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Tanzania's 'rice bowl': Production success, scarcity persistence and rent seeking in the East African Community

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Contents

Figures

Tables

Acronyms and abbreviations

CEPA	Cambridge Economic Policy Associates
CET	Common External Tariff
COMESA	Common Market for Eastern and Southern Africa
EABC	East African Business Council
EAC	East African Community
Ha	Hectare
KPL	Kilombero Plantation Limited
MT	Metric Tonne
NTB	Non-Technical Trade barriers
ROO	Rules of Origin
SADC	Southern African Development Community
SI	Sensitive Item
SSA	Sub-Saharan Africa
TBT	Technical Barriers to Trade
TRA	Tanzania Revenue Authority
Tsh	Tanzanian Shillings
UNCTAD	United Nations Conference on Trade and Development

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Executive summary

Rice is a 'political crop'. As the second most important staple crop after maize in people's diets in sub-Saharan Africa (SSA), rice attracts considerable domestic political attention. Furthermore, there is evidence to suggest that rice prices and availability can result in (dis)satisfaction with the ruling elite, perhaps influence election results, sometimes cause street protests and encourage rent-seeking. Although urbanisation and the higher incomes and changing tastes that come with it mean that demand for rice can grow rapidly, domestic production typically lags behind.

Rice scarcity – that is, the difference between domestic supplies and national consumption requirements – has grown in most SSA countries since the early 2000s. As a result, trade in rice has become the target of political micro-management and food security-related measures (e.g., differentiated import duties, exemptions and export bans). This has happened at both the national and regional levels, and in many cases at their policy intersection, as within the East African Community (EAC). Such policies are often vulnerable to corruption, however, because they allocate various forms of rents (e.g., through import licensing) and create rents opportunities due to policy-induced price differences across countries. Indeed, for political crops like rice and sugar, the major sources of corruption typically stem from rents that are intrinsically linked to scarcity. This is what we define and theorize as the 'political logic of scarcity'.[1]

Across SSA, Tanzania presents a puzzling exception. Rice growers, who are mainly smallholders, have quadrupled production since 2000 and have increasingly kept up with growing consumption. Since 2014, the country has become largely self-sufficient. Given this production success, scarcity-related rent-seeking should have declined. But the evidence shows the contrary: rent-seeking persists in Tanzania's rice sector, driven by scarcity within the EAC and the broader region. A regional perspective on rice production and trade is therefore important to understand the political economy of rent-seeking in the rice sector in East Africa. National rice markets are de facto intertwined.

Our analysis in this paper shows that rents from trade in rice have shifted from rent-seeking in the domestic market towards rent-seeking in Tanzania's nearby export markets. The remarkable increase in rice production – mainly by smallholders – is an important driver of this shift. Another is the decentralised and fairly competitive rice value chain, which provides incentives for rice-growers despite the dominance of large traders in parts of the chain. A third driver is that much of the rice smuggled into Tanzania (often through Zanzibar) is not consumed there but instead is exported to neighbouring countries – especially Kenya – where the shortage of rice is substantial and price levels are higher than in Tanzania.

Based on these insights we propose an anti-corruption strategy that largely harmonises rice import tariffs across EAC member countries. This will formalise and encourage intra-regional trade in rice and provide larger export markets for surplus producers like Tanzania. It will also

[1] For a theoretical discussion of this see our companion paper on sugar (Andreoni et al., 2020).

reduce the under-reporting of rice, which in 2017 amounted to some US$100 million for Tanzania alone with a potential revenue loss of around US$75 million. A feasible anti-corruption strategy should establish a new formal trade arrangement that:

(a) aligns with the national and regional political economy and formalises current semi-formal practices

(b) promotes collective action among countries in the region, supported by horizontal enforcement in the regional business community

(c) reduces inconsistencies across tariff schedules, thus making trade regimes easier to enforce and limiting corruption vulnerabilities as a result

(d) promotes some competition among rice traders at the regional level

(e) promotes regional supply chain integration in the rice sector and incentivises productivity increases.

As the main producer of rice in the region, Tanzania is in a unique position to promote this anti-corruption strategy.

1. Introduction

Across sub-Saharan Africa (SSA) rice is now the second most important staple crop in people's diets after maize. And demand for it grows rapidly in the face of urbanisation and changing tastes. In many countries, a substantial number of growers, millers and traders are involved in its production and marketing. The supply and price of rice affect incomes, consumption, domestic politics as well as social stability (Anderson & Nelgen, 2012; Oort et al., 2015; Seck, Touré, Coulibaly, Diagne, & Wopereis, 2013).

Rice scarcity grew in SSA between 2008 and 2018 (Roy-Macauley, 2018, 15). Most countries faced a growing gap between domestically produced rice and consumer demand, which has been filled by legal and illegal imports. These imports, in turn, affect rice prices and availability, and can result in (dis)satisfaction with the ruling elite, perhaps influence election results, sometimes cause street protests and encourage rent-seeking (Bush & Martiniello, 2017; Whitfield, Therkildsen, Buur, & Kjær, 2015). Rice therefore attracts considerable political attention: it is a 'political crop'.

All members of the East African Community (EAC) – Tanzania included – consume, produce and trade large quantities of rice (Ghins, Balié, & Pauw, 2017). Since 2005, the EAC has classified rice as a 'Sensitive Item' (SI) and has applied high import tariffs (initially at 75%) to encourage local production and self-sufficiency. That tariff rate – scheduled under the EAC Common External Tariff (CET) – has changed over time and across countries: it is no longer common (Bünder, 2018). This has helped to fuel rent-seeking as well as trade disputes among the member states, particularly in relation to rules of origin and tariff exemptions (East African Business Council, 2020, 14).

In Tanzania, rice growers (who are mainly smallholders)[2] have increased production significantly and have largely kept pace with rapidly growing consumption since 2014. Measured in this way, Tanzania is now self-sufficient in rice – an untold success story that sets Tanzania apart from other EAC members and almost all SSA countries. However, reduced scarcity in the country has not eliminated rent-seeking in the rice trade: its main features have changed instead.

This paper explains the rent-seeking processes at play in Tanzania's rice sector and changes within these processes over time. This enables us to develop a feasible anti-corruption strategy for the sector and to address the related rice scarcity problem at national and regional levels. We argue that real or perceived scarcity in Tanzania (as well as in neighbouring countries) trigger various rice-sector and political responses. In turn, these responses generate various rent-processes, each one reflecting the political economy of the crop. Three features of the Tanzanian rice sector are important to explain these rent-seeking processes:

[2] We use 'smallholders' as shorthand for farmers who cultivate up to 20 hectares (ha) of land. See Wineman et al. (2020, Figure 1).

1 Rice is grown by smallholders in many varieties, each with different prices and tastes and distributed through a variety of fairly competitive marketing channels. Therefore, the benefits from tariff protection – to the extent that it is enforced – are only partly captured by traders. This induces higher prices for growers who respond by increasing production through area expansion and (to some extent) increases in yields.

2 This 'political crop' attracts substantial political attention within the EAC member states, which results in attempts to micro-manage the rice trade. Intentionally and unintentionally, this generates rents that are often captured by politically important traders in the rice sector.

3 Although Tanzania is technically self-sufficient in rice (i.e., local production matches local consumption), scarcity and rent-seeking must be analysed and understood in a regional not a national context. At the same time, scarcity also needs to be understood from a political perspective – in recent years, scarcity in other EAC member countries and even outside the bloc has driven corrupt practices in Tanzania's rice import and export trade.

We contribute to the literature on rice production and trade in Africa by showing that a more explicit political economy perspective inspired by Khan et al. (2019) has substantial explanatory power. A regional perspective on rice production and trade is also important to understand the political economy of rice in East Africa, because national rice markets are de facto intertwined. Based on insights from these two perspectives, we propose an anti-corruption strategy that largely harmonises rice import tariffs across EAC member countries. This will formalise and encourage intra-regional trade in rice and provide larger export markets for surplus producers like Tanzania. It will also reduce the underreporting of rice, which in 2017 amounted to some US$100 million in Tanzania.

Moreover, we add to the empirical evidence on the rice sector through new analyses and extensive use of very detailed data on trade in rice – both mirror statistics and transaction-based data. These analyses are based on official Tanzanian and international databases. However, given the nature of the rent-seeking processes and the informality of the rice sector, data quality is a problem (as we point out where relevant). Official documents are also used, although access has sometimes been challenging. Interviews were also conducted with a few rice producers and traders, civil servants, representatives from interested organisations, academics, consultants and politicians between 2017 and 2019.

The remainder of the paper is organised as follows. Section 2 introduces the sugar scarcity problem and investigates what we call the 'political logic of scarcity'. Using this framework, we analyse scarcity in section 3 with a focus on the Tanzanian rice sector but also considering the rice gap in other EAC member countries. Section 4 presents a political economy analysis of rent-seeking processes in Tanzania, linking it to the real scarcity of rice in neighbouring countries. We draw on these analyses and new evidence to advance some anti-corruption strategies in section 5.

2. The political logic of 'scarcity' and rent-seeking: why not all crops are the same

To address the problem of corruption in the rice sector in Tanzania and other developing countries, we argue that it is important to understand the 'political logic of scarcity'. In a companion paper (Andreoni, Mushi, & Therkildsen, 2021) we explain this logic with a focus on another political crop, sugar. Here as well as in the related paper we specifically argue that 'the most fundamental constraining processes and the major sources of corruption stem from the fact that rents are intrinsically linked to scarcity; second, that rent-seeking is both about exploiting the existing real scarcity as much as actively creating and reproducing both real and artificial scarcity' (ibid: 4). Powerful groups can extract considerable rents from such scarcities, which makes the rice sector vulnerable to corrupt practices and resistant to policy changes. 'The political logic of scarcity is strikingly opposite to a logic of productive capabilities development and accumulation, whereby scarcity is reduced and power becomes more evenly distributed across several organisations' (ibid: 9).

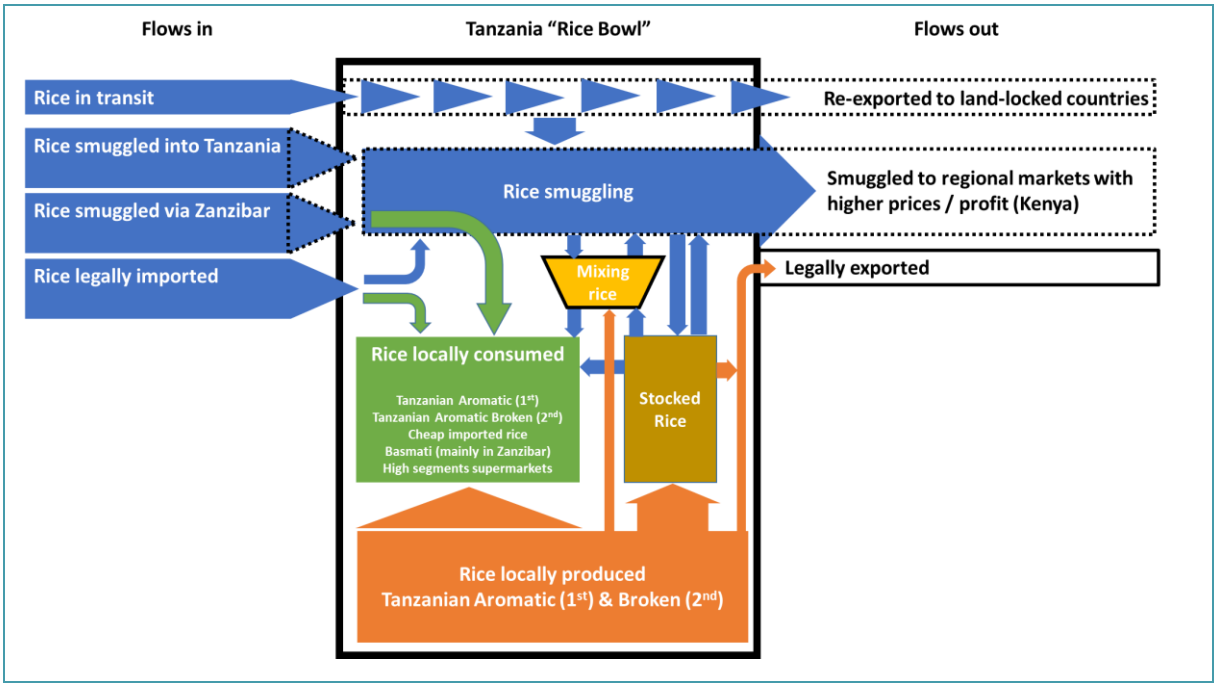
However, the political logic and processes of scarcity are not the same across key commodities like sugar and rice. In Tanzania, specific features of rice make its political economy and rent-seeking processes different from that of sugar. The scarcity of sugar in Tanzania is real, has lasted for decades and generates specific rent-seeking processes driven by the few major producers that represent considerable obstacles to industrialisation. Rice is different. During recent years, rapidly growing demand for rice has been met by even faster growth in production, especially by large numbers of smallholders. This has enabled Tanzania to become self-sufficient in rice at the aggregate level and implies that rice scarcity has disappeared by this matching of demand and supply. Nevertheless, smuggling of rice persists and for some years has even picked up pace. The co-existence of production success (leading to self-sufficiency) and the persistence of smuggling is a political economy puzzle.

To explain this puzzle, we need to disaggregate the self-sufficiency into its component parts: it is the sum of domestic production actually sold in the domestic market, plus various legal and illegal trade flows in and out of the country. And the important point is that each part may generate rent-seeking opportunities depending on the country's political economy (i.e., what traders can get away with vis-à-vis the authorities).

Figure 1 shows the flows of rice entering and exiting the Tanzania 'rice bowl'. Locally produced rice can be sold for local consumption, legally exported or smuggled out of the country. At the same time, legally imported rice may either be used for local consumption or be rice in transit for re-export to other countries. Imported rice can also be smuggled into the country for local consumption or smuggled out to other countries. Further complications arise if cheap imported rice is mixed with locally produced rice and sold at a higher price for local consumption or export.

Obviously official figures on rice trade cannot quantify these flows, but they can point to inconsistencies. The triangulation of these data inconsistencies with several interviews conducted between 2017 and 2019 have largely confirmed the existence of these flows and rent-seeking processes. Thus, self-sufficiency at the aggregate level can co-exist with substantial legal and illegal imports and exports driven by real, perceived or artificial scarcity in Tanzania and/or its neighbouring countries.

