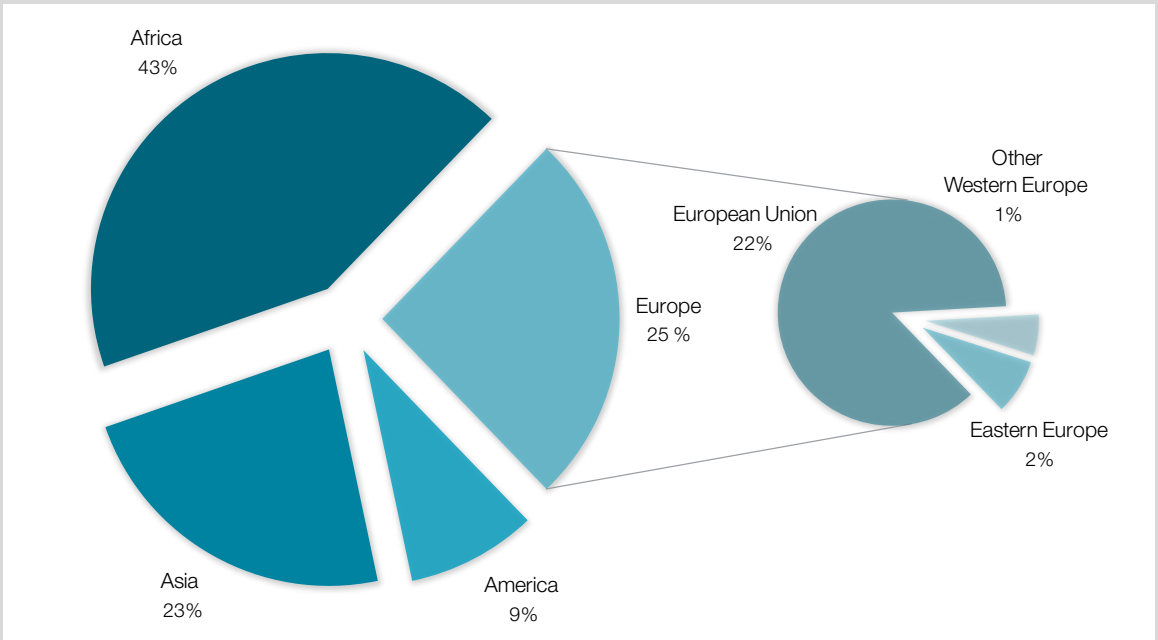
Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.

Table 9. Top 10 imported commodities, 2011–2015

Industry sector	In terms of value (millions of Kenyan shillings)					Percent share of total imports				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Petroleum products	199,120	237,557	252,673	292,643	214,695	15.31	17.28	17.88	18.08	13.61
Industrial machinery	177,174	194,666	231,440	256,672	211,724	13.62	14.16	16.38	15.86	13.42
Road motor vehicles	62,870	73,768	83,330	101,792	117,637	4.83	5.37	5.90	6.29	7.46
Iron and steel	62,087	56,667	80,749	75,526	88,153	4.77	4.12	5.71	4.67	5.59
Aircraft and associated equipment	23,970	43,105	21,308	129,589	83,094	1.84	3.14	1.51	8.01	5.27
Plastics	49,296	47,650	55,182	60,217	62,724	3.79	3.47	3.90	3.72	3.98
Medicinal and pharmaceutical products	39,681	41,307	40,114	52,088	61,513	3.05	3.01	2.84	3.22	3.90
Animal/Vegetable fats and oils	56,733	54,876	48,371	50,044	47,038	4.36	3.99	3.42	3.09	2.98
Wheat, unmilled	31,371	29,743	30,189	33,831	35,663	2.41	2.16	2.14	2.09	2.26
Paper and paperboard	31,464	30,377	26,864	29,948	29,316	2.42	2.21	1.90	1.85	1.86

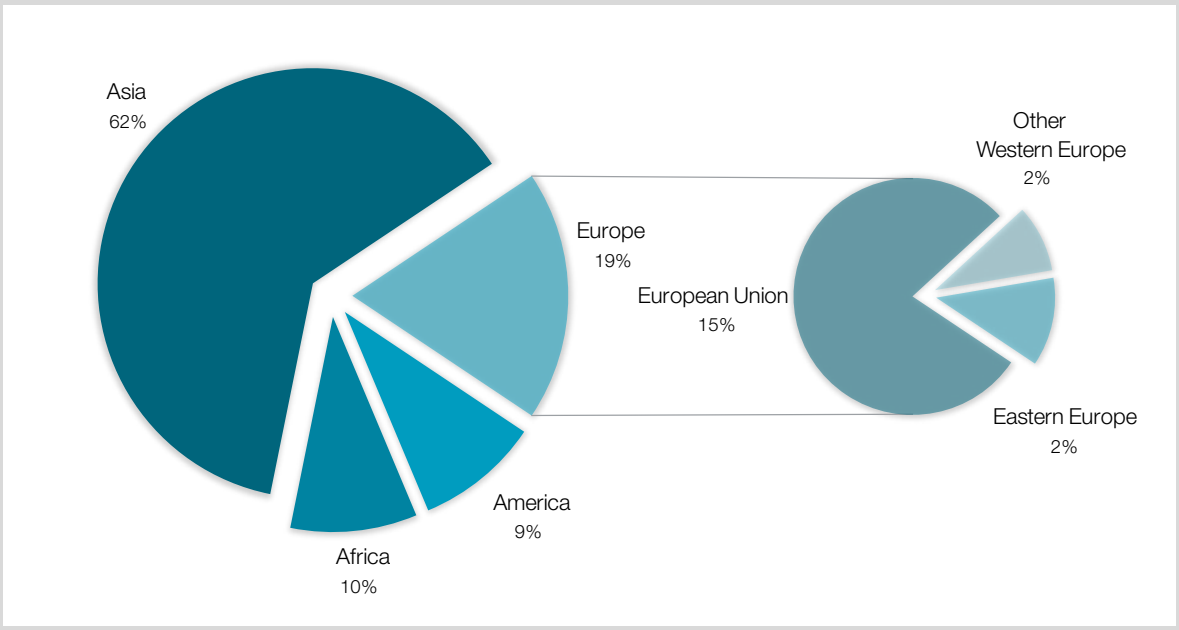
Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.

Figure 9. Distribution of exports by region of destination, 2015



Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.

Figure 10. Distribution of imports by region of origin, 2015



Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.

4.4. STYLIZED FACTS ON TRADE PARTNERS

Kenya preponderantly exports to its neighbours. In 2015, African countries represented 43 per cent of total Kenyan exports (figure 9), half of which (22 per cent) is accounted for by the EAC countries. Uganda is the top destination among EAC members, accounting for 54 per cent of the value of Kenya's exports to the EAC, followed by the United Republic of Tanzania (27 per cent) and Rwanda (14 per cent). Kenya is a trade hub for the EAC and is the leading intra-regional trader in Africa, with the highest share of the region's total trade (George, 2013).

The second most important region in terms of destinations of Kenyan exports is Europe, which accounts for a quarter of the country's total exports. The European Union is the most important partner in Europe, and its share in total exports is similar to that of the EAC countries. Five of the European Union's 28 member states account for around 85 per cent of total Kenya's exports to the European Union: the Netherlands, United Kingdom of Great Britain and Northern Ireland, Germany, Belgium, and Italy. The exported products consist predominantly of flowers, horticulture, and traditional exports such as coffee and tea. Kenya's national trade policy documents highlight the opportunity the EPA represents to exploit market potential in the 28 European Union member states beyond the traditional destination markets, based on the flexible rules of origin negotiated under that agreement (Republic of Kenya, 2015).[6]

On the import side, Asia is Kenya's leading partner, accounting for 62 per cent of total trade flows (figure 10). China and India represent an overwhelming share of total Kenyan imports. Europe is the second most important geographical group in terms of imports, with a share reaching 19 per cent, of which 15 per cent can be attributed to the European Union.

NOTES

[5] This calculation includes non-processed food, beverages, and industrial supplies.

[6] This will be further discussed in Section 5.

5. ANALYSIS OF THE IMPACT OF THE EPA ON THE KENYAN ECONOMY

5.1. THE ECONOMIC PARTNERSHIP AGREEMENT WITH THE EUROPEAN UNION

5.1.1. The context of the EPA

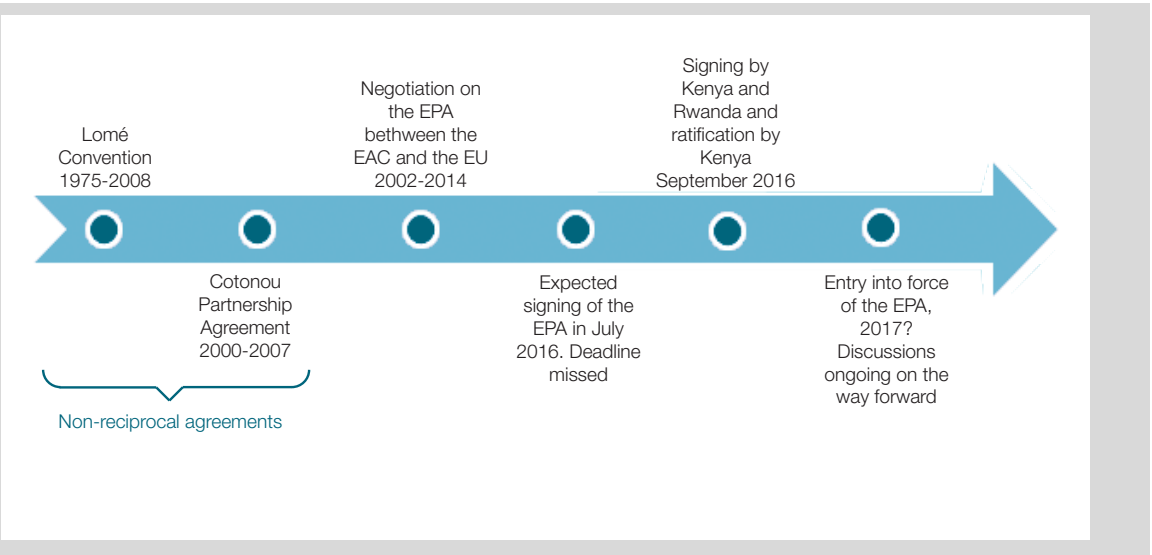
Trade arrangements between Kenya and European countries can be traced back to the Lomé Convention signed with 70 other developing countries in 1975 (figure 11). This agreement provided non-reciprocal trade preferences for goods originating from African, Caribbean and Pacific (ACP) countries and exported to the European market. Almost all exports (97 per cent) from ACP countries to European territories benefitted from duty-free preferential access (JHC, 2015). When the fourth Lomé Convention expired in 2000, ACP and European Union countries committed to negotiate an agreement that would involve reciprocity. The two parties entered into the Cotonou Agreement committing to achieve an EPA that would involve reciprocated duty-free access as of 2008. In the meantime, the EAC as a whole was granted temporary duty-free access to the European Union market from 1 January 2008 until 30 September 2014. Upon expiration of that access, the four LDC member states of the EAC continued duty-free access under the EBA scheme. Not being classified as a LDC, Kenya had to face duties imposed by the European Union until it was again given duty-free access to the European Union market in December 2014 through the Market Access Regulation scheme.[7]

On 16 October 2014, the EPA negotiations between the EAC and the European Union were finalized, with a scheduled signing of the EPA set for 18 July 2016, although that signing was then postponed.[8]

As of June 2017, only Kenya had signed and ratified the EPA, while Rwanda had signed but not ratified it.[9] Citing negative repercussions on its industrialisation strategy, the United Republic of Tanzania decided not to sign the agreement.[10] The president of Uganda eventually decided not to conclude the agreement and Burundi did not conclude it either because of the European Union sanctions.[11] In light of these events, the future of the EPA remains unclear.