Figure 1. The Tanzania 'rice bowl'



Source: The Authors.

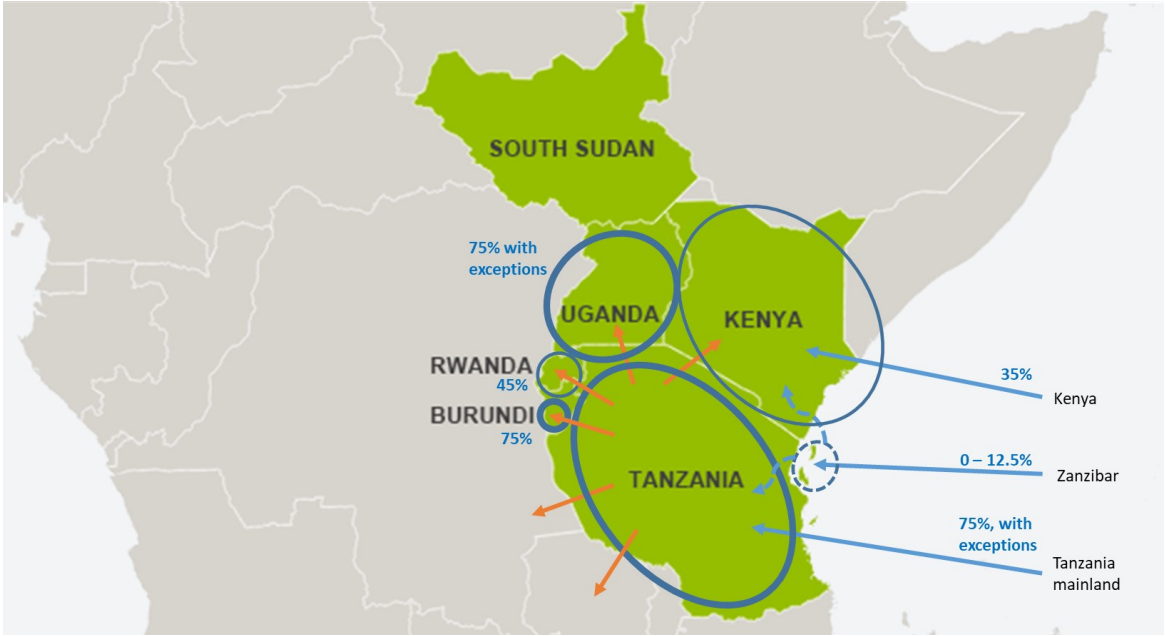
Figure 2 illustrates another key feature of the Tanzanian rice sector, namely that it is linked to rice markets globally and in surrounding countries. Each market applies regulatory trade measures – sometimes by the country itself, but often by the free trade areas or the customs union to which a country belongs. Such regulatory measures include import duties (shown in Figure 2), import duty exemptions, export and import bans, preferential access or buying commitments. The management of these measures is widely contested across countries, often resulting in reciprocal accusations of misreporting of trade and production volumes as well as disputes around rules of origin.[3]

Sometimes, these conflicts are unintended and simply arise from the introduction of contradictory measures between overlapping trade arrangements. For example, Tanzania is both part of the free trade area of the Southern African Development Community (SADC)

[3] For example, in September 2018, the Kenyan government stopped imports of rice from Tanzania over claims of poor quality and packaging. The matter was taken up by Tanzania's Ministry of Foreign Affairs (see Mwangi, 2018). At the end of the same year, several other conflicts were brewing (see Musoke, 2018).

and of the custom union of the EAC; similarly, Kenya is both part of the EAC and the Common Market for Eastern and Southern Africa (COMESA). Different arrangements within these overlapping blocs respond to conflicting interests at national and regional levels. In other cases, even when agreements are reached, a lack of capacity to implement measures and the political economy challenges of enforcing them open the way for complex processes of corruption (Andreoni et al., 2020: 8). Andreoni and Tasciotti (2019) discuss the aggregate impact of the EAC on increasing smuggling in the region.

Figure 2. Official import duties on rice in the EAC under the CET 'Sensitive Item' regime



Source: The Authors.

Furthermore, Figure 2 helps us understand that real scarcity of rice in a neighbouring country may trigger trade flows in or out of self-sufficient Tanzania. Traders may, for example, smuggle rice into mainland Tanzania or Zanzibar in order to then smuggle it out to another country where scarcity is real – as is the case for all of Tanzania's neighbours. Traders may also sell it in the domestic market (or mix it with domestic rice and re-sell the increased volume with a higher mark-up). The choice depends on the political and economic costs compared to the rents that can be generated. Surprisingly, the rice smuggled into Tanzania and sold locally does not depress prices significantly: the explanation provided later in this paper is telling for the political economy of Tanzania.

Even though Tanzania may be technically self-sufficient in rice, some policy-makers and powerful traders may still perceive – or want to influence others to perceive – that scarcity exists. One reason why policy-makers may contribute to such perceptions is their legitimate concerns about food security. Such concerns may also induce them to allow imports at reduced tariffs (which, in turn, create rent-seeking opportunities). On the other hand, 'there has been a degree of incoherence between government statements that Tanzania has produced more rice than the country demands and imposition of export bans to ostensibly ensure food security in the country' (CARI, 2017a, 2). Such perceptions are also facilitated by

the poor quality of data on the country's food situation. In 2013, for example, permission was given to import large quantities of duty-free Pakistani rice, but according to CEPA (2016: 83) it was 'based on misleading local price information (pricing data was used only for the premium market segment, which does not reflect pricing for the majority of consumers)'.

A third possibility for creating perceptions of scarcity is that large importers, 'presumably with reference to an emerging scarcity of rice', may apply for permission to import at reduced rates (Cambridge Economic Policy Associates, 2016, 83). Such trader-induced perceptions of scarcity may sometimes be amplified by sponsored media reports and by the absence of timely and accurate data: 'the actual amount [of rice] that can be traded both domestically and regionally is never clear' (FEWS NET, 2018: 12).

The bottom line is that scarcity generates commodity-specific rent processes that are influenced by the political economy of that commodity in Tanzania as well as in external trade (and power) relations within the EAC customs union. Feasible anti-corruption strategies must therefore fit the *commodity-specific* political economy of rice.

In analysing these issues, we make extensive use of previous work on rent-seeking related to rice. Some studies have documented how this is intimately connected to Tanzania's political economy and its relations to the East African Community (Bünder, 2018; CARI, 2017b; Cooksey, 2016; Gatsby Charitable Foundation and Kilimo Trust, 2012; Ghins et al., 2017; Kilimo Trust, 2014 2017, 2018; Therkildsen, 2011; Whitfield et al., 2015).[4] Other studies describe and analyse the rice value chain and its impact on rice growers and consumers (FAO, 2014; Minot, 2010; Morrissey & Leyaro, 2009; Pernechele, Balié, & Ghins, 2018; Wilson & Lewis, 2015). Case study work on rice farming has also been done (Chanzi, 2016; Herrmann, 2017; Smalley, Sulle, & Malale, 2014; West & Haug, 2017).

We add to this literature by showing that a more explicit political economy perspective on the production and trade of rice has substantial explanatory power. Our extensive use of very detailed data on imports and exports of rice, including transaction-based data from the Tanzania Revenue Authority (TRA) that have not been available to others, adds to the empirical evidence. Official statistics only capture parts of the rice trade flows in and out of Tanzania. Hence, mirror statistics analyses and transaction data are used to map some of these flows (they cannot capture all, as explained later). Finally, we advance a feasible anti-corruption strategy for the sector that fits the commodity-specific political economy of rice.

[4] The Kilimo Trust is a think tank working on agriculture for development across the EAC region. It is funded by several bilateral and multilateral organisations plus major charities.

3. Scarcity in rice: production, trade and regulation

Tanzania's rice sector must be analysed in a broader EAC context to understand the rent-seeking processes involved. To do this, we systematise and present different evidence on both production and trade. Generally, however, 'the Tanzanian statistics on imports are less transparent and more unreliable than those of other EAC countries' (Nzomoi & Anderson, 2013, 12). The discussions below help to situate our analyses of the politics of scarcity made in section 4.

3.1. Rice scarcity in the EAC since the 2000s

Tanzania has been (close to) self-sufficient in rice since the early 2000s (see Figure 3), although annual per capita rice consumption rates have risen fast due to growing per capita incomes and rapid urbanisation. This technical definition means that local production equals local consumption (in section 3.3 we explain why this definition does not capture important trade flows and political economy aspects of self-sufficiency and scarcity).

Sticking to the technical definition of self-sufficiency, Roy-Macauley (2018, 15) estimates Tanzania's self-sufficiency rate to be 92% – the highest in his sample of 24 countries in SSA. Other members of the EAC have much lower self-sufficiency rates: Kenya 10%, Rwanda 50% and Uganda 65%. Zanzibar imports some 75% of the island's consumption.[5]

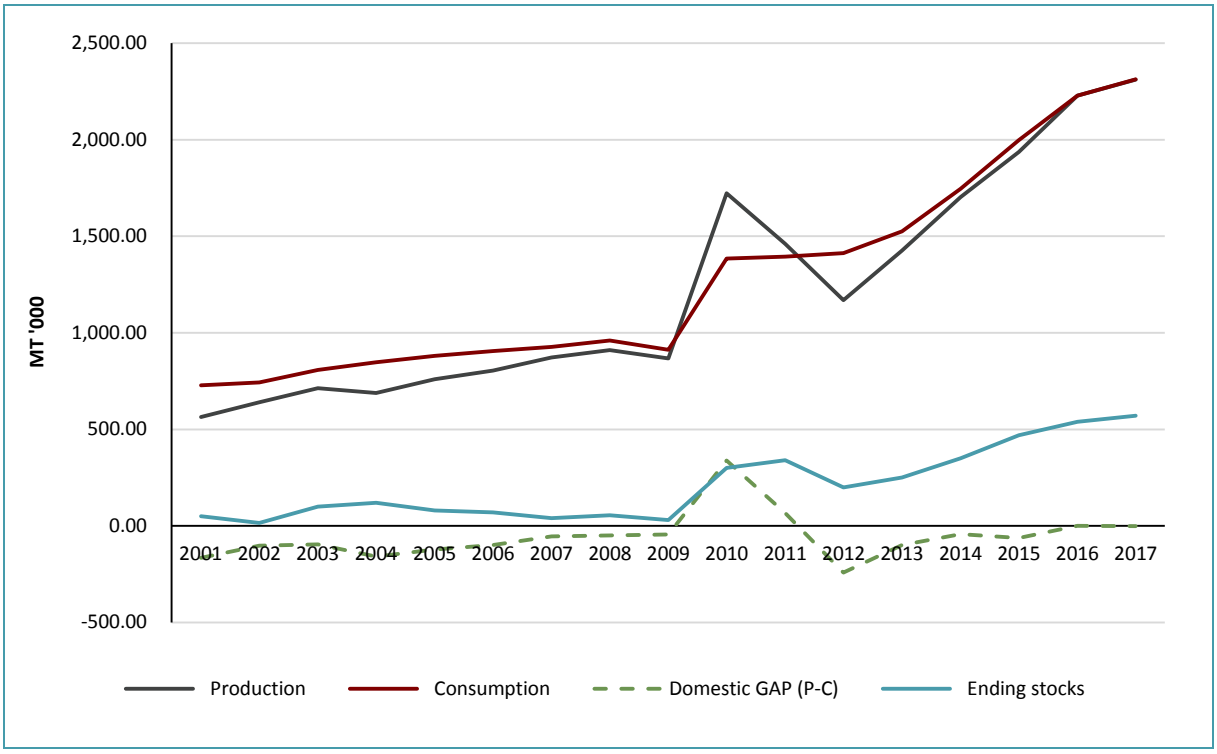
These self-sufficiency rates need careful consideration because official statistics on rice production, consumption and trade are generally poor across the EAC. Tanzania is no exception (Nzomoi & Anderson, 2013; Stryker & Amin, 2012, 44). While several analysts find that Tanzania is (near) self-sufficient, others do not. One reason for this difference is the assumptions used about per capita consumption. The highest of these are not plausible.[6] We therefore concur with the analysts that consider Tanzania to be (near) self-sufficient in rice in recent years, as shown in Figure 3.

[5] Zanzibar is allowed special import privileges as explained below.

[6] The Coalition for African Rice Development (CARD) – using a different methodology than the Organisation for Economic Cooperation and Development (OECD) and Food and Agriculture Organization (FAO)-based Figure 1 – supports the (near) self-sufficiency claim for rice (see https://www.riceforafrica.net/card-countries/group-1-countries/tanzania). So too does Roy-Macauley (2018, 24) mentioned in the text above, the Bill & Melinda Gates Foundation (2012, 8), FAO (2013, 71), Oort et al.(2015, 43), FEWS NET (2018) and (Kilimo Trust, 2013, Table 2). In contrast, the Kilimo Trust (2018, Figure 10) found that Tanzania's deficit grew between 2006 and 2016. This estimate is based on a very high rice consumption per capita figure – 37 kg/year in 2016 – which is three to five times more than in other EAC countries. Price Waterhouse Coopers (2018, Table 35) used the same high per capita figure to arrive at a self-sufficiency rate of around 92% between 2008 and 2017. In contrast, Oort et al. (2015), for example, based their projections on a consumption of 23kg/year for the entire 2000–2012 period.

Figure 3 also shows how the domestic rice gap has gradually closed since 2012. The accumulating 'ending stocks' since 2001 are mainly a result of imports because a significant surplus of domestically produced rice only happened in 2010.

Figure 3. Rice gaps and stocks, 2001–2017



Source: The authors based on OECD/FAO's database. https://stats.oecd.org/Index.aspx?datasetcode=HIGH_AGLINK_2017#

3.2. Rapid increases in production

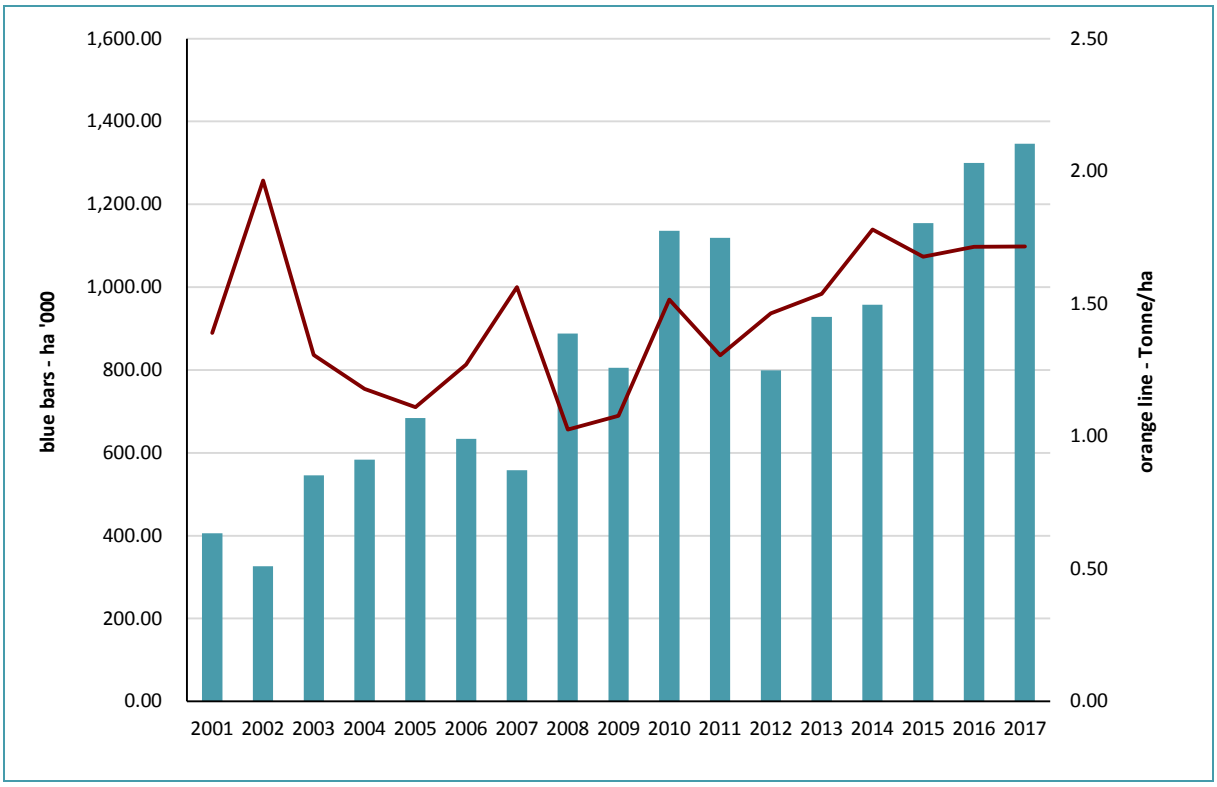
Tanzania produces the largest volumes of rice in SSA after Madagascar (Makundi, 2017) and rice is now the third most consumed crop in the country (MAFAP, 2018). Paddy is Tanzania's second most important crop in terms of production value – some 580 billion Tanzanian Shillings (Tsh)/year were sold between 2014 and 2017 (World Trade Organisation, 2019, Table 4.1).

Rice production quadrupled from 2001 to 2018 largely due to an absolute increase in the number of smallholders growing it, from 1.2 million smallholders in 2001 to 1.8 million in 2018 (Wilson & Lewis, 2015, 1). This is consistent with the trend shown in Figure 3, and reflects a tripling of the area cultivated with paddy between 2001 and 2017 as well as yield increases of 20% during that period (Figure 4).[7]

[7] According to CEPA (2016: 55–56), yields were higher than those presented in Figure 4: they rose from 1.9 metric tonnes (MT)/ha in 2006 to 2.8 MT/ha in 2013. Large-scale farmers can reach 8 MT/ha or more on irrigated land.

Smallholders cultivate three-quarters of the area planted with paddy on rain-fed land, while an additional 20% of paddy land is irrigated. Only some 6% of Tanzania's rice is produced by large-scale commercial farms (Cambridge Economic Policy Associates, 2016, 56).[8]

Figure 4. Rice yield (Tonne/ha) and harvested area (ha '000)



Source: The authors based on the OECD-FAO database. https://stats.oecd.org/Index.aspx?datasetcode=HIGH_AGLINK_2017#

The central role of smallholders in the increases in rice production is consistent with analyses of the transformation of Tanzania's agriculture sector. Wineman et al. (2020) found that small-to-medium-scale farms and small farm-focused, commercialised farms (what we call 'smallholders' in this paper) play an increasingly prominent role in the production increases in Tanzanian agriculture. Likewise, in their longitudinal study on Tanzania, Ponte and Brockington (2020) identified a diversity of rural transformation processes that were fuelled by small-scale rather than large-scale agriculture and externally induced 'green revolutions'.[9] Long-term observers of rural Tanzania have, for example, noted how smallholders increasingly use cheap irrigation equipment imported from China to increase the production of paddy and other cash crops.[10]

[8] Production and investment figures are not available for such commercial farms.

[9] See also Coulson (2016).

[10] As noted during interviews with two researchers during 2019.

But the government also introduced several initiatives to increase agricultural production in the aftermath of the global food crisis in 2008, some of which specifically focused on rice.[11] First, Tanzania – as in other EAC member countries – established import tariff regimes to protect rice from cheap imports (see section 3.4). Moreover, Tanzania launched a National Rice Development Strategy (NRDS) in 2009 that aimed to double rice production by 2018 to improve food security and reduce poverty.[12] That goal was surpassed by a wide margin, as shown in Figure 3.

Finally, the government made available additional budgetary resources for rice-related infrastructure. During the 2005–2015 period, around 75% of Tanzania's commodity-specific government expenditures focused on food crops (rice, maize and other cereals), which were prioritised compared to other agricultural commodities (Pernechele et al., 2018: 47 and Figure 35). In addition, the government invested in rural infrastructure (roads, irrigation, etc.) and in input subsidies. The FAO (2014: v) speculated that rice production has 'generally increased since 2005, possibly due to a voucher-based input subsidy programme implemented from 2007/08 to 2013/14'.[13]

This being said, however, Tanzania spent less on agriculture out of its total government expenditure in 2015 than in 2005 (Pernechele et al., 2018: Figure 24).[14] And, on average, some 40% of these expenditures were donor funded (Ibid: Figure 37).[15] We are not aware of any comprehensive evaluation of the impact of these various government initiatives on the observed expansion of rice production.[16]

[11] The information in this section is from Pernechele et al. (2018). In addition to the initiatives targeted at rice, the government also launched the Agricultural Sector Development Programme, which has been implemented in two phases (ASDP-I, from 2006 to 2013, and ASDP-II, from 2018 to 2025). The *Big Results Now* initiative began in 2013, which also targeted rice production.

[12] The NRDS aimed 'to improve farmers' access to improved varieties and seed systems; enhance fertilizer marketing and distribution; accelerate irrigation development and investment in water control technologies; facilitate access to and maintenance of agricultural machinery and equipment; promote the use of medium-size machines; facilitate access to credit/ agricultural finance; establish credit guarantee schemes and an Agricultural Bank; facilitate farmers in forming associations; develop capacity in research and technology dissemination' etc (see https://riceforafrica.net/2-uncategorised/299-the-second-general-meeting-of-card?start=4).

[13] The National Agricultural Input Voucher Scheme (NAIVS) focused on inorganic fertilizer and improved maize and rice seed, and eventually targeted approximately two million farmers (Cooksey, 2012). It was scaled back in around 2014 and replaced by the Fertilizer Bulk Procurement System (Wineman et al., 2020).

[14] A declining share of overall government budget has gone to food and agriculture since 2009 and this is below the minimum 10% target established under the Maputo Declaration (FAO, 2017).

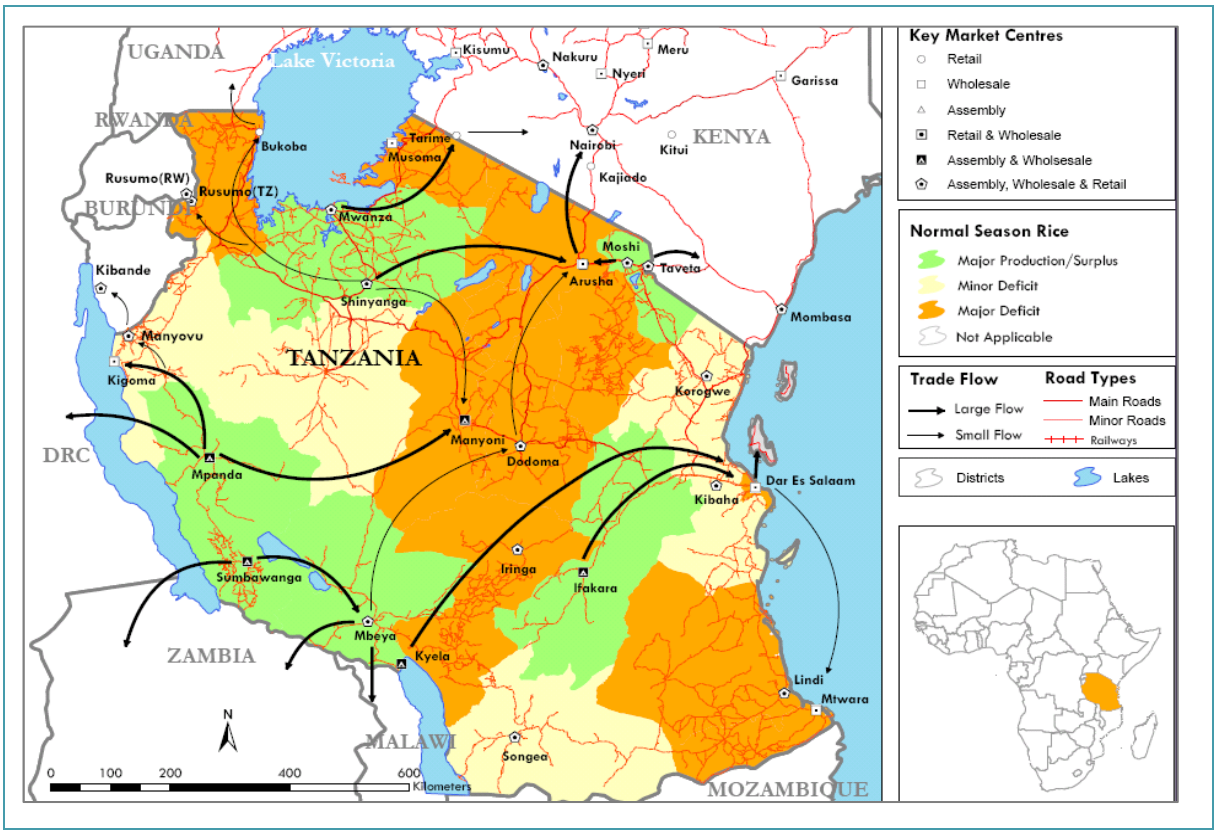
[15] The Kilimo Trust (2018, Tabel 8) lists some of the donor-supported projects.

[16] Investments in irrigation, for example, suffered from operational and maintenance problems although this was not reported by the donors involved (Whitfield et al., 2015, Chapter 8).

3.3. Rice processing and marketing

Two important features characterise surplus rice production in Tanzania. The main rice-producing regions (marked green in Figure 5) are located at a distance from the main domestic consumption market, which means that marketing costs to Dar es Salaam are high.[17] Yet these regions are close to the borders of neighbouring countries, which facilitates legal and illegal cross-border trade. A third feature of rice flows is not shown in Figure 5, however: substantial volumes of rice are smuggled through small (illegal) ports on the mainland along the coast to Zanzibar and at numerous border points with neighbouring countries.[18]

Figure 5. Tanzania: rice production areas and trade flows



Source: USAID (2010, 18).

Figure 6 shows a simplified illustration of the rice value chains, yet it is still apparent that the value chains are complex and multi-layered.[19] Imports, including imports through Zanzibar, are a prominent feature of the Tanzanian value chain – as are exports. These flows are further discussed in section 4.

[17] Grain marketing costs typically account for 50–60% of the price paid for foods (Sitko, Jayne, Burke, & Muyanga, 2017, v). Value chain processes therefore directly influence the production incentives for rice growers.

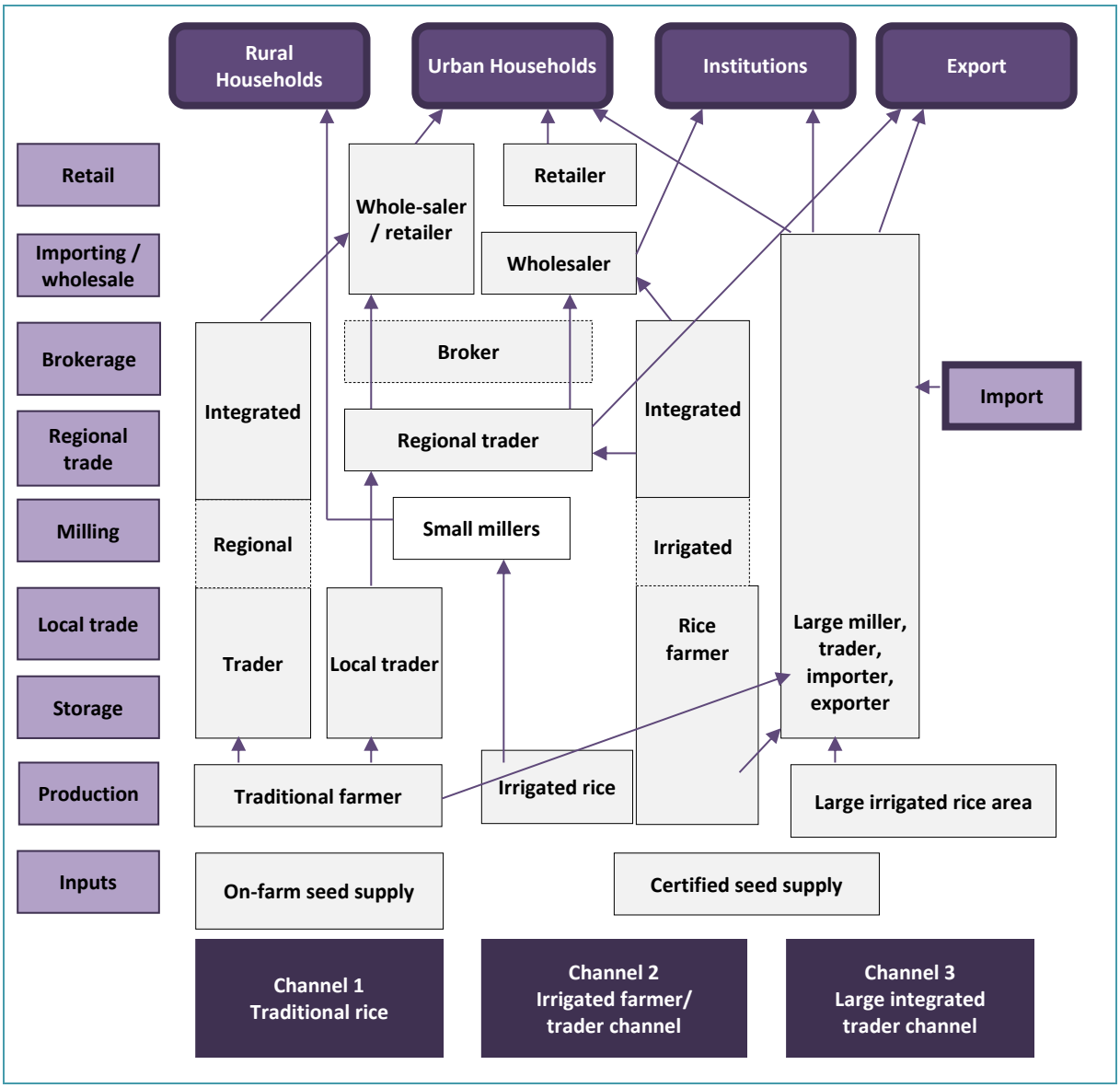
[18] In 2018, the TPA found 134 illegal ports and 58 unregistered airstrips across the country, which were used for smuggling contraband goods and caused substantial losses to government revenue (Kandoya, 2018).