In the event that the EAC as a whole and the European Union do not manage to reach an agreement on the EPA, Kenya will lose its preferential access to the European Union market and fall under the GSP granted to developing countries by the European Union. According to the General Agreement on Tariffs and Trade (GATT), the GSP does not require reciprocity.[12]

Figure 11. Chronology of trade agreements between the EAC and the European Union



Source: UNCTAD secretariat.
Note: EAC: East African Community; EPA: Economic Partnership Agreement, EU: European Union.

5.1.2. Content of the EPA

According to the consolidated text of the EPA between the EAC and the European Union, the trade relationships between the two parties should be subject to the following provisions (Kenyan Ministry of Industry, Trade, and Cooperatives, 2016):

1. Immediate duty-free, quota-free access to the European Union market for all EAC exports
2. Partial and gradual ("asymmetric") opening of the EAC market to imports from the European Union, and liberalization of 82.6 per cent of EAC import volume from the European Union
3. Ban on discriminatory restrictions on trade flows in order to eliminate non-tariff barriers
4. Safeguard measures: the parties may be allowed to reintroduce duties if import flows disrupt the economy
5. More favourable rules of origin through:
    a. Redefinition of the processing operations sufficient to confer the status of originating products[13]
    b. The inclusion of the cumulation of origin as a derogation in order to adapt to the growing importance of global value chains[14]
6. A customs-related provision.

While the first provision implies no changes to the current situation, as Kenya has already had duty-free access to the European Union market (except for arms) since December 2014, the second provision involves modifications in current trade flows between Kenya and the European Union. According to the agreement, the EAC has committed to liberalize the equivalent of 82.6 per cent of the value of imported products from the European Union. The liberalization process should take place within 25 years from the moment the EPA enters into force (table 10).

The EAC also negotiated an exclusion list essentially composed of agricultural products that account for 17.4 per cent of total trade value. This list is composed of the products deemed as sensitive by the EAC and concerns 1,432 tariff lines (around 26 per cent of traded tariff lines). Criteria for incorporating goods into this list vary, ranging from contribution to rural development, employment, livelihood sustainability, promotion of food security, fostering infant industries, and contribution to government revenues. Products subsidized by the European Union are also integrated into this list (KHRC, 2015).[15]

5.2. DESCRIPTION OF THE METHODOLOGY

5.2.1. The GTAP-CGE model

In order to analyse the effects of the EPA, in particular the tariff reduction on European Union exports to Kenya, this study uses a Computational General Equilibrium (CGE) model. Specifically, we make use of the Global Trade Analysis Project (GTAP) based on a static, multi-country, multi-sector CGE model.

The GTAP CGE model is a comprehensive world model of transaction and trade flows. Such models are used to simulate the consequences of an external event or shock, such as a reduction in tariffs, on macroeconomic variables (such as income, price, and employment) taking into account the complex

Table 10. Liberalization schedule for EAC imports from the European Union under the EPA

Year	Value in U.S. dollars, liberalized	Per cent of trade flows	Number of tariff lines
T_0	1,590,623,926	64.4	1,934
T_0 + 15	377,967,173	15.3	1,082
T_0 + 25	71,339,692	2.9	990
Total trade liberalized	2,039,930,791	82.6	4,006
Excluded trade	430,094,737	17.4	1,432
Total EAC imports from the European Union	2,470,025,528	100	5,438

Source: Calculations by the UNCTAD secretariat based on the EAC-European Union Economic Partnership Agreement consolidated text, 2016.
Note: T_0 refers to the first year of implementation of the Economic Partnership Agreement (EPA). EAC: East African Community.

interactions between the different agents within the economy. The GTAP model allows for differentiating the impact of the simulated shocks across the economic agents, namely consumers, producers, and the government, and also its trading partners. This model consists of two main components: (i) the model representing the functioning of the economy through a system of equations; and (ii) economic data in the form of a social accounting matrix that describes all the transactions and transfers taking place between the agents of the economy under consideration. The methodological appendix (Section 7) provides a more detailed description of the CGE methodology.

5.2.2. Adapting the GTAP framework to the analysis of the EPA

The GTAP-CGE workhorse model requires some modification to adapt it to the many specificities of the EPA between the EAC and the European Union. This sub-section discusses the different issues arising for the specific case of the EPA with Kenya, namely the choice of the baseline scenario, the non-tariff dimensions of the agreement, and the liberalization schedule.

Choice of the baseline scenario

One key issue in assessing the impact of the EPA with the European Union is the question of the counterfactual scenario used as a reference for interpreting the consequences of the EPA. Except for Kenya, the other EAC member states (the United Republic of Tanzania, Uganda, Rwanda, Burundi, and South Sudan) are all classified as LDCs. As such, even without the EPA, these countries would retain tariff-free access to the European market under the EBA scheme.

This does not hold for Kenya and raises the following question: which baseline scenario should be chosen to estimate the effect of the EPA? There are two main options: duty-free access (temporarily granted to Kenya during the negotiations) or the scenario in which no EPA is signed and the GSP comes into effect. The choice of one or the other baseline scenarios determines the question being answered. If the baseline scenario is the current duty-free access arrangement (under the Market Access Regulation scheme), then the results of the estimation will inform about the effect of the EPA compared to the current situation. In contrast, taking the GSP as the baseline scenario, will inform about the effect of the EPA compared to the hypothetical situation in which no EPA is signed. The continuation of the Market Access Regulation scheme, however, does not seem to be a realistic scenario, since it provides duty-free access as long as the EPA negotiations are ongoing and would likely be terminated if the negotiations fail. The GSP seems to be a more realistic scenario, and therefore it is used as the reference scenario to answer the question: *what would be the economic impact of the EPA compared to the situation in which no EPA is signed*?

Although in the presentation of the results the emphasis is put on the GSP baseline scenario for the reasons mentioned above, both scenarios are considered in the next sub-section.

Non-tariff trade-related dimensions of the agreement

The agreement deals with many different trade-related issues other than tariff removal that cannot be modelled in this study. The possible activation of safeguard measures to protect domestic production is difficult to estimate, as there is no sufficient information on the modalities of implementation of such measures (products, type of measures, etc.). The objective of removing existing non-tariff barriers is another challenging issue, as the extent of this elimination remains relatively vague and some studies have highlighted the difficulty of integrating non-tariff measures in CGE analysis and the high risks of obtaining spurious results (Fugazza and Maur, 2008). For these reasons, our analysis does not integrate the non-tariff barriers.

Liberalization schedule

The EPA with the European Union includes a phase-in schedule for the gradual elimination of the tariffs. The EAC member states gain immediate duty-free access to all of the European Union market. Conversely, the EAC is liberalizing 82.6 per cent of imports from the European Union (by value). Of this 82.6 per cent, half is already duty-free, and the remainder will be gradually made so over a period of 15 years. A final 2.9 per cent of goods by value will only be duty-free within a 25-year period.

Due to the nature of the GTAP model, and more generally CGE models, the steady-state of the model is invariant to the phase-in schedule. That is to say, a phase-in schedule could be implemented in the GTAP model, but it will not affect the outcome. In order to avoid additional complexity, the model assumes immediate liberalization to facilitate the interpretation of the results.

5.3. RESULTS OF THE ESTIMATION

5.3.1. Estimated impact of the EPA on GDP

Table 11 summarizes the results of the estimation of the impact of implementation of the EPA for the main macroeconomic indicators for European Union countries (EU 28) as a whole and for Kenya.

Based on the CGE estimation, the impact of implementation of the EPA compared to the GSP scenario is positive on Kenyan GDP and export and household income, but to a small extent (0.02 per cent or less). Indeed, Kenyan GDP is expected to rise by 0.001 percent while European GDP by even less, with a 0.00001 percent increase. Conversely, taking the pre-EPA situation as the baseline scenario yields a negative impact of the EPA on Kenyan GDP, with an estimated 0.02 per cent decrease. This is explained by the fact that the EPA regime is less favourable than the current Market Access Regulation scheme, as it provides less protection for Kenyan producers. Household income is also positively affected by the EPA, but with a low magnitude of 0.02 per cent, regardless of which baseline scenario is used. Overall, the results of the CGE estimation indicate a net welfare benefit, implying that the benefits to consumers (lower prices of imported goods) and producers (increased export opportunities) altogether outweigh the losses faced by import-competing producers, reduced employment, and diminished tariff revenues.

5.3.2. Estimated impact on labour demand

This sub-section turns to the impact of the EPA on labour demand by sector, as it will allow for identifying the critical sectors for women's employment. Given the theoretical model underlying the GTAP model, simulating the impact of the EPA on labour demand requires assuming that labour demand is perfectly elastic, implying that individuals are fully mobile across sectors. Though this assumption is rather strong, it is acceptable if we interpret the results as effects on the long-run horizon in which individuals have time to adapt and transition to expanding sectors of the economy.

In order to be more precise in the interpretation of the results, since gender disaggregation was not available in the data, a distinction is made between skilled and unskilled labour based on the International Labour Organization (ILO) classification. The skilled-labour, or professional workers, category consists of managers and administrators, professionals, and para-professionals. The unskilled labour, or production workers, category consists of trade-persons, clerks, salespersons and personal service workers, plant and machine operators and drivers, labourers and related workers, and farm workers.

Figure 12 shows that, in comparison with the GSP scenario, the EPA negatively impacts the employment of both skilled and unskilled labour in most sectors. When compared with the current situation, the impact of the EPA on labour demand is more nuanced, with more sectors being positively impacted. In the following analysis, the focus is on the GSP baseline scenario, as the interest lies in the long-run effect of the EPA.[16] These results are also presented in detail in Section 7.4 of the methodological appendix.

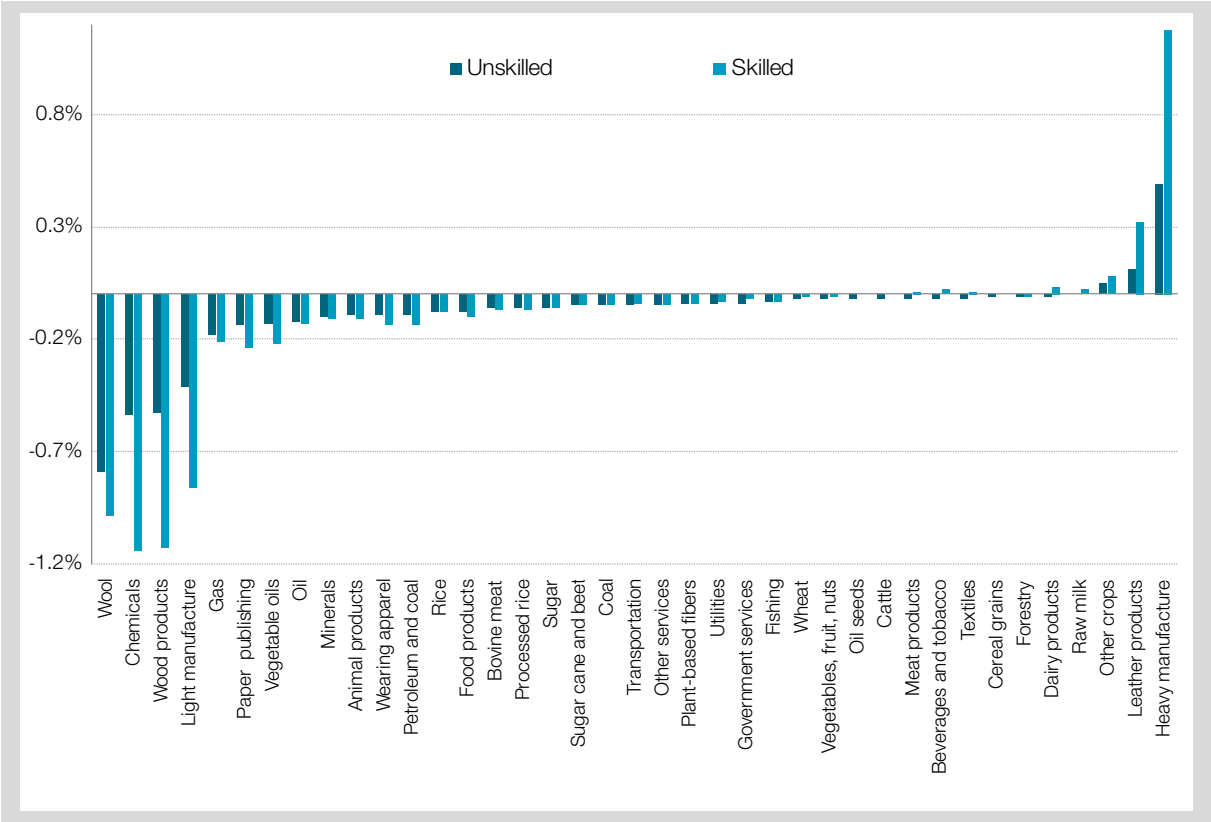
There are no significant differences between the expected variation in demand for skilled and unskilled labour across most sectors. It should be noted that in all sectors the expected impact on labour demand is small in magnitude, as the estimated variation is generally less than 1 per cent. The most negatively impacted labour force is in the chemical sector, where demand for skilled and unskilled labour is expected to decrease by 1.14 per cent and 0.54 per cent, respectively. Notable exceptions to the overall negative impact of the EPA on labour demand arise in the other crops, leather, and heavy manufacturing sectors, where both skilled and unskilled labour are expected to increase.

Table 11. Results of the estimated impact of the EPA: macroeconomic indicators (per cent change)

EPA versus:	Generalized System of Preferences		Current situation	
Economic variable	GDP	Household income	GDP	Household income
EU 28	0.00	0.00	0.00	0.00
Kenya	0.00	0.02	-0.02	0.02

Source: Calculations by the UNCTAD secretariat based on the estimation of the Global Trade Analysis Project – Computational General Equilibrium model.
Note: EPA: Economic Partnership Agreement.

Figure 12. Estimated impact of the EPA on labour demand across sectors, by skill group (per cent change)



Source: Calculations by the UNCTAD secretariat based on the estimation of the Global Trade Analysis Project – Computational General Equilibrium model.
Note: The figure summarizes the expected impact of the Economic Partnership Agreement (EPA) on labour demand across the different sectors with the Generalized System of Preferences scenario as the counterfactual.

Multiple transmission channels can explain the effect of the EPA on labour demand. First, the tariff liberalization induces more competition for local producers in Kenya, leading to a restructuring of firms and eventually to the eviction of the least profitable ones. As a consequence of this restructuring, trade openness can lead to a sectoral shift, (i.e. a reallocation of the production structures, with import-competing sectors declining and export-oriented sectors expanding). Second, the adoption of new imported technologies may lead to a change in production patterns and labour requirements, with more automated tasks, for instance. Third, the fact that certain sectors shrink due to stiffened competition may affect other sectors of the economy due to existing interdependencies across sectors, especially when a given sector produces the intermediate consumption required for the production taking place in another sector.

5.3.3. Identification of the most important sectors for female workers

This sub-section brings together the results of the previous sub-sections to identify the critical sectors for women that are likely to be affected by the trade reforms under the EPA. First, based on the statistics collected in Sections 3 and 4 of the toolbox, we identify the most important sectors in terms of female employment. Second, we relate these sectors with the results of the CGE estimation carried out in the previous section in order to underline the critical sectors for women.

As a first step, sectors are ranked based on the share of female workers in total employment. The ranking is restricted on the sectors that, according to the most recent data, account for at least 5 per cent of total female employment in Kenya. Seven sectors representing 80 per cent of the total female workforce in the formal sectors are identified in table 12. Three of

Table 12. Major sectors for female employment in the formal sector, 2015

Sector	Per cent share of female employment
Education	26.1
Agriculture, forestry, and fishing	12.4
Public administration and compulsory social security	15.5
Activities of households as employers	7.1
Human health and social work activities	7.0
Wholesale and retail trade	5.7
Manufacturing	5.3

Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.

Table 13. Export value of major agricultural commodities, 2013–2015 (millions of Kenyan shillings)

Commodity	2013	2014	2015	Corresponding GTAP sector
Tea	104,648	93,996	123,025	Other crops
Coffee	16,328	19,913	20,580	
Horticulture	89,339	97,105	100,963	
Tobacco and tobacco manufactures	13,709	16,827	15,757	Beverages and tobacco

Source: Kenyan National Bureau of Statistics, Economic Survey, 2016.
Note: GTAP: Global Trade Analysis Project.

Table 14. Major manufacturing sub-sectors for female employment, 2013 (per cent)

Share of female employment in	Production tasks	Non-production tasks	Corresponding GTAP sector
Food	57.77	45.71	Food products
Textiles	14.33	5.49	Textiles
Garments	10.76	2.43	Wearing apparel
Chemicals	3.63	14.95	Chemical, rubber, plastic
Furniture	3.48	3.60	Light manufacturing
Transport machines	2.53	3.02	Heavy manufacturing
Non-metallic mineral products	1.31	3.81	Heavy manufacturing
Plastics, rubber	0.80	3.57	Chemical, rubber, plastic

Source: Calculations by the UNCTAD secretariat based on the World Bank Enterprise Surveys, 2014.
Note: The figures reported refer to the share of female workers in total female employment in the manufacturing sector in Kenya in 2013. GTAP: Global Trade Analysis Project.

them are found in the public sector of the economy, namely education, public administration, and human health. Hence, the government is the largest formal employer for Kenyan women, with 49 per cent of the female workforce in 2015. An important cautionary remark should be made here, however. As these figures are available only for the formal sector, they likely overestimate the importance of the public sector in female participation in the labour market. The second most important employer in the formal sector is the agricultural sector, with 12.4 per cent, followed by own-account activities with 7.1 per cent, wholesale and retail trade with 5.7 per cent,[17] and manufacturing with 5.3 per cent.

To refine the identification of women's employment in the non-public sector, we rely on other sources. For the agricultural sector, comprehensive data on the division of labour across products are scarce. Yet, according to a joint report by the World Bank, FAO, and IFAD (2009) and various other sources,[18] "women's crops" per se hardly exist – that is, the work is segmented across tasks rather than across crops. More specifically, Kenyan women are reportedly responsible for hand digging, watering, weeding, harvesting, and crop transport, while men are responsible for building granaries. Therefore, the analysis that follows considers that the most important agricultural sub-sectors in the Kenyan economy are also the most important for female employment in the agricultural sector. The Kenyan Ministry of Agriculture identifies four main agricultural commodities for exports: tea, coffee, horticulture, and tobacco products (table 13).

The relevance of these sectors for women is confirmed by various sources highlighting the predominance of the female workforce in the production of tea, coffee, and flowers, with estimates suggesting that women constitute around 80 per cent of the total workforce in these sectors (Leipold and Morgante, 2013; Mwangi, 2009; International Labour Rights Fund, 2002).

For the manufacturing sector, the 2014 World Bank Enterprise Surveys provide reliable figures on the distribution of the female workforce across sub-sectors and occupation type. Table 14 shows the most important sub-sectors, with each accounting for at least 3 per cent of the total female workforce in the manufacturing sector. Women are preponderant in the food industry with 58 per cent (46 per cent) of the female production (non-production) workforce in the manufacturing sector. The second most important sub-sector is textiles and garments, where women are mostly found in menial occupations.

To summarize, female employment in Kenya is concentrated in the following sectors of the economy:

- Public sector (education, public administration, health-related services, etc.)
- Agriculture, with the main crops being tea, coffee, horticulture, and tobacco
- Wholesale and retail trade
- Manufacturing, of which the most important products are food, textiles, garments, and chemicals.

The main limitation of this identification exercise is the lack of comprehensive data for the labour force in the informal sector. An estimated 80 per cent of female workers are found in the informal sector, according to data collected in the most recent Population and Housing Census in Kenya (Minnesota

Table 15. Adjusted share of female workers (per cent)

Public sector	2.92
Agriculture, forestry and fishing	21.0
Tea	5.17
Horticulture	4.24
Coffee	0.87
Tobacco	0.66
Manufacturing	8.06
Food	4.46
Textiles	1.01
Garments	0.73
Chemicals	0.48
Furniture	0.31
Wholesale and retail trade	5.70

Sources: Kenyan National Bureau of Statistics, 2016; and Kenya's 2009 Population and Housing Census, available via the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center, 2015).
Note: These figures should be interpreted with caution, as they are an approximation of the relative share of female workers in the different sectors in total female employment based on two different sources.

Population Center, 2015).[19] According to the same survey, 25 per cent of this informal workforce is involved in agricultural activities, with the rest primarily involved in informal retail trade. According to Kiriti-Nganga (2015), this retail trade includes operating microenterprises such as hairdressing, selling used clothes, operating small grocery kiosks, or selling vegetables in open air markets; selling tea, chapatti, or mandazis (doughnuts) to workers at construction sites; and involvement in community, social, and personal services. In the analysis that follows, these estimates are used to compute the adjusted figures for female employment to account for the participation of women in the informal sector.[20] When adjusting the figures to take into account the informal sector, the identification of the most important sectors is similar, although the ranking differs. As shown in table 15, agricultural activities rank first, followed by wholesale and retail trade, manufacturing, and the public sector.

5.3.4. Mapping of the critical sectors for women workers after the EPA

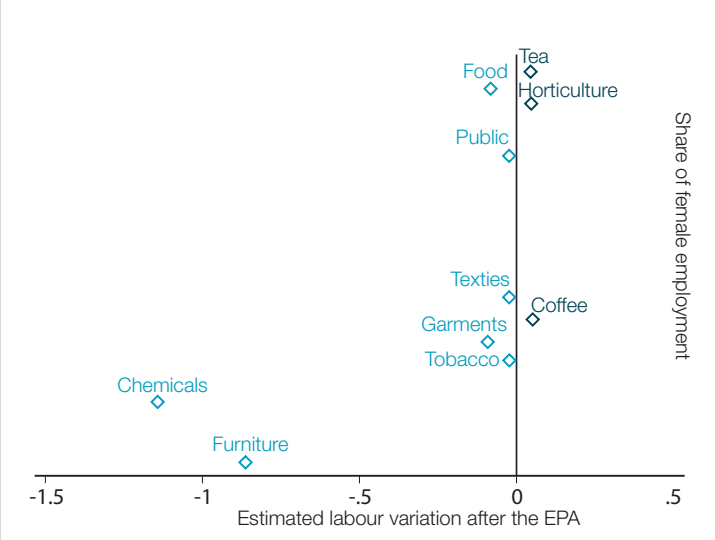
This sub-section focuses on the estimated impact of the EPA on the sectors that are most important for Kenyan female workers, as identified above. The corresponding results are synthetized in figure 13.

On the vertical axis of figure 13, sectors are ranked according to their importance for female labour force participation. Note that these figures are adjusted for the participation of women in informal agriculture (i.e. leading to an increased figure for women involved in agricultural production). The higher the sector on the vertical axis, the higher the proportion of the female workforce involved. The horizontal axis reports the estimated variation in labour demand following implementation of the EPA. For reading convenience, a vertical line is drawn at 0. Any observation located on the right (left) side of this vertical line implies a positive (negative) impact of the EPA on labour demand in that sector.

Based on figure 13, two key results stand out:

- The impact of the EPA on labour demand is uneven across sectors: for the selected agricultural crops it is positive, while it is negative for the all the other sectors.
- The estimated effects are small in magnitude, ranging between -0.54 and 0.05 per cent.

Figure 13. Identification of the critical sectors for female labour after implementation of the EPA



Source: Calculations by the UNCTAD secretariat based on the estimation of the Global Trade Analysis Project – Computational General Equilibrium (GTAP-CGE) model and on data provided by the Kenyan National Bureau of Statistics.
Note: The vertical axis refers to the number of women employed in the different sectors; the scale is not reported as it is represented in logarithmic form for reading convenience. The data about the labour force are from the Kenyan National Bureau of Statistics Economic Survey, 2016 and the data about the informal workforce are from Kenya's 2009 Population and Housing Census, available via the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center, 2015). The estimated variation in the labour force (represented on the horizontal axis) is obtained from the estimation of the GTAP-CGE model. EPA: Economic Partnership Agreement.