[19] For example, Wilson (2018).

On the production side, smallholder-grown rice produced by the 'traditional farmer' and the 'irrigated farmer' is typically marketed by small local traders and local millers who sell to wholesalers that supply urban markets. Street sellers typically dominate retail marketing here. In the 'large integrated trader channel' production is dominated by six large farms. Five of these own their own mills, several of them are closely involved in domestic distribution, and at least one also exports and imports rice. For this group of companies, the separation of production, distribution and trade is blurred.

Most processors in this value chain use small diesel-operated mills to produce rice flour and milled rice. Such mills account for the production of around 80% of these products, while the medium-sized processors produce 15% and large processors just 2% (Kilimo Trust, 2013, 38). Rent-seeking in the value chain is analysed in section 4.1.

Figure 6. The rice value chain



Source: Adapted from USAID (2010).

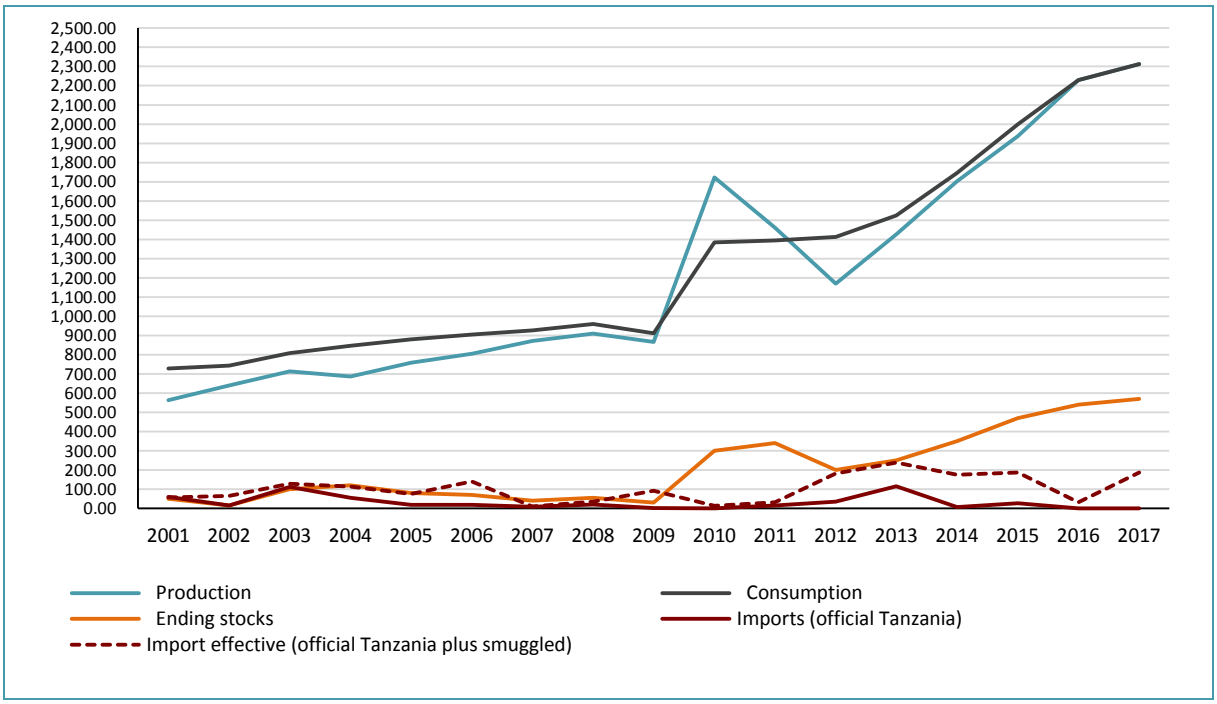
3.4. Official imports and exports

Rice is among the 20 most traded commodities within the EAC (East African Business Council, 2020, 16), and to this should be added rice trade *beyond* EAC borders too. Yet these flows of rice in and out of Tanzania are only partly captured by official statistics, as explained in section 4.

We begin here by focusing on these official data – that is, data reported by Tanzania as an importing country. Figure 7 shows that *official imports* into Tanzania (which includes rice in transit) were relatively modest from 2001 to 2017 – peaking at 7.6% of consumption in 2013, one year after a large rice gap in 2012. From 2014 onwards, official imports fell to almost nothing and this is consistent with the observed reduction in the domestic rice gap shown in Figure 3. The share of imports has typically been small given high levels of local supply and protective policies (Ghins et al., 2017, 7). However, if we consider the official amount of rice reported by Tanzania as an importing country *as well as* the amount of rice exported to Tanzania as declared by exporting countries we find signs of underreporting. In Figure 7 the dotted line captures the *effective imports* of rice into Tanzania, when exporting countries' reports are considered. A more detailed discussion on these mirror statistics is developed in section 4.

Figure 7 also shows that 'ending stocks' grew from 2001. This must be the result of imports (official and/or smuggled) primarily because a significant surplus of domestically produced rice only happened in 2010, while the rice gap slowly closed from 2014 onwards. It is significant that the increase in ending stocks after 2014 can only be explained by cumulated smuggling between 2011 and 2015.

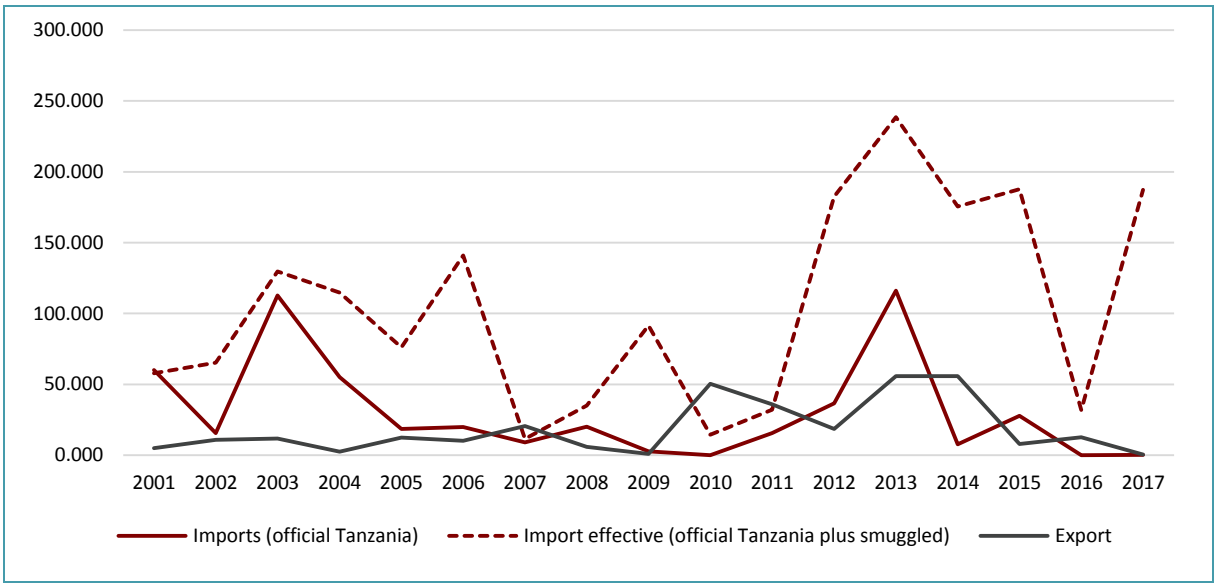
Figure 7. Production, consumption, official imports and smuggled rice, 2001–2017 ('000 MT)



Source: OECD-FAO database and the authors based on data from the United Nations Conference on Trade and Development (UNCTAD).

Volumes of official Tanzanian exports of rice are relatively small compared to total production according to official Tanzanian statistics. Exports mainly consisted of paddy and husked (brown) rice. As shown in Figure 8, annual official exports were below 10,000 MT between 2001 and 2009, rising to some 35,000 MT/year from 2010 to 2015 and then falling to around 10,000 MT/year from 2015 onwards (see also FAO, 2014, Figure 5). Most of this exported rice was sold to EAC member countries (see Figure 12 in section 4). The official exports make up a very small share of total rice production in recent years (less than 0.5%). These data do not include informal trade and smuggling across Tanzania's borders, which can be quite substantial (and are shown in section 4).

Figure 8. Official exports and imports (official and effective), 2001–2017 ('000 MT)



Source: The authors based on UNCTAD data.

3.5. Trade informality and contradictory regimes

Multiple international, national and subnational trade regimes create lucrative smuggling opportunities and cause conflicts among EAC members and political factions within them. Indeed, the political economy of trade in the EAC region has been dramatically affected by continuous bilateral accusations of undercutting each other's agricultural sectors and industries with violations of import quota, rules of origin (ROO) and import duties for different categories of commodities.

3.5.1. Inadequate or contradictory information on trade regimes

Imports and exports of rice are regulated by the EAC as well as by its individual members. Added to this, member countries have also joined either the COMESA (Burundi, Kenya, Rwanda and Uganda) or the SADC (Tanzania), each of which has different trade regulations.[20]

[20] Southern Sudan became the newest member of the EAC in 2016 and only belongs to that one trade area.

Accurate information about these regulations at specific points in time for a particular country is not readily available from official EAC or member-country government sources (Vitale, Morrison, & Sharma, 2013, footnote 1). Instead, it must be collated from various sources: the EAC Gazettes, annual National Budget Speeches, specific studies and the media. The TRA's website and annual publication *Taxes and duties* do not provide comprehensive, up-to-date information on the rice trade regime either. Moreover, the publication of Tanzania's national food balance sheet by the Ministry of Agriculture is infrequent and often late, which makes it difficult to get accurate and timely information about rice scarcity (FEWS NET, 2018). Obviously, this makes it difficult to find relevant, time-specific information about applicable rules and regulations.[21]

3.5.2. Confusion and competition over the CET

All EAC decisions on tariffs and trade regulations are intergovernmental and are made by consensus by the EAC's Council of Ministers – or sometimes even by the Heads of States. The EAC Secretariat does the technical preparations. Arrangements for a CET on imported rice into the EAC were made by Kenya, Tanzania and Uganda on the establishment of the EAC customs union in 2005. At this time the EAC classified rice as an SI and applied high import tariffs – initially at 75%. After joining the EAC in 2007, Rwanda and Burundi both began applying a CET in 2009.

One basic aim of the CET on rice is to protect local industry against cheaper imports and to create price incentives for large and small farmers to increase production. Consumer prices increase in the short run, but they should eventually fall as the local industry becomes more competitive. Moreover, the EAC's single customs territory allows the duty-free circulation of goods produced within it if ROO are complied with. Thus, in principle, rice produced in one country can be freely sold to other member countries to encourage intra-regional trade and competition (WTO, 2019).

However, the CET has changed over time and across countries, because member countries can seek derogations due to real or perceived domestic scarcity of rice. These are 'usually granted, no matter if the criteria are fulfilled' (Bünder, 2018: 11) because the consensus-based decision-making in the EAC encourages a member to block decisions if it does not get its will. Bünder adds that the CET negotiations are rarely based on evidence but on a quid pro quo of national exemptions. This has partly undermined the original intentions of the CET.

[21] To this should be added Technical Barriers to Trade (TBT). WTO Members submitted 1,329 new 'regular' notifications of TBTs from 1 October 2019 to 15 May 2020. The Members notifying the most measures – covering around 60% of all new regular notifications – were Tanzania (152), Kenya (101), Uganda (93), Brazil (91), the United States (90), Israel (66), Rwanda (58), China (54) and the European Union (52). Of the 1,329 new regular TBTs, the majority indicated the protection of human health or safety as their main objective – but they could also aim to restrict trade (World Trade Organisation, 2020, 54). In addition, a number of Non-technical Trade Barriers (NTBs) restrict official trade between EAC member countries (World Bank & East African Community Secretariat, 2016).

Thus, prior to the start of the customs union 2005, Tanzania had an import duty rate of 25%, which was then raised to 75% (as in Uganda) as per EAC agreement.[22] In 2013, the CET was reduced to 15% and subsequently raised to 35% from 2014 onwards (Pernechele et al., 2018, 76). However, the changes were not recorded in the EAC Gazette (Bünder, 2018, Table 1) as they were supposed to be.[23] Nor does the information above square with the 10% CET rate announced in the Tanzanian Budget Speech for 2013/14, with reference to a shortage in the domestic market. When asked about the presently applicable rate, TRA referred to the official EAC document on tariffs (East African Community, 2017),[24] which states that the applicable rate is 75%. In practice, import duty policy in Tanzania – as in other EAC member countries – is made on an ad hoc basis (Argent & Begazo, 2015, 21). As the Tanzanian authorities do not publish the evidence used to reach such decisions, it is impossible to ascertain the extent to which they are based on reliable information about rice scarcity.