For the agricultural crops considered (tea, horticulture, and coffee), the average estimated effect on labour demand is marginally positive. Based on the CGE model, this is most likely driven by an increase in the output of this sector. The fact that no negative effect is found for these crops is likely due to their being included on the list of "sensitive products," and hence excluded from the liberalization schedule. However, it should be noted that the estimated effect is an average over these crops, as the model does not allow going further in the disaggregation. Following implementation of the EPA, labour demand is expected to shrink in the public sector, albeit slightly. This is the result of the reduction in public expenditure due to the decline in government revenues induced by removal of the tariffs faced by European partners. Regarding manufacturing products, the estimated impact of the EPA on unskilled labour demand is largely negative. Textiles and tobacco manufactures are the least negatively affected, while activities in chemicals and furniture are the most affected, though to a small extent, as the negative effects do not surpass -1.14 per cent. It should be noted that the chemicals and furniture sectors are not ranked among the most important sectors for trade as opposed to textiles and tobacco manufactures (see Section 4.2), and account for a small share of the female workforce (less than 12 per cent of the female workers involved in the manufacturing sector and less than 1 per cent of the total female workforce).

Overall, these results suggest that implementation of the EPA, compared to the GSP scenario, is likely to marginally affect Kenyan women in the workplace. Yet, the effects are on average negative for labour demand in the sectors that account for a significant share of the female workforce in the country. Therefore, measures should be taken to minimize the possible adverse effects on women after implementation of the EPA.

5.4. A CHECKLIST FOR GENDER-SENSITIVE ACCOMPANYING MEASURES

The objective of this sub-section is to equip policymakers with an analytical grid to examine the relevance of accompanying policies in achieving greater gender equality or reducing the risk of exacerbating gender disparities. Based on a review of the academic and institutional literature (Evers, 1999; Fontana, 2016; ILO/Commonwealth Secretariat, 2003; Ortiz and Cummins, 2013; UNCTAD, 2016b), the third component of the toolbox provides a checklist to complement the preceding quantification analysis. The checklist serves as a guide for policymakers who want to consider implementation of measures to offset the negative gender effects of trade reforms (when the estimates in the second component of the toolbox indicate that trade reforms have negative gender effects) or to support positive gender effects (when the estimates in the second component of the toolbox indicate that trade reforms have positive gender effects).

Table 16 provides a non-exhaustive overview of the dimensions that should be addressed when considering implementation of accompanying measures. The table focuses on three policy areas: export promotion policies, support to import-competing sectors, and other measures related to welfare.

The first item on the checklist in table 16, gender disparity in export promotion, relates to the consequences for women of implementing policies aimed at promoting exports. In the event that the EPA between the EAC and the European Union enters into force, this dimension might be of lower priority, as the agreement is expected (at the time of the negotiations) to leave the tariffs faced by EAC exporters to the European Union unchanged compared to the present situation (under the Market Access Regulation scheme).

The second item on the checklist, gender disparities in import-competing sectors, is more important, as an increase in cheaper imports originating from the European Union as a consequence of tariff reductions implies a tightening of competitive pressures in certain sectors of the economy that could lead the government to implement policies supporting domestic production or mitigation measures. In fact, the agreement provides the possibility to invoke safeguard measures if needed. These measures, applicable for a period up to 15 years after the EPA enters into force, are expected to protect countries from a surge in imports that would threaten or cause important damage to the domestic economy.

The third item on the checklist, gender disparities in welfare, relates to other accompanying policies that could affect welfare differently between men and women. Implementation of the EPA could also affect gender disparities through its consequences for public expenditures and taxation. In the event of considerable

Table 16. Checklist for gender-sensitive accompanying measures

Gender disparities in export promotion		
Export promotion policies and measures	Existence	Are men and women equally addressed by the policies?
	Relevance for women	Do the policies target small and microenterprises?
		Do the policies target the specific needs of women's activities?
		Do the policies provide appropriate training and skill upgrading?
	Accessibility	Are men and women equally informed?
		Is childcare support provided?
		Are men and women equally included in the policy decision process?
Gender disparities in import-competing sectors		
Domestic production-support measures	Existence	Are men and women equally addressed by the policies?
	Relevance for women	Do the policies target the sensitive sectors for the most vulnerable categories of workers?
		Do the policies provide appropriate training and skill upgrading?
	Accessibility	Are men and women equally informed?
		Are men and women equally included in the policy decision process?
Mitigation measures	Existence	Are men and women equally addressed by the policies?
	Relevance for women	Do the policies provide appropriate social safety nets?
		Do the policies provide other relevant measures (such as tax credits)?
	Accessibility	Are men and women equally informed?
Gender disparities in welfare		
Reduction in public expenditures (due to tariff revenue loss)	Evolution	Is a reduction in public social expenditures expected?
	Relevance for women	Are women more likely than men to be affected by these changes?
	Unpaid care work	Would a reduction contribute to increased care work for women? If yes, would there be policies offsetting this impact (e.g. higher taxes, etc.)?
Increase in taxation	Evolution	Is an increase in taxation expected?
	What type of taxation?	Income tax? Indirect taxes, such as the value-added tax?
	Relevance for women	Based on the taxation type, are women more likely to be affected by these changes?

Working conditions	Evolution	Any modification in labour market regulations? If so, are they less or more protective of workers' rights?
		Any modification in social benefits for workers?
	Relevance for women	Are women more likely to be affected by these changes?
	Unpaid care work	Would modifications in working conditions contribute to increasing care work for women?

Source: UNCTAD secretariat.

tariff revenue loss, the government may downscale public expenditures, as suggested in the CGE results. If the cuts preponderantly affect public expenditures in the social sector such as safety nets, old-age pensions, and health and education infrastructure, they would worsen gender disparities through a direct impact (impoverishment of public services) but also through a disproportionate indirect impact on women by increasing the burden of (unpaid) care work (Ortiz and Cummins, 2013).

In order to maintain its budget, the Kenyan government may envision the use of new tax instruments, such as domestic sales or value-added taxes, in order to mitigate the tariff losses. In this case, it is important to question which sectors and goods of the economy would be concerned and whether such tax instruments would affect men and women differently.

Lastly, in order to adapt to the changing trade environment and especially the stiffening of competition with foreign producers, national authorities may consider reforms in the labour market toward more flexibility in order to improve the efficiency of domestic production. However, these reforms may be implemented at the expense of workers' welfare (and women in particular). This was seen in the promotion of export processing zones, which was correlated either with the granting of exceptions in labour legislation or with weak enforcement of national labour laws in a number of countries (including Kenya) that eventually made women more vulnerable in the workplace (UNCTAD, 2016a). Table 16 suggests taking into consideration the possible consequences of changes in labour market regulations for women in order to prevent exacerbating existing gender inequalities.

Table 17. Sample of monitoring indicators

Women as…	Dimensions	Key issues	Indicators
Workers	Employment	Gender composition of labour	Number of men and women employed, by sector and occupation. Gender ratio by sector and occupation.
	Wage	Gender wage gap	Salary level by sector, occupation, and gender.
	Working conditions	Proportion of jobs that are permanent Hours worked Training Social coverage	Number or percentage of permanent jobs by gender, sector, occupation, and contract type. Number of hours worked, by gender. Firms' investment in training by gender, sector, and occupation. Number of workers with social coverage by gender and type of coverage.
Producers	Access to resources	Sufficient access for developing new export opportunities	Level of capital and land ownership by sector, firm, and gender of managers. Level of access by gender to financial services, market information, skill development programmes, and extension services.

Source: UNCTAD secretariat.

Table 18. Monitoring framework for gender inequalities in employment in Kenya, 2015

Economic sectors	Female (thousands)	Male (thousands)	Per cent of males	Per cent of females	Gender gap (per cent)
Education	240.2	267.9	47.3	26.1	10.34
Agriculture, forestry, and fishing	114.4	222.6	33.9	12.4	48.61
Public administration and compulsory social security	142.4	79.6	64.1	15.5	-78.89
Activities of households as employers; undifferentiated goods and services-producing	65.7	48.4	57.6	7.1	-35.74
Human health and social work activities	64.1	59.9	51.7	7.0	-7.01
Wholesale and retail trade; repair of motor vehicles and motorcycles	52.7	179.3	22.7	5.7	70.61
Manufacturing	49	246.4	16.6	5.3	80.11
Information and communication	35.7	69.9	33.8	3.9	48.93
Financial and insurance activities	26.4	46.3	36.3	2.9	42.98
Accommodation and food service activities	22.4	53.7	29.4	2.4	58.29
Construction	44.4	103.6	30.0	4.8	57.14
Transportation and storage	20.1	62.5	24.3	2.2	67.84
Professional, scientific, and technical activities	18.9	49.7	27.6	2.1	61.97
Other service activities	10.7	21	33.8	1.2	49.05
Electricity, gas, steam, and air conditioning supply	4.3	12.6	25.4	0.5	65.87
Water supply; sewerage, waste management and remediation activities	2.4	9.2	20.7	0.3	73.91
Arts, entertainment, and recreation	2	4.9	29.0	0.2	59.18
Mining and quarrying	2.2	12.2	15.3	0.2	81.97
Real estate activities	0.9	3.1	22.5	0.1	70.97
Administrative and support service activities	0.5	4.7	9.6	0.1	89.36
Activities of extraterritorial organizations and bodies	0.3	0.8	27.3	0.0	62.50
Total	919.7	1,558.3	31.4	100	40.98

Source: Calculation by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, 2016.
Note: These data are replicated from the data collected in Section 3.3 and should serve as the benchmark to construct the monitoring framework across periods. The figures exclusively concern the formal sector. The gender gap should be interpreted with caution, as it is calculated based on the average hourly wage within each occupation group without taking into account the differences in terms of education, experience, age, etc. between men and women.

5.5. MONITORING INDICATORS

In order to track the evolution of gender disparities over time and eventually relate it to implementation of trade reforms (and accompanying measures if they have been implemented), it is necessary to build a consistent monitoring framework. A monitoring framework is a tool that would help countries assess the evolution of gender inequalities before and after the trade reforms. As such, it would contribute to the development and implementation of strategies that adequately address the obstacles on the path to gender equality.

Table 17 proposes a sample of monitoring indicators applied to Kenya based on data availability. The indicators provided in tables 17-21 inform about the situation *prior* to implementation of the EPA. Once the trade reforms have been implemented, the indicators should be updated to make it possible to track and correlate the evolution in gender inequalities with the trade reforms.

As discussed in previous sections, gender inequality can take multiple forms, so it is crucial to take a variety of dimensions into account in the monitoring indicators. For instance, in the workplace, gender inequalities may surface through differences in wages or the composition of labour, but also in working conditions, such as the differences in the type of labour contract (for instance, are short-term contracts more prevalent for female workers than for men?).

Based on this framework, the tables in the sub-section that follows present the monitoring indicators that can be used to track the evolution of gender disparities in Kenya over time for the different dimensions that have been mentioned.

5.5.1. Monitoring indicators of gender inequalities in the workplace

Table 18 refers to the employment dimension, table 19 to wage inequalities, and table 20 to working conditions.

Table 18 highlights that women are under-represented in the workplace, as the gender gap is positive in all sectors with the notable exceptions of public administration, activities of households as employers, and health and social work activities.