Zanzibar, which imports two-thirds of its rice, was permitted to apply a lower tariff of 12.5% from 2005 when the EAC customs union began. Obviously this creates a big incentive to ship imported rice through Zanzibar to the mainland (Tanzania SERA Project, 2016b, 119)[25] and to Kenya, which has been exempt from the 75% rice tariff from 2005. Kenya imports substantial volumes of rice from Pakistan, which is a main export market for Kenyan tea. When Pakistan threatened to retaliate with a high import tariff on Kenyan tea, the EAC agreed to lower the 75% tariff on Kenyan rice imports to 35%.[26] Kenya also imports rice from COMESA at a low import duty rate.

The CET rate for Rwanda has varied from 30% to 45% during the last ten years.[27] Yet the Ugandan government in particular pushed for the 75% rate back in 2005 to protect its major irrigated rice investments made together with Tilda, a multinational company (Therkildsen, 2011, 23). Uganda's position on CET started to crack in 2015, however, when one politically well-connected importer was permitted to import at very reduced rates. Subsequently, Uganda has applied a much lower rate despite protests by the influential Rice Millers Council (Joughin, 2019, 6-7).

[22] Tanzania is also a member of the SADC and applies a rate of 0–15% on rice imports from its members (Gatsby Charitable Foundation and Kilimo Trust, 2012, 31).

[23] This causes confusion about CET rates. In contrast to MAFAP, for example, the Tanzania SERA Project (2016a) writes that the CET was 25% in 2016, while it was 75% according to the United States Department of Agriculture's Foreign Agricultural Services (2018, 10). This is also the rate applied at present according to a TRA official interviewed on 9 December 2020.

[24] Interview, TRA official, 9 December 2020.

[25] Another sources indicates that the import tariff for Zanzibar is 25% (USAID, 2018, 9). According to a TRA official, the rate varies between 0% and 25% depending on the food security situation (interview, 9 December 2020).

[26] The Kenyan derogation was initially gazetted as a two-year exception only for Pakistani rice. This was a clear violation of Kenya's obligations to the WTO, therefore in 2010 the Kenyan exception was extended to all trading partners (Gatsby Charitable Foundation and Kilimo Trust, 2012, 30).

[27] As recorded in the EAC Gazette.

3.5.3. Navigating rules for rice in transit

For rice in transit (e.g., landed in the port of Dar es Salaam), the duties and taxes are charged by the destination country and therefore cleared through the Tanzanian Customs as duty free. However, the importer or their agents execute a bond with the Commissioner of Customs to cover the duties and taxes chargeable on the rice. This bond is guaranteed by a bank or an insurance company in case the rice in transit goes missing.[28]

An additional complicating factor is that neighbouring countries also make their own trade regime changes, which Tanzania-based importers and exporters must navigate for rice in transit. Together, this contributes to a volatile and opaque regulatory regime for trade in rice across borders in Eastern Africa.

3.5.4. Confusion caused by decentralised governance

Accurate time-bound information on Tanzania's national and subnational regulations on trade – and changes made to these over time – is also difficult to obtain because data is not collected by a central agency and/or made publicly available.[29] Consequently, Table 1, which focuses on tariffs, licenses, import and export bans and various regulations between 2010 and 2018, is only partial (albeit more comprehensive than those found in other publications). However, it does show that changes to the Tanzanian import-export trade regime are frequent.[30] The imposition of import and export bans is especially striking too.

One well known incidence occurred in 2012, when the government authorised the importation of 40,000 MT of duty-free Asian rice but then went on to ban duty-free rice imports in March 2013 'following complaints from local producers and donors' (Cooksey, 2016: 36).[31] In the aftermath, Kilombero Plantation Limited (KPL) – the largest and only foreign-owned farm among the six largest rice farms in Tanzania – struggled to make its rice production profitable. The company, which also grows maize, later suffered significant losses due to an export ban on maize in 2017.[32] KPL stopped operating by the end of 2019.

[28] Interview with TRA official, 9 December 2020.

[29] The administrative procedures of trade are not analysed. To import food, for example, takes 33 steps, involves 8 different organisations, and requires 38 documents; see https://trade.business.go.tz/procedure/540?l=en.

[30] This is not a new phenomenon. In the ten years prior to 2014, Tanzania introduced six separate food export bans (Kilimo Trust, 2014 , 24).

[31] The actual amount involved could be much bigger. In 2013 116,000 MT of rice was imported according to official statistics. However, 176,000 MT may have been imported according to USAID (2018, 9). The difference – some 60,000 MT – may have been smuggled into the country piggy-bagged onto the permitted duty-free imports. This chain of events is also described by the Rice Council of Tanzania (2015).

[32] Letter from Coleman Carter, Chief Executive Officer, to the Oakland Institute, 26 May 2015; Interview with KPL manager, 4 June 2018.

Table 1. National-level changes in Tanzania's regulations for international trade in rice (2010–2018)

Change in regulation	Frequency
Import bans or export bans imposed or lifted	10
Decisions on trade regulations specifically addressing scarcity	2
Permission to import duty free	1
Changes to the CET announced in budget speeches	3
Changes to the CET announced by Tanzania in the EAC Gazette	0

Source: Compiled by the authors[33]

Table 1 does not list regulations at the subnational level, including the district crop cess that is charged on grain 'exported' from a district. The rates for this vary between 1% and 5% from district to district, and presently apply to quantities above 1 MT. Nor does the table include the numerous police checks at district borders or along major transportation corridors where cesses are collected, and where transporters may pay bribes to avoid costly delays and/or avoid compliance with load limits and other regulations (Short, Barreiro-Hurle, & Bali, 2014, 452). And export bans imposed by regional or local government authorities are not shown in Table 1 either. Indeed, 'there is often great confusion about when a ban is or is not in place. The President may make a formal announcement but implementing orders may not reach border posts and other agencies for some time – if at all. In the meantime customs, police, and other officials will act as if the ban is in effect' (Stryker & Amin, 2012, 30).

[33] Based on Budget Speeches, the EAC Gazette and systematic searches of the media through Google Alert. However, figures are indicative only. Regional and local government export bans at borders are, for example, not included due to lack of information.

4. Rent-seeking processes: the political economies of rice

The analyses above are largely based on official statistics. They show that increased production largely matches growing consumption of rice and that for the most part Tanzania has become self-sufficient in rice (especially since 2014). However, as FEWS NET (2018, 12) observes, although the country is 'typically a surplus producer of key staple foods [including rice] that are also in high demand in the neighbouring countries including Kenya, Burundi, Rwanda, DRC and Malawi, … *the actual amount that can be traded both domestically and regionally is never clear*' (our emphasis). Against this backdrop, two important findings are presented below.

The first is that rent-seeking in the domestic rice market is no longer driven by a rice gap – as it was in the past – but by rent-seeking on the part of major companies engaged in smuggling rice into Tanzania. Smaller rent opportunities also arise from frequent changes in the Tanzanian trade regime for rice (e.g., export bans, import bans, temporary permissions to import duty free when perceived scarcity arises, etc.).

Secondly, rent-seeking in Tanzania's export markets is driven by the real scarcity of rice in all EAC member countries (except Tanzania), by differences in trade regimes across the EAC (whose compliance cannot be enforced by the Tanzanian authorities), and by rice prices in EAC member countries that are consistently higher than in Tanzania. Some of these Tanzanian exports are based on illegal imports into Tanzania and (possibly) by illegal exports of rice in transit diverted away from their designated countries.

4.1. Rent-seeking in the value chain

The rice value chain reaches beyond Tanzania's borders and involves many different groups (see Figure 6, although some important stakeholders that also influence the workings of the value chain are not shown).[34] We have limited knowledge about how the value chain changes over time,[35] but the multiplicity of stakeholders presents opportunities for rent-seeking.

Among the main actors in the value chain are the big wholesalers. In the domestic markets they buy and sell in large quantities (mostly in collaboration with brokers) and are involved

[34] Among these are the Rice Council of Tanzania, the Private Sector Foundation, the TRA, regional and local governments, the Ministry of Agriculture, the President's Office and the Prime Minister's Office, and the Zanzibar Government and its revenue authorities, etc.

[35] 'We know of no systematic longitudinal study of value chains that could provide nationally or even regionally representative estimates of the rate of growth in agricultural wholesaling, retailing and processing investments over time' (Wineman et al., 2020: 706).

in both import and export trade. Just like other traders, wholesalers store rice to speculate in price fluctuations. In Dar es Salaam, most wholesalers and brokers are based in the Tandika area where around 20 large-scale traders and over 150 small-scale traders operate. They are the rice price-makers in the urban conglomeration.

There are also large traders with spacious godowns or warehouses in other areas of the city who procure locally and either import, sell to urban markets and designated institutional markets, or export. The Export Trading Co., Mohamed Enterprises Ltd, Zakaria Enterprises and Olam Trading Co. ltd are among the key players here (Match Maker Associates, 2010, 8). Such companies have considerable market power and political influence: Kilimo Trust (2014: 44) refers to the 'vested interests' of rice importers 'who currently profit from high mark-ups under the CET policy regime and … oppose efforts to liberalise intra-regional trade'. While Stryker and Amin (2012, 41) explain: 'rice is being imported by five large companies … it appears that these very large traders are on very good terms with government and do not bother with permits at all'.

In Zanzibar, around 75% of the rice consumed is imported primarily by only five large companies. The Tanzania SERA Project (2016b: 23) commented that these firms have 'the market power to control prices and prevent the entrance of new companies. The tariff being charged on imports was not being correctly calculated and import receipts were less than authorized'. Zanzibar's CET rate on imported rice is also lower than the mainland's (as explained in section 3.5), and consequently the incentives to re-export or smuggle rice imported through Zanzibar into the mainland (or other EAC countries) are substantial.

These powerful companies at the top of the value chain operate in both domestic and international markets. But, despite this, 'Tanzania's rice market is largely competitive with production and marketing dominated by many small scale producers and traders' (FEWS Net, 2018, 5). As Figure 6 illustrates, a multitude of small- and medium-scale millers, local and regional traders, and retailers dominate rice production and distribution. The smaller companies (including individual traders) deal in a range of local rice varieties with specific tastes and prices; small millers may process around 80% of the paddy into rice flour and milled rice, while large millers only process limited quantities (see section 3.3).

Informal trade through the so-called *panya* [rat] routes across Tanzania's land borders also drives rent-seeking in the rice sector. This trade varies 'from very small quantities moved by bicycle to large volumes trucked over long distances' (FEWS NET, 2020: 1).[36] This traffic can generate rents as '[c]orrupt local government officials … benefit from the complex export licensing regime and the opportunity to tax shipments passing through their districts' (Kilimo Trust, 2014 , 44).

[36] Rice or paddy carried across a border by individuals is not considered illegal export.

Finally, some studies claim that domestic varieties of rice are 'implicitly protected by consumer preference of its perceived better quality … while rice producers increasingly complain that imported rice adversely impacts the price of domestic rice' (Lazaro, Sam, & Thompson, 2017, 187). Their analyses indicate the salience of the former view: Tanzanian consumers prefer domestic rice varieties, and the substitutability between domestic and imported rice varieties is weak.[37] The same observation is made by Minot (2010, 86) and Wilson and Lewis (2015, 17). Domestic aromatic varieties of rice therefore compete effectively with Asian imports on quality terms. Moreover, the share of imports has typically been small given high levels of local supply and protective policies (Ghins et al., 2017, 7).

All this adds up to the view that there is some competition in the rice value chain. Furthermore, there is some protection from cheap imported rice, which leaves smallholders with some leeway to sell their crop at an attractive price as USAID (2010, 17) has also noted. These observations are further supported by the positive Market Development Gap (MDG) of rice in Tanzania between 2005 and 2016 (Pernechele et al., 2018, Table 5).[38] This positive MDG indicates that price incentives for rice growers still exist despite market inefficiencies in the rice value chain.[39] Furthermore, estimates of the Nominal Rate of Protection (NRP)[40] over the same period show that the 'policy and market environment created price incentives to rice production. … Rice producers were protected from competitive rice imports by a 75 percent Common External Tariff from 2005 to 2013, which was reduced to 35 percent from 2014 onward' (Morrissey and Leyaro, 2009: 321).[41] This has helped to foster an increase in production; '[h]owever, the majority of tariff protection is captured by wholesalers in Dar es Salaam' (MAFAP, 2018, 1).

These findings are consistent with the closing of the rice gap in Tanzania documented in section 3.1. The big picture is that rice growers have had a price incentive to grow rice, but

[37] Lazaro et al.'s survey was conducted in June 2014. The average prices for high- and low-quality domestic rice, respectively, were 1,670 Tsh/kg and 1,480 Tsh/kg. The average price of imported rice was 1,030 Tshkg.

[38] MDG measures price disincentives generated by market inefficiencies based on high marketing costs, including prohibitive transport costs and lack of post-harvest support (Pernechele et al., 2018).

[39] In contrast, marketing inefficiencies for maize and cashew nuts, for example, are considerable.

[40] The NRP measures the impact of market and non-market failures on wholesale and farmgate prices/incentives in major markets where domestically produced commodities compete with imports. It is used to assess the effects on prices of direct support to a specific value chain (e.g., fertilizer subsidies) and indirect support through trade policies (e.g., CET), exchange rates (e.g., devaluations) and other macroeconomic or non-agricultural policies. The NRP 'measures the percentage by which the domestic producer price is raised above (if positive) or has fallen below (if negative) the border price (adjusted for market costs, as well as quality/quantity factors), which is considered to be the undistorted reference price of a commodity' . Thus, a positive NRP for rice at the farmgate indicates that the policy environment and market dynamics provide price incentives to produce, while a negative NRP signals that farmers and/or traders receive disincentives in terms of a specific commodity's output prices. See Pernechele et al. (2018, 3-4). Short et al. (2014, 459) provide simplified examples.

[41] The NRP was negative in the 1980s, close to zero by the 1990s, and positive in the early 2000s prior to 2005, when the CET was introduced (Morrissey & Leyaro, 2009, 321).

at the same time wholesalers and other traders have benefited from the government's protection policies (and, as we shall see, from the pricing policies of the larger importers). Nevertheless, 'failing to "protect" producers from widespread exemptions and trade diversion via Zanzibar' and smuggling of rice to neighbouring countries continue to create opportunities for rent-seeking in the value chain, as shown in the next subsections (International Bank for Reconstruction and Development & The World Bank, 2018a, 127).