Table 19 reveals that women tend to earn a lower wage than men in most occupations, as indicated

Table 19. Monitoring framework for gender inequalities in wages in Kenya, 2012

Occupation	Male wages (net hourly, Kenyan shillings)	Female wages (net hourly, Kenyan shillings)	Gender wage gap (per cent)
Finance managers	154.55	120.35	22.14
Human resource managers	72.69	98.06	-34.89
Restaurant managers	57.77	53.77	6.94
Accounting associate professionals	113.07	103.71	8.28
Secretaries (general)	41.94	61.69	-47.09
Travel consultants and clerks	51.41	41.82	18.66
Travel guides	54.85	50.80	7.38
Cooks	41.07	27.14	33.92
Waiters	26.38	21.30	19.24
Field crop and vegetable growers	25.89	36.15	-39.61
Forestry and related workers	64.66	32.87	49.17
Subsistence mixed crop and livestock	20.38	15.23	25.27
Carpenters and joiners	45.28	43.18	4.65
Car, taxi, and van drivers	40.96	n.a.	n.a
Heavy truck and lorry drivers	61.01	31.13	48.97
Cleaners and helpers in offices, hotels	40.41	33.37	17.41
Crop farm labourers	26.76	31.68	-18.38
Building construction labourers	28.48	90.08	-216.33

Source: Calculations by the UNCTAD secretariat based on Tijdens and Wanbugu (2012).
Note: The data were collected in Kenya from face-to-face interviews with a random sample of individuals within a predefined set of occupations. The data are replicated from the data collected in Section 3.3 and should serve as the benchmark to construct the monitoring framework across periods. The gender gap should be interpreted with caution, as it is calculated based on the average hourly wage within each occupation group, without taking into account the differences in terms of education, experience, age, etc. between men and women. n.a.: not applicable.

Table 20. Monitoring framework for gender inequalities in working conditions in Kenya (per cent)

	Female share	Male share	Gender gap
Hours worked per week (2009)*			
None	0.03	0.03	-4.5
1 to 14 hours	6.05	5	-12.2
15 to 29 hours	14.65	10.42	-30.3
30 to 39 hours	17.45	13.18	-22.7
40 to 48 hours	21.43	23.55	15.7
49 hours of more	27.86	36.71	29.6
Unknown	12.53	11.11	
Total	100	100	
Type of contract (2012)**			
Permanent	76.95	76.34	-0.8
Non-permanent	22.52	23.34	3.51
Bargaining coverage (2012)**			
Covered by collective agreement	40.28	30.71	-31.2
Member of a trade union	23.69	19.49	-21.6
Social coverage in the workplace (2012)**			
Participation in a health insurance scheme	27.35	25.13	-8.8
Participation in a pension scheme	18.65	19.83	6
Access to child-care arrangement	3.94	3.82	-3.1

*Source: Calculations by the UNCTAD secretariat based on the following: *Kenya's 2009 Population and Housing Census, available via the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center, 2015). The data are based on a representative sample of employed individuals; ** Tijdens and Wanbugu (2012), based on a representative sample of predefined occupations.*

Note: The gender gap here corresponds to the relative gender gap applied to the proportion of men and women for each of the dimensions considered. For the number of weekly work hours, the gender gap is calculated using the absolute number of men (women) (not the share). The gender gap should be interpreted with caution, as it does not take into account other factors such as age, experience, education, etc. that could explain the difference between the working hours of men and women.

by the positive (and often large) gender wage gap. Notable exceptions are human resource managers, secretaries, crop growers, and crop labourers. These occupations are, in fact, considered more female-oriented.[21]

As opposed to the previous dimensions considered, table 20 shows more nuance in the differences in working conditions between men and women in Kenya. For instance, among surveyed individuals, the proportion of women with permanent contracts is slightly higher than the proportion of men. Similarly, the proportion of women covered by a collective agreement or part of a trade union is significantly higher than the proportion of men. However, this could be explained by the fact that women are more likely found in sectors where trade unions are more prevalent (i.e. the textile industry).

5.5.2. Monitoring indicators of gender inequalities in access to resources

Table 21 reveals that women in Kenya, on average, have less access to resources (land, financial services, bank account) than men, although the computed gender gaps are not significantly large.

Table 21. Monitoring framework for gender inequalities in access to resources in Kenya (per cent)

	Female (per cent of persons 15+ years of age)	Male (per cent of persons 15+ years of age)	Gender gap (per cent)
Property or land			
Own property	7	30.2	0.77
Joint property	28.2	12.6	-1.24
Borrowed money…			
In the past year	78.27	80.23	0.02
From a financial institution	6.79	12.82	0.47
From a private informal lender	5.56	7.67	0.27
From family or friend	62.33	58.35	-0.07
From a store by buying on credit	19.65	16.45	-0.19
To start, operate, or expand a farm or business	21.12	27.82	0.24
Use of bank account...			
In a financial institution	51.94	58.92	0.12
In a financial institution for business purposes	9.12	16.09	0.43

Source: Calculations by the UNCTAD secretariat based on the World Bank Gender Statistics Database, 2016. The data are for 2014, the latest year available in the survey.
Note: The gender gap here corresponds to the relative gender gap applied to the proportion of men and women for each of the dimensions considered.

NOTES

[7] The Market Access Regulation scheme provides duty-free, quota-free market access to the European Union for those products originating in those ACP states that do not benefit from an EBA regime and have concluded EPAs with the European Union. European Union regulation 1528/2007 governs the European Union preferential market access regime for ACP countries that have negotiated EPAs with the European Union. See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:348:0001:0154:EN:PDF (accessed April 2017).

[8] See Bridges Africa, EAC-EU EPA signing postponed as deliberations continue, 22 July 2016, International Centre for Trade and Sustainable Development. Available at http://www.ictsd.org/bridges-news/bridges-africa/news/eac-eu-epa-signing-postponed-as-deliberations-continue (accessed April 2017).

[9] Kenya Ministry of Foreign Affairs press release, 28 September 2016. Available at http://www.mfa.go.ke/kenya-deposits-instruments-epas-ratification/ (accessed April 2017).

[10] See Bridges Africa, Tanzanian parliament advises government not to sign EPA with EU, 17 November 2016,

International Centre for Trade and Sustainable Development. Available at: http://www.ictsd.org/bridges-news/bridges-africa/news/tanzanian-parliament-advises-government-not-to-sign-epa-with-eu (accessed April 2017).

[11] Collins, Maui, East Africa: EPAs Deal - East African Community undecided as second deadline elapses, 3 February 2017, allAfrica. Available at: http://allafrica.com/stories/201702030130.html (accessed April 2017).

[12] The GSP provides a formal system of exemptions from the most favoured nation principle, thereby allowing World Trade Organization member countries to lower tariffs for a selected group of countries (like developing countries) without granting this advantage to other countries or requiring reciprocity.

[13] For instance, in the textile sector, a "single transformation" (such as spinning, weaving, or assembly) is sufficient to obtain the origin label for a product, in contrast with the previously enforced "double transformation rule" under which an operator would have to transform the yarn into a fabric and a fabric into clothing (European Commission, 2017).

[14] Standard rules of origins distinguish between products eligible for special treatment based on whether they have been "wholly obtained" or "substantially transformed" in a given country. Substantial transformation occurs when imported products turn into manufacturing goods with a new name, character, or use. With the cumulation of origin, a product can meet the requirements of substantial transformation in more than one country.

[15] The exclusion list includes the following products (non-exhaustive): live animals; meat and edible meat offal; fish and crustaceans, mollusks and other aquatic invertebrates; dairy produce; birds' eggs; natural honey; edible products of animal origin; live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage; edible vegetables and certain roots and tubers; edible fruit and nuts; peel of citrus fruits or melons; coffee, tea, maté and spices; cereals; products of the milling industry; malt; starches; vegetable plaiting materials; vegetable products; animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes; preparations of meat, of fish or of crustaceans, mollusks or other aquatic invertebrates; sugars and sugar confectionery; cocoa and cocoa preparations; preparations of cereals, flour, starch or milk; pastry cooks' products; preparations of vegetables, fruit, nuts or other parts of plants; miscellaneous edible preparations; beverages, spirits and vinegar; residues and waste from the food industries; prepared animal fodder; tobacco and manufactured tobacco substitutes; plastics and articles thereof; wood and articles of wood; cotton; man-made filaments; man-made staple fibres; footwear, gaiters and the like; parts of such articles; iron and steel; and articles of iron or steel (KHRC, 2015).

[16] As explained in the previous section, we want to know what would happen if the EPA were implemented compared to the hypothetical situation in which there is no EPA and the GSP comes into force.

[17] The CGE does not have a category corresponding to "wholesale and retail trade." Therefore, this sector cannot be directly estimated. The products traded by women, however, are most likely incorporated in the other sectors included in the analysis (Kiriti-Nganga, 2015).

[18] Carr (2008), Doss (2002), UNCTAD (2016b), and Wa Gĩthĩnji et al. (2014).

[19] The housing and population census was undertaken by the Kenyan Bureau of Economic Statistics and is based on a representative sample of working individuals.

[20] For this purpose, we rely on the data from the Population and Housing Census, available via the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center, 2015). These data provide the most relevant information about the distribution of the population across economic activities (formal and informal). More specifically, we use the figures about the share of active women involved in informal activities to adjust the shares obtained from the Kenyan National Bureau of Statistics. The detailed computation of these adjusted figures is provided in the Worksheet 2.

[21] In Kenya, women's participation in the building construction workforce is small; the gender wage gap for building construction labourers indicated in table 19 is based on a small sample and cannot be generalized.

6. TRADE AND GENDER INDEX

This section presents a Trade and Gender Index (TGI) that summarizes the evolution of gender inequalities and trade in a single indicator over time. More precisely, the index provides an indicator of gender inequalities in the workplace through the computation of a gender employment gap and a trade openness indicator that measures the extent to which the country opens to trade. This index is computed at the sectoral level, including only those sectors for which data are available and reliable; in the case of Kenya they are agriculture, forestry and fishing, and manufacturing.

6.1. DESCRIPTION OF THE INDEX

The TGI is computed as follows:

$$TGI_{s,t} = \frac{Gender\ Employment\ Gap_{s,t}}{Trade\ Openness_{s,t}}$$

where *s* refers to the sector and *t* to the year, and the numerator and denominator are calculated as follows:

$$Gender\ Employment\ Gap_{s,t} = \frac{Male_{s,t} - Female_{s,t}}{Male_{s,t}}$$

where $Male_{s,t}$ is the quantity of male labour in sector *s* in year *t*, and $Female_{s,t}$ is the quantity of female labour in sector *s* in year *t*. The choice to incorporate a gender employment gap as opposed to a gender wage gap is driven by data constraints, as wages, when available, are not differentiated by sector. However, the interpretation of the gender employment gap is similar to the (relative) gender wage gap indicator: any increase in the ratio implies a worsening in gender inequalities, as it is computed as the difference between male and female employment as a percentage of male participation. For instance, a gender employment gap of 40 per cent indicates that females are 40 per cent less present than men in this sector. Note that this indicator is referred to as a "raw" measure in the literature, as it does not elicit the determinants of the observed differences.

The denominator of the TGI, trade openness, is obtained as follows:

$$Trade\ Openness_{s,t} = \frac{X_{s,t} + M_{s,t}}{GDP_{s,t}}$$

where $X_{s,t}$ is the value of exports in sector *s* in year *t*; $M_{s,t}$ is the value of imports in sector *s* in year *t*; and $GDP_{s,t}$ is the gross domestic product in sector *s* in year *t*. This indicator measures the relative importance of international trade flows in the economy of the country. Put differently, it provides an indication of the extent to which the economy is open to trade. The more liberalized the country, the higher the value of the openness index.

It is important to note that changes in the TGI always need to be evaluated together with changes in the

Box 1. Cautionary remarks about the Trade and Gender Index

Important cautionary remarks need to be considered regarding the interpretation of the Trade and Gender Index:

- The index does not deliver the results of a causation analysis, i.e. it is not able to tell whether the worsening or the improvement of gender inequalities is caused by trade openness, as there exist many confounding factors. Rather, it informs about the simultaneous evolution of both dimensions.
- The index relies on the existence of sound and comprehensive data; therefore, it could be computed only for the formal sector of the economy.
- The index aims to be used for within-country analysis over time. Due to the difficulty of having comparable data and of identifying causal relationships, in most cases cross-country comparisons are not viable. In addition, no ranking across countries can be made based on this index.

gender employment gap and trade openness; either positive or negative changes in the TGI by themselves cannot be interpreted as a positive or negative outcome. For example, a decrease in the TGI may be due to an increase in trade openness together with a decrease in the gender employment gap (which is a desirable scenario), but it may also be due to an increase in trade openness together with a worsening of the gender employment gap by a smaller magnitude (which is clearly a non-desirable case). In order to use the TGI for policy purposes, therefore, both the signs and the values of the gender employment gap and trade openness need to be taken into account. Box 1 presents some of the cautionary considerations when interpreting the TGI.