4.2. Mis-invoicing

New avenues for rents capture, smuggling and illicit financial flows emerged with the establishment of the EAC customs union in 2005. The trade agreements and tariff schedules were supposed to advance intra-regional trade and boost the productive capacities in member countries, but compliance with these arrangements was not uniform, as shown in section 3. This causes conflicts among member countries about non-compliance, ROO and unilateral (often non-transparent) import permissions, as well as the imposition of temporary import and export bans.

As shown by Andreoni and Tasciotti (2019), the introduction of the EAC Customs Protocol contributed dramatically to rent-seeking over the last 15 years through trade mis-invoicing and smuggling. The authors also found that the most common form of mis-invoicing is trade under-reporting to avoid tariff payments for imported goods. Over-reporting is used on a smaller scale to move money out of the country (or for compensating under-reporting of other similar commodities attracting higher tariffs).

Between 2013 and 2017, in Tanzania the cumulative value of under-reporting across all traded commodities amounted to over US$10 billion. Large shipments of goods are particularly prone to trade mis-invoicing and constitute 80% of total smuggling annually. Moreover, smuggling is positively associated with SI commodities such as rice and sugar, because these are very elastic to any change in the import tariff (ibid.).

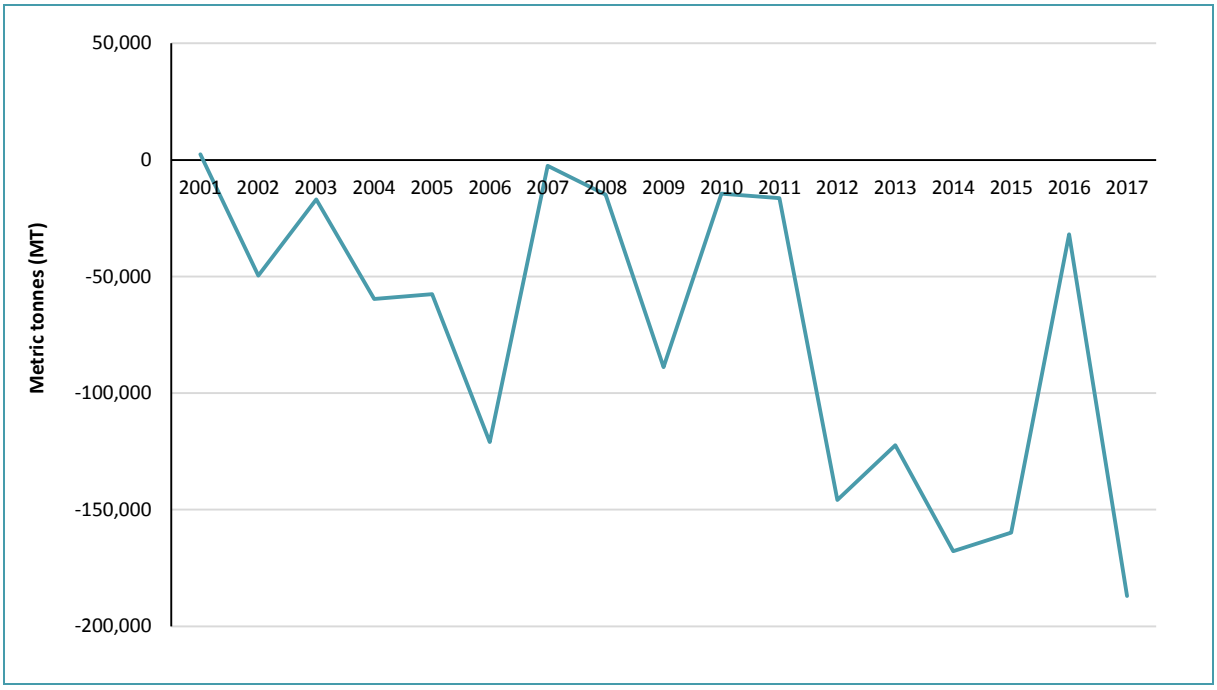
What, then, happened when a 75% CET was supposedly applied to Tanzania's rice imports? According to the Gatsby Charitable Foundation and Kilimo Trust (2012, 19) Tanzania's 'self-reported data [on rice imports] increasingly diverged from mirror data, most likely increasingly underestimating real trade as smuggling increased. Significant quantities of East Asian rice were observed to be available in Dar es Salaam markets but did not appear in official import statistics.' There is also evidence that 'large-scale rice importers based in Dar are importing through the port under a non-transparent arrangement that does not show up in official statistics and results in these imports being sold below the expected cost inclusive of official charges' (Gatsby Charitable Foundation and Kilimo Trust, 2012, 31; Therkildsen, 2011).

This is largely confirmed by our updated mirror statistics analyses. As already shown in Figure 7, smuggling was relatively modest in volumetric terms from 2001 to 2017, making up less than 10% of total domestic rice consumption during that period. The same data are

drawn to a larger scale in Figure 9 below, to give a more detailed picture of the annual variation. It shows that smuggling – with some fluctuation – has increased from 2005/2007 onwards, which is consistent with the findings of Andreoni and Tasciotti (2019) for all traded commodities referred to above.

Moreover, Figure 9 clearly shows that smuggling into Tanzania is quite volatile. This is especially true after 2011, when it picked up and was relatively substantial from 2012 to 2015, dropped significantly in 2016 – the year when president Magufuli took office – but then rose sharply again in 2017 when it amounted to some 8% of total consumption. It is possible that the 2016 dip was the result of Prime Minister Kassim Majaliwa ordering the security organs to tighten measures at border points and along coastal areas to curb illegal importation of rice (*The Guardian,* 2020). For the most part, this smuggling took place during a 20-year period when Tanzania became increasingly self-sufficient in rice. An explanation for this follows below.

Figure 9. Tanzania's rice imports minus global exports to Tanzania, 2001–2017



Source: The authors based on UNCTAD data.

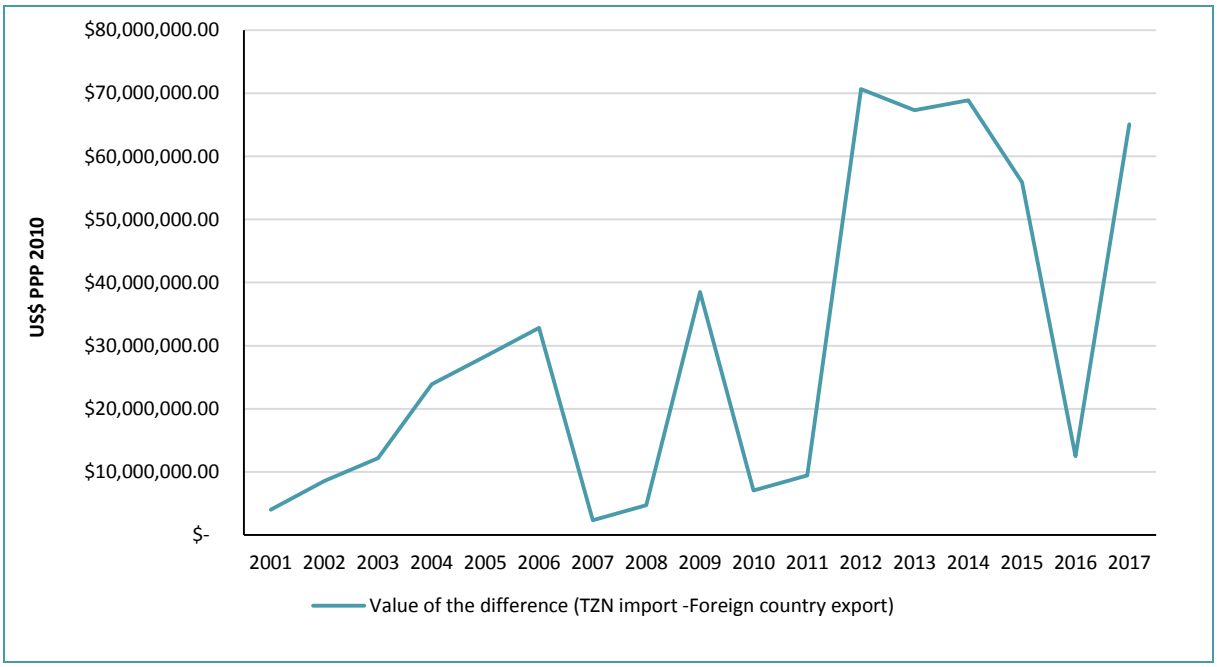
Some of the smuggled rice is imported through Zanzibar, which – according to the TRA – has a CET rate between 0% and 25% depending on the food security situation there.[42] Such exceptions to the CET benefit Zanzibar consumers, according to the island government, but the volumes imported exceed domestic demand on a consistent basis. The smuggling of rice from Zanzibar to the mainland is estimated at 30,000 MT/year, which is 'modest relative to the scale of the import licenses issued to major mainland importers' (International Bank for

[42] Interview with senior TRA official, 9 December 2020. See also section 3.5.

Reconstruction and Development & The World Bank, 2018b, 148).[43] Others think that smuggled rice from Zanzibar is in the realm of 75,000 MT/year but that such large quantities are unlikely to be landed by small dhows (Gatsby Charitable Foundation and Kilimo Trust, 2012, 31); the alternative route is by truck on ferries to the Dar es Salaam port. The bottom line is that smuggling of rice from Zanzibar to the mainland is well-known, but the magnitude of this smuggling remains unknown.

Figure 10 shows the annual value of smuggled rice into Tanzania. For the 2001–2017 period, the accumulated value was around US$512 million (purchasing power parity (PPP) 2010).

Figure 10. Value of smuggled rice, 2001–2017 (US$ PPP 2010)



Source: The authors based on UNCTAD data.

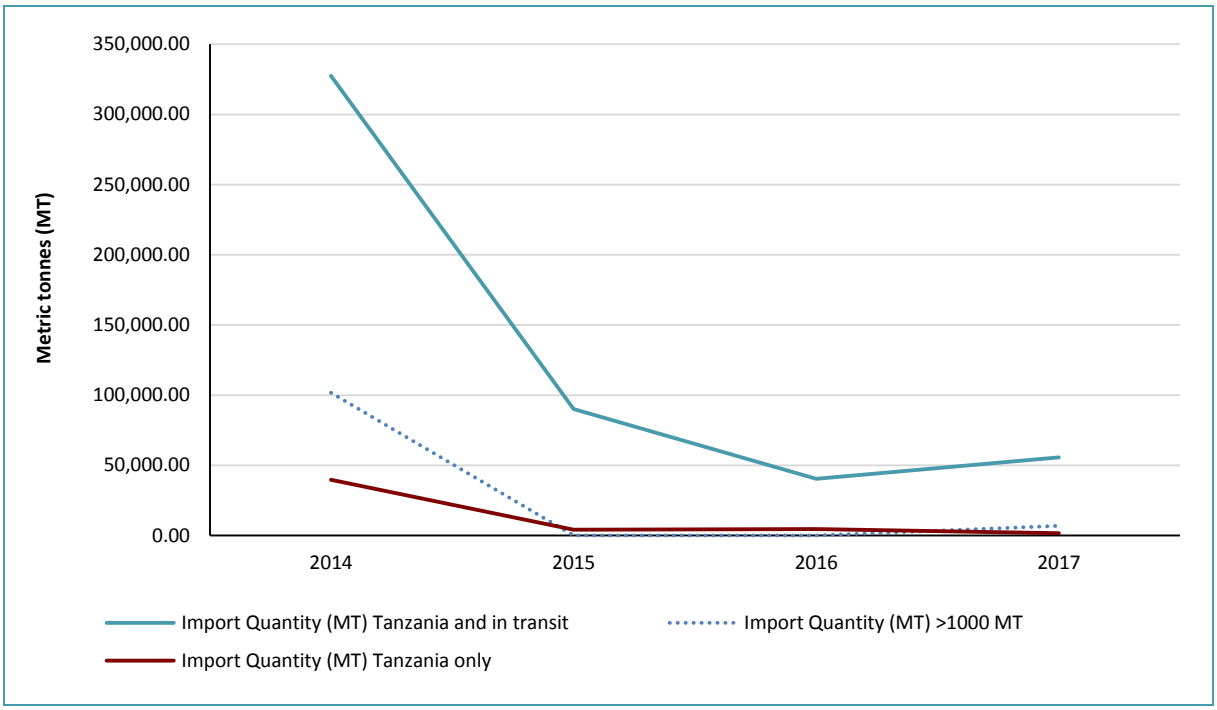
4.3. Transit, exports and cross-border trade

Mirror statistics, as applied above, are based on imports shipped through major seaports that are reported by the Tanzanian authorities, which are then compared to figures reported by the authorities in countries that export rice to Tanzania. It should be noted, however, that this does not capture other routes of illegal trade such as imports and exports 'across porous land borders with neighbouring countries, unrecorded imports through harbours and established border posts, imports by small dhows from through illegal ports, and transit goods that remain in country' (Tanzania SERA Project, 2016b, 127).

[43] In 2013, the mainland Ministry of Industry and Trade issued licenses for 85,000 MT according to this report. In Figure 7 imports for 2013 are of a similar order of magnitude.

Rice in transit is recorded as imported rice in the official trade statistics and is not separately accounted for. But access to anonymised transaction data from the TRA provides information on rice in transit for a five-year period (see Figure 11).

Figure 11. Transaction-based data for rice in transit, 2014–2017



Source: Authors' calculations based on anonymous TRA transaction data.

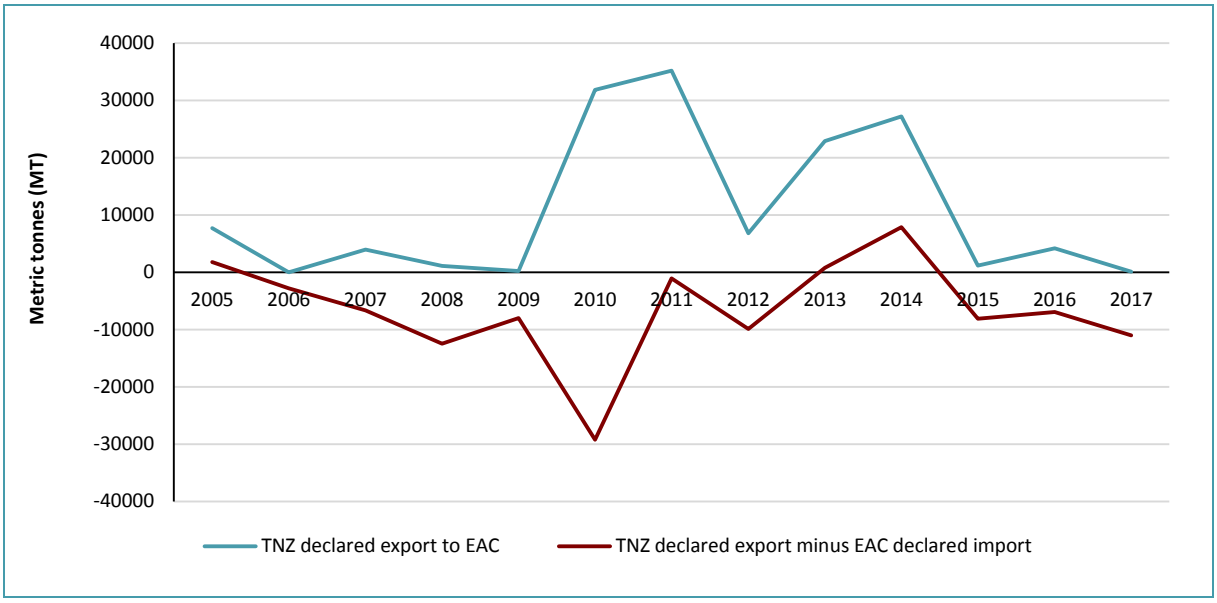
Calculations based on this figure indicate that the volume of rice in transit was substantial but that it declined significantly from 287,000 MT in 2014 to 54,000 MT in 2017. The final destinations for rice in transit are mainly land-locked countries like Rwanda, Congo, the Democratic Republic of Congo (DRC) and Burundi. Kenya never appears in official transaction-based data as a final destination of rice in transit: this suggests that rice exported to Kenya from Tanzania takes mainly informal routes, either smuggling through porous borders (from Tanzania or from Zanzibar) or the exporting of imported rice as if it was Tanzanian rice (which violates ROO). Transaction-based data also shows that officially imported rice fell to close to zero during the same period, which is consistent with the data in Figure 7.[44] Finally, Figure 11 indicates that large traders (who import consignments above 1,000 MT) may be dropping out of the official import trade.

Export of rice based on mirror statistics within the EAC (Figure 12) shows that Tanzania's declared exports to other EAC member countries was above or around 20,000 MT only in 2010, 2011, 2013 and 2014 during the 2005–2017 period. In all other years, it was below 10,000 MT/year or close to zero. Compared with what member countries recorded as imports from Tanzania, these figures are consistently under-reported and should be some

[44] Except that the official import data ought to include rice in transit. They do not and consequently the transaction data and the official trade data differ.

10,000 MT higher per year.[45] This indicates that some smuggling occurs in Tanzania's export of rice to the EAC, even without accounting for unofficial cross-border routes.

Figure 12. Tanzania's declared exports to EAC countries, 2005–2017



Source: The authors based on UNCTAD data.

Clearly these statistics do not cover the substantial informal trade[46] across borders in the region. Back in 2012, the Gatsby Charitable Foundation and Kilimo Trust (2012, Figure 17) found that the 'extent of informal trade in sugar and rice across Tanzania's borders are higher than for all the other products analysed, with some 90 per cent of trade flows of these two crops moving through informal channels'.[47] Newer estimates show a five-year annual informal export of rice across Tanzania's land borders amounting to 160,000 MT/year on average between 2015 and 2019 (FEWS Net, 2020, Figure 6).[48] This is equivalent to 8% of local production and considerably more than the recorded official exports to EAC countries (see Figure 12).[49] In 2017 alone, when mirror statistics suggest under-reporting peaked at 186,000 MT, the value of the difference between exports (from foreign countries) and imports (declared by Tanzania) was around US$100 million. Assuming that this is an accurate approximation of the value of smuggled rice and that this rice would have attracted 75%

[45] Total official exports of rice were low during the 2000s but picked up between 2010 and 2014 and then fell from 2015 onwards (see Figure 7). Most of Tanzania's official rice exports go to the EAC.

[46] Not all informal cross-border trade in the region is captured as only eight border points between Tanzania and Kenya, Uganda and Burundi are monitored (FEWS NET, 2020). Kenya typically imports the largest volume of rice in this type of trade.

[47] Interviewees in the EAC Secretariat (January 2019) considered that a 50-50% split exists between official and unofficial trade across EAC borders.

[48] During an earlier and shorter period (2014–2017) the estimated annual average informal export trade was 223,000 MT (FEWS-NET, 2018, Table 1).

[49] Another estimate is that Tanzania exported 36,000 MT of rice in 2011 according to official government customs records. However, this excludes a similar quantity of unrecorded exports through official border posts and informal *panya* routes (Tanzania SERA Project, 2012, 1).

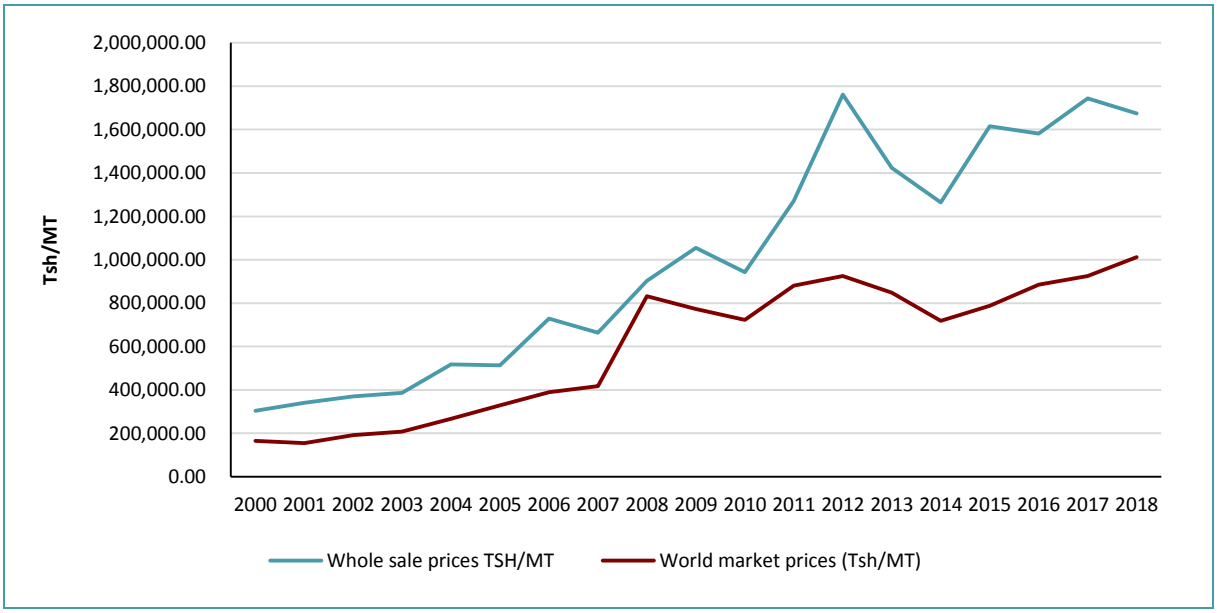
import duties, smuggling of rice for 2017 alone would account for a revenue loss of around US$75 million.

4.4. Puzzling yet persistent price trends

Most paddy is grown as a rainfed crop and therefore yields are uncertain. Smallholders also often have poor storage facilities and tight household economies that force many to sell at harvest time. This and a variety of other causes result in often dramatic prices fluctuations over the year. Wholesale prices may, for example, vary by 20% or more over the year. There are also substantial differences across domestic markets (Minot, 2010).

The above features are not puzzling in Tanzania or the Eastern African context. But what *is* puzzling in the Tanzanian rice sector is that a gap persists between the world market price and the local wholesale price measured in Tsh (see Figure 13).[50] According to the Gatsby Charitable Foundation and Kilimo Trust (2012, 33), this price gap persists because the evasion of import duties (i.e. smuggled rice) did not have a substantial price effect in local markets during the 2004–2011 period. This gap has also puzzled Konandreas et al. (2015, 99). Our own interpretation is that smuggling of rice into Tanzania (see Figure 9) has not had a clear domestic price effect because of the rent-generating strategy used by importers to evade duties on imported rice. This is explained in section 4.5.

Figure 13. World market and Tanzania wholesale rice prices, 2000–2018



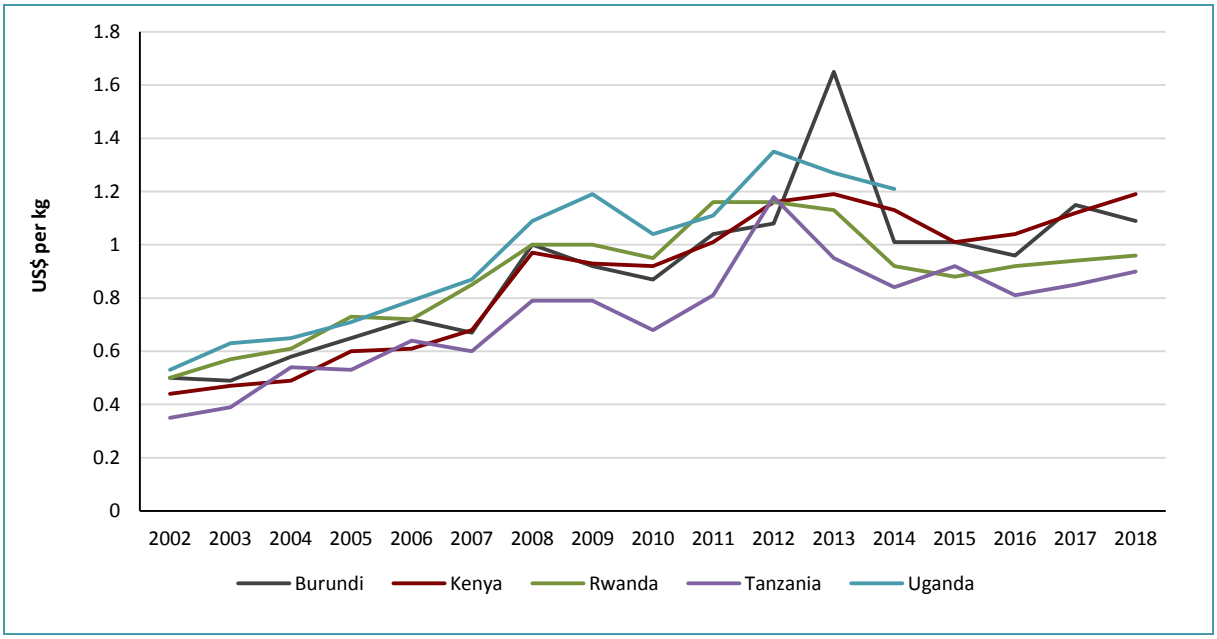
Note: This figure also shows the spike in the global rice price due to the 2007/2008 global food crisis, which was higher than for any other commodity (Pernechele et al., 2018, 3). The spike in 2012 was caused by the large production shortfall that year.

Sources: World market prices from the OECD-FAO database; wholesale prices from the Ministry of Agriculture.

[50] This captures the effect on the world market prices of the devaluation of the Tsh during the 2000s.

Figure 14 shows another important feature of rice pricing in East Africa. The retail price in Tanzania is consistently lower[51] than in other EAC member states – around 30% lower than in Kenya, for example.[52] This probably (partly) reflects the higher degree of rice self-sufficiency in Tanzania and the substantial real rice scarcity in Kenya. Moreover, apart from the price spike in 2012 due the shortfall in production, annual increases remained fairly constant from 2002 to 2017, and since 2014 Tanzanian retail prices have stabilised.[53] But Figure 14 indicates another puzzle: while Tanzanian traders have a price incentive to smuggle rice into other EAC member countries, this has apparently not pushed up local retail prices in the domestic market.

Figure 14. EAC retail prices, 2002–2018



Sources. EAC Secretariat, EAC Facts and Figures, 2013, 2015 and 2019.

4.5. Shifting patterns of rice trade and rent-seeking

Explanations for these puzzles require that several pieces of evidence are put together. This is challenging because there are many, partly unknown, trade flows to keep track of (as discussed in the trade flow typology shown in Figure 1). These explanations are therefore best presented step by step:

[51] In Zanzibar the island government applies ceiling prices to rice (World Trade Organisation, 2019, 283).

[52] The difference is even bigger according to RATIN & EAGC (2018, Figure 8): wholesale prices in Tanzania in 2017 were around 70% lower than in Kenya.

[53] These are longer-term trends. In the shorter term, smuggling may have some impact on prices. In 2015, for example, when smuggling was substantial (see Figure 9) it put a downward pressure on prices. Prices picked up again in the first quarter of 2016 during Magufuli's first year in office when smuggling declined dramatically (Kilimo Trust, 2018, 53).

1 Tanzania has become increasingly self-sufficient in rice due to rapid area expansion and some increase in yield during the last 20 years. Production almost quadrupled, while consumption tripled from 2001 to 2017. The rice gap has closed – especially since 2014. Smuggling is not, therefore, driven by a rice gap as it perhaps was in earlier years.

2 Smuggling is volatile. Annual quantities vary significantly. Although relatively modest for the 2001–2017 period, smuggling increased to around 100,000 MT/year after 2014, despite a negligible rice gap.

3 Rice trades across borders have become relatively less important for the Tanzanian rice sector in aggregate terms. Although quantities of legal and illegal imports, exports or rice in transit varied significantly from year to year, in the 2000s their share has been typically less than 10% of total consumption. Rice (smuggled or official) traded across Tanzania's borders is therefore not nearly as important today as 20 years ago. In absolute terms, the rents generated from smuggling are, however, still substantial. For the 2001–2017 period, the accumulated value of smuggled rice was around US$512 million (PPP 2010).

4 Trends in rice stocks support the view that smuggling is not primarily driven by a rice gap. Rice stocks increased from 2009, probably reflecting a bumper harvest in 2010, and (to some extent) in 2011. Since 2012 there has been a gradual closing of the rice gap. Yet, smuggling peaked in 2009, was limited during the two bumper harvest years, but then increased rapidly in the last years of president Kikwete's second term. Smuggling would make sense if stocks were shrinking (indicating a supply shortage), but the trend is in the opposite direction.