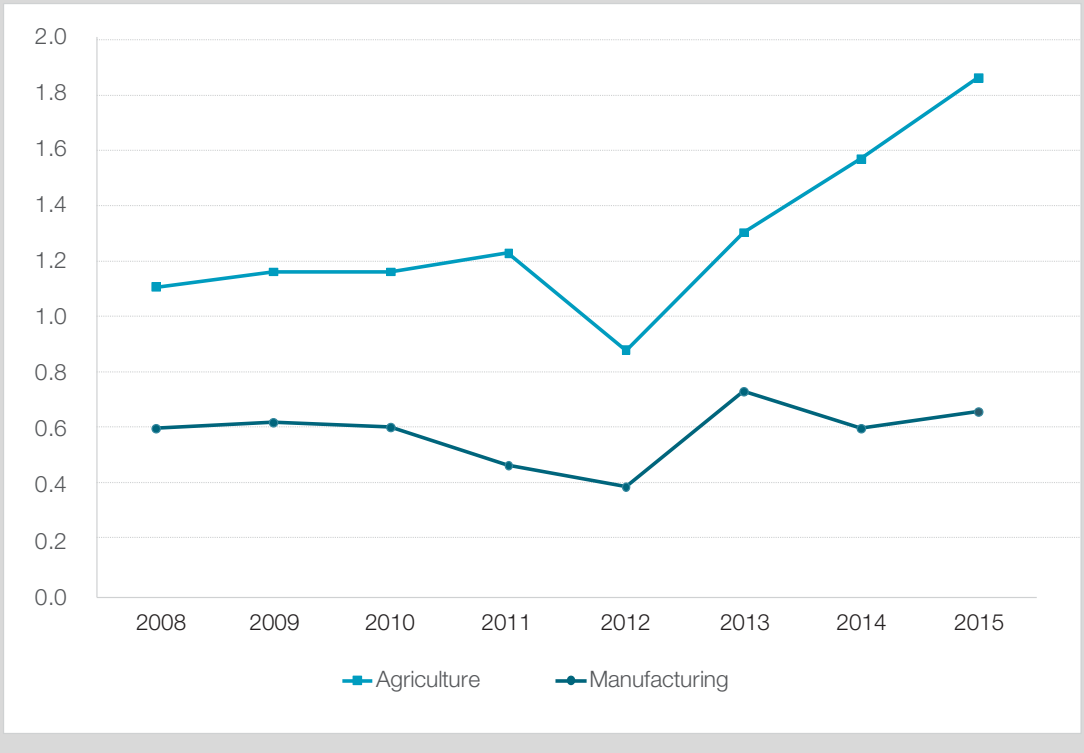
By definition, if there is total equality in employment between men and women, the numerator, and hence the TGI, takes the value zero.[22] In the analysis that follows, when computing the index for the specific case of Kenya, we will clarify the sources of variation of the index by explicitly providing the values of the numerator and the denominator.

6.2. THE TRADE AND GENDER INDEX FOR KENYA

Based on the data collected from the United Nations Comtrade database for trade flows and from Kenya's Economic Surveys for the GDP and labour force figures, the TGI is computed for Kenya for the period 2008–2015. The index is calculated for the agricultural and manufacturing sectors for which data were readily available. For the services sector, the openness indicator cannot be computed as it consists mostly of non-tradable products.

The corresponding indices are plotted on figure 14. Accordingly, three phases can be observed over the period. From 2008 to 2011, the level of the TGI is relatively stable; a decrease appears in 2012, followed by a rebound from 2013 onwards. According to the decomposition of the index in table 22, the decline in the TGI in 2012 is explained by a greater reduction in gender inequalities than in openness to trade. More worrying is the positive trend in the value of the index from 2013 onwards. In both sectors, this increase is driven by a worsening in the gender employment

Figure 14. Trade and Gender Index, 2008–2015



Source: Calculations by the UNCTAD secretariatbased on Kenyan National Bureau of Statistics, Economic Survey, various years.

Table 22. Decomposition of the Trade and Gender Index, 2008–2015

		2008	2009	2010	2011	2012	2013	2014	2015
Agriculture	TGI	1.11	1.16	1.16	1.23	0.88	1.30	1.57	1.86
	GEG	64.4%	63.6%	69.7%	69.9%	39.1%	42.7%	48.9%	48.6%
	TO	58.0%	54.7%	60.0%	56.8%	44.3%	32.8%	31.2%	26.2%
Manufacturing	TGI	0.61	0.63	0.61	0.47	0.40	0.74	0.61	0.66
	GEG	77.2%	77.1%	82.1%	80.5%	59.5%	77.7%	77.4%	80.1%
	TO	127.5%	123.3%	134.5%	170.3%	150.1%	105.6%	127.8%	120.7%

Source: Calculations by the UNCTAD secretariat based on Kenyan National Bureau of Statistics, Economic Survey, various years.
Note: GEG: Gender Employment Gap; TO: Trade Openness; TGI: Trade and Gender Index.

gap, reaching 48.6 per cent and 80 per cent in 2015 in the agricultural and the manufacturing sectors, respectively. Simultaneously, the share of agricultural trade flows in the economy declined over the period, contributing to the increase in the index. While both components could interact with each other, without a causal analysis it is arduous to attribute the deterioration in gender equalities to the variation in trade openness.

The TGI in Kenya suggests that the evolution of gender inequalities in the country should be under scrutiny due to the worrying trend observed in recent years. Moreover, the possible implementation of the EPA is likely to make working conditions worse in sectors involving a significant share of the female workforce.

NOTES

[22] By construction, the index has no upper or lower bound, as it is a function of two indices that are not bounded themselves.

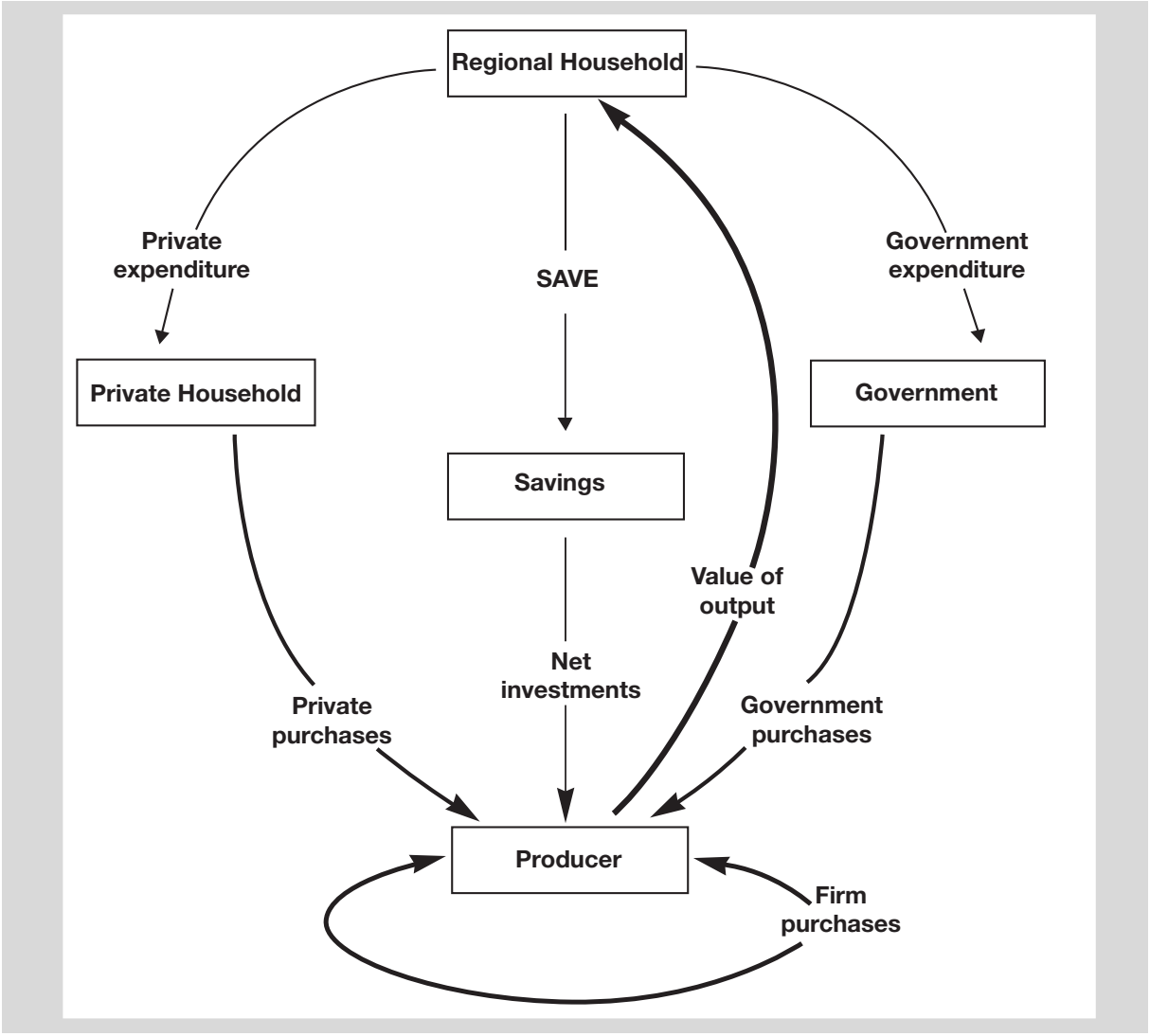
7. METHODOLOGICAL APPENDIX: THE GTAP CGE MODEL

For the purposes of this study, a Computational General Equilibrium (CGE) model has been used. A CGE model describes how the economy may react to changes in policy, technology, or other shocks using actual economic data and equations describing the relationship between the different components of the economy. In particular, it uses elasticities to estimate changes, such as demand effects, resulting from shocks, such as changes in tariffs. Elasticity can be thought of as a way to measure the impact of a change (such as a price change) on, for instance, demand for the product at the new price. CGE models originally date to Leontief's input-output tables. The first more general CGE work, carried out on lower- and middle-income countries, was conducted by Manne (1963) and Sanjee (1960). This was later also expanded to developed countries, such as Johansen's (1960) study of Norway. CGE models in their modern form date to Taylor and Black (1974).

7.1. THE BASIC WORKHORSE

A CGE model generally consists of two main components: (1) equations linking variables and (2)

Figure 15. Schematic representation of a closed economy in the Computable General Equilibrium Model



Source: Brockmeier (2001).

economic data. The set of equations provides the model based on which the variables (the real-world economic data) are linked and respond to each other.

The databases contain two basic types of information:

- Tables of transaction values, such as, for instance, the value of chemical fertilizer used by the flower industry. These databases are normally input-output tables or a social accounting matrix. Both of these capture the entire economy for countries and more generally for the world as a whole. They distinguish between a number of sectors, commodities, and primary factors.
- Elasticities, which are dimensionless parameters that capture behavioural responses. An example would be the response in terms of the demand of private households in the Kenyan economy to a change in tariffs on imports from the European Union. These elasticities generally consist of primary-factor elasticities and intermediate-factor elasticities between domestic production and imports, known as Armington elasticities (Armington, 1969).

Here we use the GTAP database version 9, containing tariff information. Version 9 contains recent economic data for 2004, 2007, and 2011 as well as data for earlier years. Version 9 of the GTAP contains a total of 140 countries or regions.