5 Stock-building is not driven by official imports either. These were limited from 2001 and 2017 according to official statistics (see Figure 8) and to the transaction data for 2014–2017 (see Figure 11). The exception is a substantial official import in 2013. This was caused by a 30% drop in production from 2010 to 2012, which reduced stocks by a similar percentage. Stocks were only partly restored by the 2013 official import.

6 Nor are stocks affected much by official exports, which in any case have been limited but volatile (as indicated by Figure 8). The high volatility in exports is 'partly due to intermittent export bans at national and district level' (Gatsby Charitable Foundation and Kilimo Trust, 2012, 22).

7 The end use of rice in transit is not well documented. Transaction data from 2014 to 2017 (Figure 11) show that the amounts involved are modest (except in 2014). Is it exported legally to its end destination? Is it dumped in the local market? Or is it smuggled out of the country? As no import duty on rice in transit is paid upon entry (see section 3.5), the incentive to divert transit rice from its intended destination can be strong in the absence of effective control of traffic in and out of Transit Sheds. Some of this cheaper rice may also be mixed with local rice and sold domestically or exported as locally produced rice at higher prices. The falsification of ROO by re-labelling (illegal) imports as domestically produced rice for subsequent export to EAC member countries without paying duties is common: 'Rice is the most notorious case as far as this fact is concerned' (World Bank & East African Community Secretariat, 2016, 93).

8 Traders speculate in price fluctuations. Wholesale and retail prices typically vary by some 20% or more during the year as well as between years depending on weather and market conditions (as shown in section 4.4). Larger traders with substantial storage capacity gain most from speculating from such differences. The scope for speculation is widened by shorter-term price fluctuations that result from frequent changes in the Tanzanian trade regime for rice (e.g., export bans, import bans, temporary permissions to import duty free or at reduced rates when perceived scarcity arises, etc.).

9 While the volume of official imports of rice has dropped in recent years, some quantities of smuggled rice is sold in the local market far above the world prices at which it is bought. It has been reported that this rice is sold at 'not much below the cost of officially importing rice, implying either that large unofficial payments are being made in order to import this product, or that large profits are being made by a few large-scale importers' (Gatsby Charitable Foundation and Kilimo Trust, 2012, 31). This partly explains why a substantial price differential persists between world market prices and Tanzania's wholesale prices (as shown in Figure 13). Large rents can be generated using this strategy. However, for such a strategy to function requires some collusion among the larger traders that dominate bulk imports and warehouses to control the release of rice in the market (see section 4.1). While generating substantial rents for the traders involved, the irony of this stregy is that it protects rice growers from the downward pressure on prices from cheap imported rice. The loser is the government, in terms of lost revenues. This is one part of the answer to the price puzzle posed earlier.

10 Finally, some smuggled rice may also be exported to neighbouring countries where price levels are higher than in Tanzania. This also helps to explain the puzzle about the persistent price gap between world market prices and wholesale prices in Tanzania. Some/most of the rice smuggled into Tanzania is re-exported to neighbouring countries – especially Kenya – where prices are higher than in Tanzania. It may also help to explain why informal exports of rice across Tanzania's land borders to neighbouring countries amounted to 160,000 MT/year on average between 2015 and 2019 – although not all of that informal traffic is illegal (as explained in section 3.4).

In short, taken together, the evidence indicates that rents from trade in rice has shifted from rent-seeking in the domestic market towards rent-seeking in Tanzania's nearby export markets. The remarkable increase in rice production – mainly by smallholders – is an important driver of this shift. Another is the decentralised and fairly competitive rice value chain which provides incentives for rice-growers despite the dominance of large traders in parts of the chain. Finally, the higher prices of rice in Tanzania's neighbouring countries are important for explaining the observed rent-seeking.

5. Formalising trade through collective action: an anti-corruption proposal from Tanzania to the EAC

We have established that rice is a political crop. The analysis and empirical evidence presented in this paper shows that scarcity generates commodity-specific rent processes that are influenced by the political economy of rice in Tanzania, as well as the external trade (and power) relations within the EAC customs union. We have also provided evidence of the complexities, inconsistencies and exemptions in Tanzania (and across other countries in the EAC) in the application of CET rules. Each year, EAC partner states undertake annual reviews of the trade regimes of specific products as part of the Pre-Budget Consultations of EAC Ministers of Finance. Conflicting claims and interests often result in complex and differentiated tariff schedules for the same commodity, including exemption arrangements, which are difficult to enforce by individual countries. These arrangements often result in mistrust and contestation. In some cases, these have even led to tariff wars, and export and import bans within the EAC. Consequently, formal CET rules and tariff schedules have been by-passed in the implementation process, and trade regimes are instead shaped by several semi-formal and informal practices that have opened up opportunities for rent-seeking.

This rent-seeking has affected tax revenue collection in Tanzania (and other countries within the EAC), as governments lose import duties from under-reported rice or smuggling. More critically, rent-seeking has also created an environment where Tanzanian rice producers cannot exploit export opportunities and price premiums within the regional markets. This is due to political micro-management of trade (by both importing and exporting countries within the region) and related semi-formal and informal processes (e.g. export bans, contestation of ROO or in the application of the right import duty). Finally, consumers in the region have not benefited from the increasing availability of good-quality, cheaper rice, as Tanzanian exports to the region have remained very limited and traders have largely colluded in making sure that prices remain high.

Against this background, we recommend a feasible anti-corruption strategy which begins with establishing a new formal trade arrangement that:

(a) is more aligned with the national and regional political economy and that formalises current semi-formal practices;

(b) promotes collective action among countries in the region, supported by horizontal enforcement in the regional business community;

(c) reduces inconsistencies across tariff schedules – thus, it becomes easier to enforce schedules and vulnerabilities to corruption are limited;

(d) promotes some competition among rice traders at the regional level;

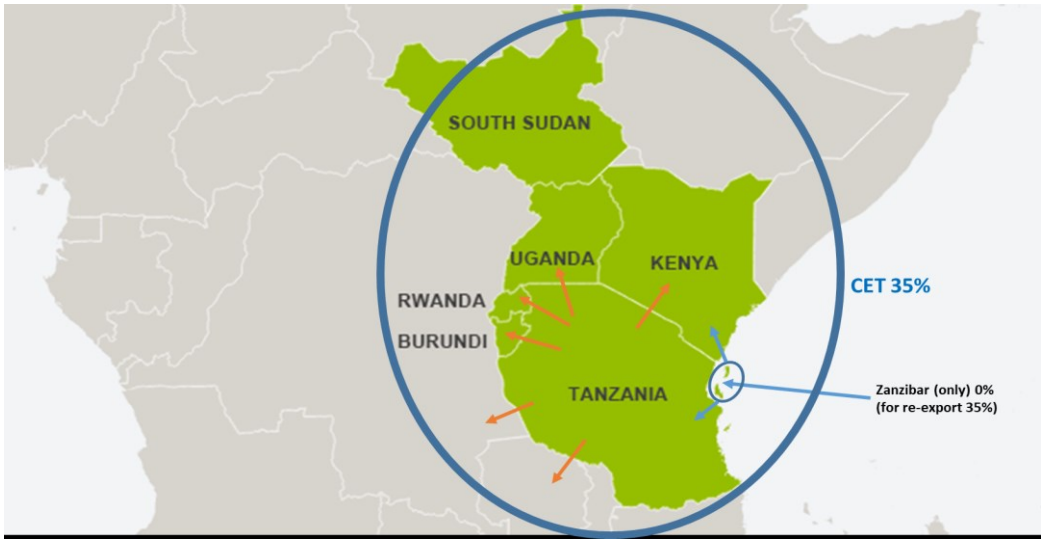
(e) promotes regional supply chain integration in the rice sector and incentivises productivity increases.

As the main – and surplus – producer of rice in the region, Tanzania is in a unique position to promote this anti-corruption strategy and encourage acceptance by other country partners and their business communities.

Previously, Tanzania – and to a lesser extent Uganda – had interests in protecting the rice sector in the region. Over the years, however, application of the 75% import duty was in fact largely by-passed and exemptions have been applied. Tanzania's rice sector could continue to prosper with a reduced protection, especially if this goes hand in hand with more opportunities for export in profitable regional markets (Kenya in particular) where demand and mark-ups are often higher than in Tanzania. At the same time, as discussed above, Tanzania could benefit from a form of natural protection from imported rice given the preference for Tanzanian rice in the domestic market. A shift from the current 75% protection to a 35% rate as is currently applied by Kenya would therefore not damage domestic producers and would make exports to Kenya smoother. Traders who now import rice through Kenya and Tanzania would face the same import duty, and any rice imported in the EAC would be largely treated in the same way. There would also be a level playing field if both countries put the same efforts into enforcing the 35% import duty at their main ports in Mombasa and Dar es Salaam. In fact, Kenya would be reassured that Tanzania would have a slightly stronger incentive to protect its domestic produce and apply the 35% import duty.

To better align this new formal arrangement to the national and regional political economy, Zanzibar should be given a differentiated regime: it should be allowed to import at 0% (as it is largely doing already) but any rice exported from Zanzibar to Kenya or mainland Tanzania would attract the 35% import duty automatically. This solution would prevent the government in Zanzibar from raising a food safety argument, while reducing the incentive for traders to use Zanzibar as an unfair 'back door' into the EAC. This is again something that has already found support in Tanzania and would be welcomed by traders in Kenya who are importing at 35% and facing unfair competition from traders using the Zanzibar route. Figure 15 provides a visual representation of this new formal arrangement.

Figure 15. A new unified CET regime for rice in the EAC

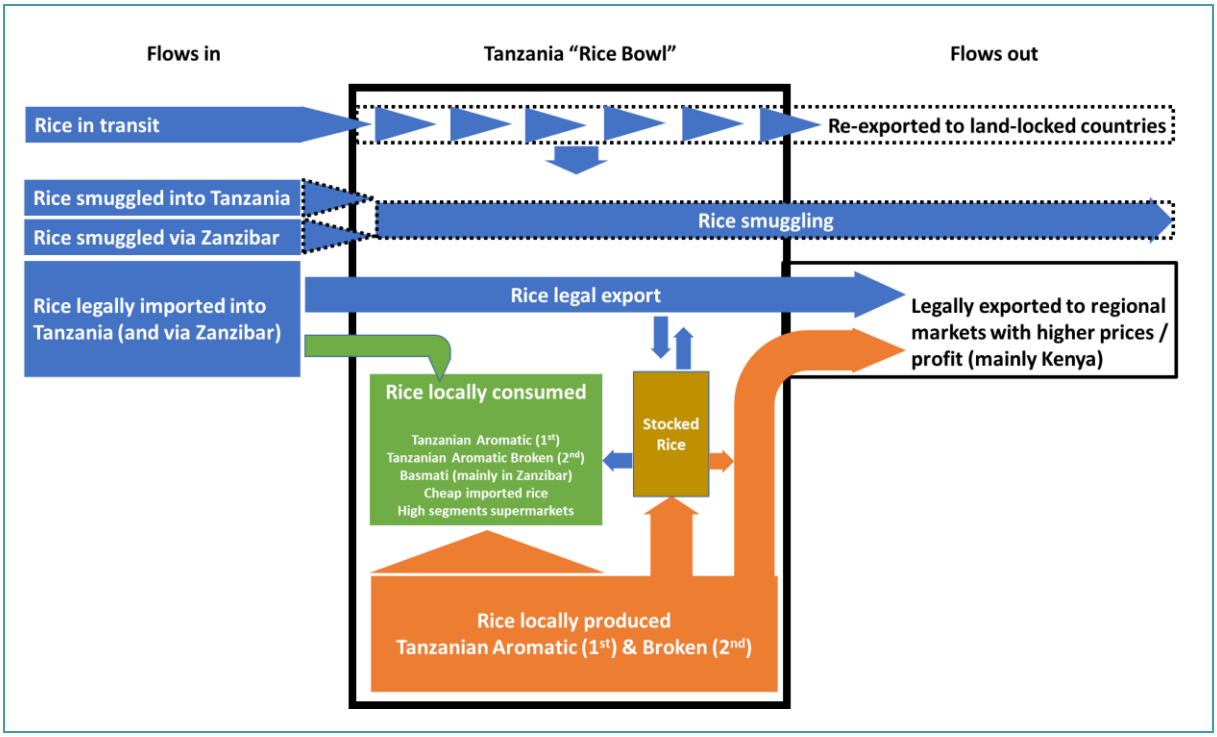


Source: The Authors.

The proposed arrangement would bring more competition among traders importing rice in the region and would lead to a potential reduction in prices. Greater availability of cheaper rice has strong political currency and its therefore in the interests of both the Government of Kenya and of Tanzania. Furthermore, there is evidence that the higher the import duty, the higher the incentive for under-reporting (Bünder, 2018; Andreoni and Tasciotti, 2019). A lower tariff would therefore reduce the incentive for smuggling. Furthermore, a uniform tariff would reduce the need for constant re-negotiations and semi-formal allocation of exemptions. For example, with reference to Zanzibar, there would be no contestation of ROO. The island produces less than 25% of the island's need. Zanzibar could import at zero rate from any place (including mainland Tanzania) but would not need to prove ROO as the 35% import duty would be applied on potential exported rice within the EAC.

From the perspective of the business community, the East African Business Council (EABC) has advocated simplification of the CET and consistent application of tariff schedules (EABC, 2020b). In particular, businesses in Tanzania would be able to sell their rice in Kenya, without the Tanzanian government fearing food scarcity in Tanzania. More formal export from Tanzania could in fact go hand in hand with more formal import. It could also reduce attempts to stockpile rice and manipulate domestic prices. Indeed, if prices were kept artificially high, traders from Kenya could export into Tanzania (and vice versa). In the current scenario, Tanzania would not allow Kenya to export rice into Tanzania as this would disadvantage domestic producers and traders importing with a 75% import duty (see Figure 16).

Figure 16. Trade formalisation and the potential impact on Tanzania's trade flows



Source: The Authors.

Tanzania's rice production has more than doubled over the last ten years and has delivered domestic self-sufficiency. As discussed above, several factors have contributed to development of the sector, including the presence of a high import duty barrier. At this

stage, however, a differentiated but high import duty has become a weakness more than a strength in terms of developing the sector further and exploiting export opportunities in regional markets. Collective action at the regional level – especially between Tanzania and Kenya – would potentially deliver fewer rent-seeking opportunities, formalisation of an enforceable trade regime, and significant development outcomes with regards to jobs and food security in Tanzania and the broader region.

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