Figure 15 schematically displays the functioning of an economy in the framework of the CGE.

7.2. THE BASIC ASSUMPTIONS OF THE CGE MODEL IN A CLOSED ECONOMY

The simplest form of the model represents a single closed economy – closed in the sense that it does not have any trade relationship with the rest of the world.

There are three main agents in the economy – the household, the producer, and the government – that are connected through different flows. The household collects the income generated by its production factors (labour and capital) and paid by the producers. Then, the household distributes its income entirely over three types of expenditures: taxes, savings, and purchases. The collection of taxes constitutes the revenue of the government that is eventually entirely spent on the goods produced in the economy. Savings are invested into producers and thus increase the amount of capital available to producers for their production processes. Using these investments, future returns are generated. In return for the provision of capital, the producers in the future reward the households with interest on the capital provided.

7.3. THE CGE MODEL IN AN OPEN ECONOMY

The assumption of a single closed economy can be relaxed by introducing international trade. In order to keep the model simple, it is possible to aggregate all the flows with other countries into a single grouping labelled as the "rest of the world" (RoW). In such an open-economy model, a RoW equivalent of every agent exists. The existing flows between the agents, such as purchases, now also have international equivalents. The private purchases from RoW producers represent imports. Similarly, domestic firms can also sell their products to the RoW and this flow would be labelled as exports.

In this study, two main trading groups are of particular interest. The first is the European Union, as the partner in the negotiated trade agreement for which we expect a significant change on bilateral trade flows due to the tariff variation. The second is the EAC, as the EPA involves not only Kenya but also all the other members of the EPA (provided that they also ratify the agreement). It is particularly important to consider this group of countries separately in the estimation of the model in order to take into account any substitution or complementary effect.

7.4. DETAILED RESULTS

Table 23 presents the detailed results of the estimation of the CGE model on the impact of the EPA on labour demand in Kenya differentiated across sectors and skill level.

Table 23. Results of the estimation of the impact of the EPA: labour demand (per cent change)

Per cent change	Skilled labour		Unskilled labour	
EPA versus… scenario	GSP	Current situation	GSP	Current situation
Agricultural commodities				
Rice	-0.08	0.04	-0.08	-0.16
Wheat	-0.01	-0.01	-0.02	-0.20
Cereal grains	0	0.04	-0.01	-0.17
Vegetables, fruit, nuts	-0.01	0.10	-0.02	-0.12
Oil seeds	0	0.05	-0.02	-0.16
Sugar cane, sugar beet	-0.05	0.31	-0.05	0.05
Plant-based fibres	-0.04	0	-0.04	-0.19
Other crops	0.08	0.73	0.05	0.38
Bovine cattle, sheep and goats, horses	0	0.03	-0.02	-0.17
Animal products	-0.11	-0.05	-0.09	-0.24
Raw milk	0.02	0.06	0	-0.15
Wool, silk-worms, cocoons	-0.99	-0.87	-0.79	-0.88
Forestry	-0.01	0.12	-0.01	-0.05
Fishing	-0.03	0.04	-0.03	-0.12
Coal	-0.05	0.27	-0.05	0.07
Oil	-0.13	0.31	-0.12	0.10
Gas	-0.21	0.20	-0.18	0.01
Minerals	-0.11	0.31	-0.10	0.10
Bovine meat products	-0.07	0.30	-0.06	-0.35
Meat products	0.01	0.36	-0.02	-0.33
Vegetable oils and fats	-0.22	0.80	-0.13	-0.12
Dairy products	0.03	0.27	-0.01	-0.37
Processed rice	-0.07	0.47	-0.06	-0.28
Sugar	-0.06	0.41	-0.06	-0.30
Food products	-0.10	0.26	-0.08	-0.37
Beverages and tobacco	0.02	0.36	-0.02	-0.33
Manufacturing and raw materials				
Textiles	0.01	1.15	-0.02	-0.01
Wearing apparel	-0.14	0.66	-0.09	-0.23
Leather products	0.32	1.42	0.11	0.11
Wood products	-1.13	-0.27	-0.53	-0.64
Paper products, publishing	-0.24	-0.56	-0.14	-0.77
Light manufacture	-0.86	-2.02	-0.41	-1.42
Heavy manufacture	1.18	-0.71	0.49	-0.84
Petroleum, coal products	-0.14	0.17	-0.09	-0.45
Chemical, rubber, plastic	-1.14	-0.05	-0.54	-0.55
Services				
Utilities	-0.03	0.25	-0.04	-0.43

Per cent change	Skilled labour		Unskilled labour	
Transportation	-0.04	0.54	-0.05	-0.38
Other services	-0.05	0.19	-0.05	-0.37
Government services	-0.02	0.06	-0.04	-0.31

Source: Estimation by the UNCTAD secretariat based on the Global Trade Analysis Project – Computational General Equilibrium model.
Note: GSP: Generalized System of Preferences.

8. TOOLBOX WORKSHEETS

The four components of the Trade and Gender Toolbox are associated with corresponding worksheets. This section presents the four Toolbox Worksheets and the tables within each one, as follows:

Worksheet 1: Gender and economy

Access to resources

Access to education

Worksheet 2: Estimation results

Impact of implementation of the EPA on the quantity of labour demand (baseline scenario: GSP)

Identification of the critical sectors for women's employment

Worksheet 3: Monitoring indicators

Working hours

Wages

Types of contracts

Working conditions

Access to resources

Worksheet 4: Trade and Gender Index

Female employment (formal) and gender gap

Calculation of the Trade and Gender Index

TOOLBOX WORKSHEET 1: GENDER AND ECONOMY

Note: Toolbox Worksheet 1 only presents data for access to resources and access to education; all the relevant data for education, employment, and earnings (i.e. the other dimensions introduced to assess female participation in the Kenyan economy) are presented in Section 3.

Access to resources

Land		Source
Equal rights ensured legally?	Yes	Matrimonial Property Act of 2013
Registered land by women	1%	Kenya Land Alliance (2014)
Registered land, in joint names (including a woman)	6%	
Do sons and daughters have equal rights to inherit assets from their parents?	Yes	Women, Business, and the Law (World Bank, 2016b)
Do female and male surviving spouses have equal rights to inherit assets?	No	
Per cent of women who own a house alone	7.9%	World Bank Gender Statistics Database, 2016
Per cent of men who own a house alone	37.8%	
Per cent of women who own a house jointly	30.6%	
Per cent of men who own a house jointly	11.0%	
Per cent of women who own land alone	7.0%	
Per cent of men who own land alone	30.2%	
Per cent of women who own land jointly	28.2%	
Per cent of men who own land jointly	12.6%	
Gender gap in land owning (sole and joint)	17.76%	
Gender gap in land owning (sole)	76.82%	

Financial resources, 2011 and 2014 (per cent)		
	2011	2014
Gender gap in access to formal financial resources	6.48	6.98
Account at a financial institution, female (age 15+)	39.17	51.94
Account at a financial institution, male (age 15+)	45.65	58.92

Source: World Bank Gender Statistics Database, 2016.

Legislation on economic rights in 2015	
Law mandates equal remuneration for females and males for work of equal value	Yes
Law mandates non-discrimination based on gender in hiring	No
Law mandates paid or unpaid maternity leave	Yes
Non-discrimination clause mentions gender in the constitution	Yes
Is customary law recognized as a valid source of law under the constitution?[a]	Yes
If customary law is recognized as a valid source of law under the constitution, is it invalid if it violates constitutional provisions on nondiscrimination or equality?[a]	Yes
Is personal law recognized as a valid source of law under the constitution?[a]	Yes
If personal law is recognized as a valid source of law under the constitution, is it invalid if it violates constitutional provisions on non-discrimination or equality?[a]	No

Source: World Bank Gender Statistics Database, 2016.
[a] Refers to 2016. The source for these items is World Bank (2016b).

Access to education

		2006	2009	2012
School enrolment, (per cent, net)	Primary, female	75.94	83.31	86.60
	Primary, male	74.61	82.26	83.17
	Secondary, male	43.02	51.80	57.39
	Secondary, female	41.54	48.67	55.62

Source: World Bank, World Development Indicators, 2016.

TOOLBOX WORKSHEET 2: ESTIMATION RESULTS

Impact of implementation of the EPA on the quantity of labour demand (per cent; baseline scenario: GSP)

	Unskilled	Skilled
Wool	-0.79	-0.99
Chemicals	-0.54	-1.14
Wood products	-0.53	-1.13
Light manufacture	-0.41	-0.86
Gas	-0.18	-0.21
Paper publishing	-0.14	-0.24
Vegetable oils	-0.13	-0.22
Oil	-0.12	-0.13
Minerals	-0.10	-0.11
Animal products	-0.09	-0.11
Wearing apparel	-0.09	-0.14
Petroleum and coal	-0.09	-0.14
Rice	-0.08	-0.08
Food products	-0.08	-0.10
Bovine meat	-0.06	-0.07
Processed rice	-0.06	-0.07
Sugar	-0.06	-0.06
Sugar cane and beet	-0.05	-0.05
Coal	-0.05	-0.05
Transportation	-0.05	-0.04
Other services	-0.05	-0.05
Plant-based fibres	-0.04	-0.04
Utilities	-0.04	-0.03
Government services	-0.04	-0.02
Fishing	-0.03	-0.03
Wheat	-0.02	-0.01
Vegetables, fruit, nuts	-0.02	-0.01
Oil seeds	-0.02	0
Cattle	-0.02	0
Meat products	-0.02	0.01

	Unskilled	Skilled
Beverages and tobacco	-0.02	0.02
Textiles	-0.02	0.01
Cereal grains	-0.01	0
Forestry	-0.01	-0.01
Dairy products	-0.01	0.03
Raw milk	0	0.02
Other crops	0.05	0.08
Leather products	0.11	0.32
Heavy manufacture	0.49	1.18

Source: Calculations by the UNCTAD secretariat based on the Global Trade Analysis Project – Computational General Equilibrium model.
Note: For more details on the methodology, see https://www.gtap.agecon.purdue.edu/models/cge_gtap_n.asp. GSP: Generalized System of Preferences

Identification of the critical sectors for women's employment (per cent)

	Share of female workers, 2014–2015 (per cent)	Estimated labour variation due to the EPA	Adjusted share of female workers, 2014–2015 (per cent)
Public sector	48.60	-0.0002	2.92
Agriculture, forestry, and fishing	12.40		21
Tea	3.05	0.0005	5.17
Coffee	0.51	0.0005	0.87
Horticulture	2.50	0.0005	4.24
Tobacco	0.39	-0.0002	0.66
Manufacturing	5.30		8.06
Food	2.93	-0.0008	4.46
Textiles	0.66	-0.0002	1.01
Garments	0.48	-0.0009	0.73
Chemicals	0.32	-0.0114	0.48
Furniture	0.20	-0.0086	0.31

Sources: Kenyan National Bureau of Statistics, Economic Survey, 2016; and Kenya's 2009 Population and Housing Census, available via the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center, 2015). Note: The public sector includes public administration, education, and health care. To calculate the adjusted values to take into account the informal sector, we use the IPUMS International. EPA: Economic Partnership Agreement.

TOOLBOX WORKSHEET 3: MONITORING INDICATORS

Note: The tables in Toolbox Worksheet 3 are presented as examples of gender-based indicators that should be monitored to assess the evolution of gender inequalities before and after the trade reforms. The data presented refer to Kenya in the pre-EPA scenario. The indicators should be re-calculated after implementation of the EPA.

Working hours

	Pre-EPA				
	Female number	Female share (per cent)	Male number	Male share (per cent)	Gender gap (per cent)
	Working hours, per week				
None	277	0.03	265	0.03	-4.5
1 to 14 hours	55,047	6.05	49,081	5	-12.2
15 to 29 hours	133,194	14.65	102,236	10.42	-30.3
30 to 39 hours	158,667	17.45	129,335	13.18	-22.7
40 to 48 hours	194,844	21.43	231,055	23.55	15.7
49 hours of more	253,406	27.86	360,109	36.71	29.6
Unknown	113,988	12.53	108,949	11.11	-4.6
Total	909,423	100	981,030	100	7.3

Source: Kenya's 2009 Population and Housing Census, available via the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center, 2015).
Note: The figures are restricted to employed individuals. EPA: Economic Partnership Agreement.

Wages

	Pre-EPA										
	No. of individuals	No. of males	No. of females	Gross hourly wage, Kenyan shillings			Net hourly wage, Kenyan shillings			Ratio of net hourly wage to gross hourly wage (male)	Ratio of net hourly wage to gross hourly wage (female)
				Male wage	Female wage	Gender gap (per cent)	Male wage	Female wage	Gender gap (per cent)		
Missing (Mapping not available)	12	8	4	214.10	111.10		34.40	284.10		0.16	2.56
Finance managers	21	17	4	215.00	157.40	26.80	154.60	120.30	22.14	0.72	0.76
Human resource managers	16	9	7	145.70	139.80	4.00	72.70	98.10	-34.89	0.50	0.70
Restaurant managers	59	44	15	69.30	67.90	2.00	57.80	53.80	6.94	0.83	0.79
Nursing professionals	1	0	1		323.40			236.80			0.73

	No. of individuals	No. of males	No. of females	Gross hourly wage, Kenyan shillings			Net hourly wage, Kenyan shillings			Ratio of net hourly wage to gross hourly wage (male)	Ratio of net hourly wage to gross hourly wage (female)
				Male wage	Female wage	Gender gap (per cent)	Male wage	Female wage	Gender gap (per cent)		
Primary school teachers	2	0	2		119.00			37.00			0.31
Accounting associate professionals	224	162	62	186.00	165.70	11.00	113.10	103.70	8.28	0.61	0.63
Secretaries (general)	156	26	130	70.40	92.30	-31.10	41.90	61.70	-47.09	0.60	0.67
Travel consultants and clerks	67	47	20	60.24	60.60	-0.50	51.40	41.80	18.66	0.85	0.69
Hotel receptionists	1	1	0	96.20			81.80			0.85	
Receptionists (general)	3	2	1	44.90	49.50		35.10	48.20		0.78	0.97
Travel guides	38	32	6	62.20	52.30	15.90	54.90	50.80	7.38	0.88	0.97
Cooks	138	88	50	57.90	37.60	35.00	41.10	27.10	33.92	0.71	0.72
Waiters	144	50	94	32.40	27.10	16.20	26.40	21.30	19.24	0.82	0.79
Street food salespersons	3	2	1	24.80	14.00		24.70	14.00			
Field crop and vegetable growers	82	69	13	30.50	86.70	-184.50	25.90	36.10	-39.61	0.85	0.42
Forestry and related workers	44	30	14	82.30	53.90	34.60	64.70	32.90	49.17	0.79	0.61
Subsistence, mixed-crop, and livestock farmers	86	78	8	26.40	18.00	31.80	20.40	15.20	25.27	0.77	0.85
Carpenters and joiners	104	101	3	45.30	45.50	-0.50	45.30	43.2	4.65	1.00	0.95
Food and related products machine operators	1	0	1		90.50			30.40			0.34
Car, taxi, and van drivers	35	34	1	51.00	20.60	59.5	41.0			0.80	

	No. of individuals	No. of males	No. of females	Gross hourly wage, Kenyan shillings			Net hourly wage, Kenyan shillings			Ratio of net hourly wage to gross hourly wage (male)	Ratio of net hourly wage to gross hourly wage (female)
				Male wage	Female wage	Gender gap (per cent)	Male wage	Female wage	Gender gap (per cent)		
Heavy truck and lorry drivers	38	35	3	64.00	42.20	34.1	61.0	31.10	48.97	0.95	0.74
Domestic cleaners and helpers	1	0	1		16.50			16.50			1.00
Cleaners and helpers in offices, hotels	152	65	87	89.00	45.90	48.10	40.40	33.40	17.41	0.46	0.73
Crop farm labourers	60	32	28	28.10	39.40	-40.50	26.80	31.70	-18.38	0.95	0.80
Building construction labourers	26	19	7	32.20	106.20	-229.80	28.50	90.10	-216.33	0.88	0.85
Building construction labourers	26	19	7	32.20	106.20	-229.80	28.50	90.10	-216.33	0.88	0.85

Source: Tijdens and Wanbugu (2012).
Note: The rows in grey are not to be used either because of insufficient observations or odd numbers. The gender gap should be interpreted with caution as it does not take into account the factors such as age, experience, education, etc. that could explain the difference between the working hours of men and women.

Types of contracts

	Pre-EPA				
	No. of males	Male (per cent)	No. of females	Female (per cent)	Gender gap (per cent)
Missing (Mapping not available)	321	33.75	208	36.88	35.20
Fixed-term contract with the prospect of permanent employment	91	9.57	61	10.82	32.97
Fixed-term contract without the prospect of permanent employment	128	13.46	63	11.17	50.78
Contract with temp agency	64	6.73	36	6.38	43.75
No written contract	222	23.34	127	22.52	42.79
Replacement contract	48	5.05	37	6.56	22.92
Contractor/labour-only	26	2.73	9	1.60	65.38
Other	51	5.36	23	4.08	54.90
Total	951	100	564	100	40.69

Source: Tijdens and Wanbugu (2012).
Note: EPA: Economic Partnership Agreement.

Working conditions

	Pre-EPA			Post-EPA		
	Male share (per cent)	Female share (per cent)	Gender Gap (per cent)	Male share (per cent)	Female share (per cent)	Gender gap (per cent)
Bargaining coverage						
Covered by a collective agreement	30.71	40.28	-31.16			
Member of a trade union	19.49	23.69	-21.55			
Social coverage*						
Participation in a health insurance scheme	25.13	27.35	-8.83			
Participation in a pension scheme	19.83	18.65	5.95			
Access to child-care arrangement	3.82	3.94	-3.14			

Source: Calculations by the UNCTAD secretariat based on Tijdens and Wanbugu (2012).
Note: EPA: Economic Partnership Agreement.
**Refers to the schemes available in the workplace in the past 12 months.*

Access to resources

	Pre-EPA		
	Women (per cent of women 15+ years of age)	Men (per cent of men 15+ years of age)	Gender gap
Property or land			
Own property	7	30.2	0.77
Joint property	28.2	12.6	-1.24
Borrowed money….			
In the past year	78.27	80.23	0.02
From a financial institution	6.79	12.82	0.47
From a private informal lender	5.56	7.67	0.28
From family or friend	62.33	58.35	-0.07
From a store by buying on credit	19.65	16.45	-0.19
To start, operate, or expand a farm or business	21.12	27.82	0.24
Use of a bank account			
In a financial institution	51.94	58.92	0.12
In a financial institution for business purposes	9.12	16.09	0.43

Source: World Bank Gender Statistics Database, 2016.
Note: EPA: Economic Partnership Agreement.

TOOLBOX WORKSHEET 4: TRADE AND GENDER INDEX

Female employment (formal) and gender gap

	2008					2009				
	Female (thousands)	Male (thousands)	Female share (per cent)	Share of female employment (per cent)	Gender gap (per cent)	Female (thousands)	Male (thousands)	Female share (per cent)	Share of female employment (per cent)	Gender gap (per cent)
Agriculture, forestry, and fishing	89.5	251.2	26.3	15.2	64.4	90.8	249.5	26.7	14.9	63.6
Manufacturing	49	215.1	18.6	8.3	77.2	49.4	215.9	18.6	8.1	77.1
Mining and quarrying	1.4	5.1	21.5	0.2	72.5	1.6	4.9	24.6	0.3	67.3

	2011					2012				
	Female (thousands)	Male (thousands)	Female share (per cent)	Share of female employment (per cent)	Gender gap (per cent)	Female (thousands)	Male (thousands)	Female share (per cent)	Share of female employment (per cent)	Gender gap (per cent)
Agriculture, forestry, and fishing	80.1	265.8	23.2	12.3	69.9	127.8	209.9	37.8	16.2	39.1
Manufacturing	44.9	230.8	16.3	6.9	80.5	78.1	192.8	28.8	9.9	59.5
Mining and quarrying	3.6	5.2	40.9	0.6	30.8	1.7	7.3	18.9	0.2	76.7

	2013					2014				
	Female (thousands)	Male (thousands)	Female share (per cent)	Share of female employment (per cent)	Gender gap (per cent)	Female (thousands)	Male (thousands)	Female share (per cent)	Share of female employment (per cent)	Gender gap (per cent)
Agriculture, forestry, and fishing	124.7	217.8	36.4	14.9	42.7	112.7	220.6	33.8	12.0	48.9
Manufacturing	50.9	228.5	18.2	6.1	77.7	53	234.5	18.4	5.6	77.4
Mining and quarrying	1.7	7.7	18.1	0.2	77.9	2	10.9	15.5	0.2	81.7

	2015 (provisional)				
	Female (thousands)	Male (thousands)	Female share (per cent)	Share of female employment (per cent)	Gender gap (per cent)
Agriculture, forestry, and fishing	114.4	222.6	33.9	12.4	48.6
Manufacturing	49	246.4	16.6	5.3	80.1
Mining and quarrying	2.2	12.2	15.3	0.2	82.0

Source: Kenyan National Bureau of Statistics, Economic Survey, 2016.
Note: The female share is calculated as the share of women in total industry employment. The share of female employment refers to the ratio of women's employment in a given sector to total women's employment in the formal economy. The gender gap is calculated as the ratio of the difference between male and female employment to male employment.

Calculation of the Trade and Gender Index

	Agriculture (i.e. agriculture, forestry, and fishing)							
	Female share (per cent)	Share of female employment (per cent)	Gender employment gap (per cent)	GDP (millions of Kenyan shillings)	Export value (millions of Kenyan shillings)	Import value (millions of Kenyan shillings)	Trade openness (per cent)	Trade and Gender Index
2008	26.3	15.2	64.4	480,203	203,367.2776	75,337.31895	58.0	1.11
2009	26.7	14.9	63.6	565,191	201,962.6233	107,297.993	54.7	1.16
2010	23.2	13.5	69.7	560,564	241,856.8978	94,539.80812	60.0	1.16
2011	23.2	12.3	69.9	741,251	265,681.7701	155,468.5815	56.8	1.23
2012	37.8	16.2	39.1	853,738	237,674.3326	140,782.1921	44.3	0.88
2013	36.4	14.9	42.7	1,253,477	281,279.6478	129,749.5428	32.8	1.30
2014	33.8	12.0	48.9	1,473,787	288,293.7858	171,887.5665	31.2	1.57
2015	33.9	12.4	48.6	1,867,034	312,160.1596	176,875.9452	26.2	1.86

Source: Kenyan National Bureau of Statistics, Economic Survey, 2016.

	Manufacturing							
	Female share (per cent)	Share of female employ-ment (per cent)	Gender employ-ment gap (per cent)	GDP (millions of Kenyan shillings)	Export value (millions of Kenyan shillings)	Import value (millions of Kenyan shillings)	Trade openness (per cent)	Trade and Gender Index
2008	18.6	8.3	77.2	228,304	93,157.36557	197,926.0853	127.5	0.61
2009	18.6	8.1	77.1	234,556	83,526.63668	205,639.4738	123.3	0.63
2010	15.2	7.0	82.1	252,122	92,784.47687	246,404.0092	134.5	0.61
2011	16.3	6.9	80.5	285,698	90,963.2766	395,689.9024	170.3	0.47
2012	28.8	9.9	59.5	321,723	87,327.53158	395,470.5584	150.1	0.40
2013	18.2	6.1	77.7	498,357	130,209.3529	395,992.8249	105.6	0.74
2014	18.4	5.6	77.4	539,388	115,725.8776	573,871.568	127.8	0.61
2015	16.6	5.3	80.1	644,057	103,898.0355	673,355.5476	120.7	0.66

Source: Kenyan National Bureau of Statistics, Economic Survey, 2016.

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