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# AGRICULTURAL PRODUCE CESS IN TANZANIA: POLICY OPTIONS FOR FISCAL REFORMS

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In the course of field work and after production of the draft report, the research team consulted with various stakeholder's groups to get their views on findings and recommendations. The draft report was discussed in a stakeholders' meeting on 30 October 2014 held in Dar es Salaam, which was attended by the leadership of MAFC, PMO-RALG, local governments, farmers, traders, processors, and ccess administration agencies.

## Executive Summary

Rural taxation policy is a major issue in many countries of Africa as they pursue more decentralized forms of governing and at the same time work to enhance the effectiveness, efficiency, and fairness of their tax systems. Tanzania has struggled with this issue since at least 1962, when it expanded countrywide the limited decentralization that had occurred under the colonial regime, then abolished LGAs in 1972 in favor of “*Madaraka Mikoani*”, only to reinstate them and enshrine them in the constitution in 1984. With wide powers to set tax policy and practice at local level, made possible by the Local Government Finance Act (LGFA) of 1982, Tanzania soon experienced a dizzying array of taxes and fees, with dramatically differing rates across LGAs. The situation became so extreme that some claimed that Tanzania by the late 1990s had “about 110 local authorities ... each with a different tax system” (Fjeldstad and Semboja 2000). A sustained effort at reform culminated in 2003, when the “head tax” and a series of “nuisance taxes” were abolished, and the produce cess was limited to a maximum of 5% (compared to rates as high as 20% in the past).

Though the resulting system of local taxation is substantially less complex, less variable across LGAs, and less onerous than it was prior to these reforms, important problems remain, and stakeholder demands for further reform have been growing. Since the produce cess became the most important source of local revenue after 2003, much of the demand for reform has focused on it. In response to these concerns, GoT included a commitment to “reduce or abolish” produce cess when it signed the G8’s “New Alliance for Food Security and Nutrition” declaration.

This study took advantage of a newly available database of LGA revenue and expenditure and complemented it with fieldwork in 27 LGAs with varying levels of reliance on the produce cess. Its overall purpose is to generate new empirical understanding that contributes to the on-going debate on produce cess and that informs the GoT on pros and cons of potential options for reform.

Key new findings include:

1. Dependence on the produce cess varies widely among rural LGAs, from 0% of total locally generated revenue in Ngorongoro to 90% in Urambo;
2. Relative to the value of their marketed production, traditional export crops generate more than three times as much cess revenue as do food crops;
3. Much potential cess revenue goes uncollected: nationally, LGAs collect not more than one-quarter of the revenue potentially available from produce cess charges. This low level of collection reflects both limited human and institutional capacity at local level and widespread tax evasion, some of it likely featuring the collaboration of some local officials;
4. Because it is charged on the gross value of production, current cess rates can result in very high tax (even confiscatory) on net revenue among farmers that use a large amount of inputs but experience small net margins;

Confirmed previous findings include:

1. With the reforms of 2003, local revenue fell sharply as a share of total LGA revenue, from 20% to a current level of 7%. Central government transfers provide the rest. Such a low share of locally generated revenue makes meaningful decentralization quite challenging.
2. Nationally, cess contributes only 1.8% of total LGA revenue, with other local taxes accounting for 5%;
3. Yet cess is the largest source of rural LGA own revenue, at 43%. Because this revenue is very flexible (it does not come with the spending dictates that accompany central government transfers), it is highly valued by local authorities, and is largely used for Councilor allowances and other “costs of doing business”;
4. Cess rates are highly variable across LGAs, varying by a factor of as much as four (Beans in Handeni at Tshs 1000/bag vs. Lushoto at Tshs 4000/bag);
5. Tax evasion is widespread and likely a more serious problem than tax avoidance;
6. But avoidance – farmers or traders or others changing their production and marketing behavior due to the tax (and especially due to the variation over space in tax rates) – can be a serious problem in particular instances. For example, some sugarcane growers in Mvomero are considering shifting their farming activities to Kilombero due to lower cess rates in the latter; and farmers and traders report that traders favor some districts over others in their food trade due to differences in cess rates;

Reform options include:

1. Abolish cess in one step
2. Gradual phasing out of cess
3. Reduce the cess rate, broaden its base, and improve capacity for collection
4. Institute a differential cess for food- and non-food crops
5. Completely remove cess in food crops, leaving it only for traditional and other export crops

Simple simulations of option 3 combined with option 4 (3% for traditional cash crops, 2% for food crops) indicate that LGAs would need to improve their efficiency in collection (the share of potential cess that is actually collected) from the current estimated 28% to 41% to maintain revenue, and would increase revenue with further improvements. Complete elimination of cess on food crops (option 5) would make LGA’s jobs quite challenging, especially if rates were reduced on traditional export crops. Leaving the rate on these crops unchanged at 5%, LGAs would have to achieve nearly 60% efficiency in their collection to maintain their current revenues; dropping the cess on traditional export crops to 3% while eliminating it on food crops would require an almost certainly unattainable 83% efficiency.

Based on the analysis in the paper, and in keeping with the view that improvement in tax systems is a long-term process featuring continuous, incremental improvement, the report suggests that option 3 combined with option 4 – reducing the rate of the cess (thereby reducing its variability over space), introducing a slight differential between food crops and traditional export crops, and

broadening the cess collection base by working continuously to improve the human and institutional capacity of LGAs to collect taxes in efficient and fair fashion, is likely to be the best option for Tanzania. Piloting of technological and institutional innovations such as the use of mobile money for cess payment are proposed as one way to address both the inadequate local capacity and the scope for corruption in cess collection.

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## **Abbreviations and Acronyms**

ACT	Agricultural LGA of Tanzania
CAG	Controller and Auditor General
CLIR	(Agribusiness) Climate, Legal, Institutional and Regulatory (Framework)
DC	District LGA
LGA	Local Government Authority
LGFA	Local Government Finance Act
MoU	Memorandum of Understanding
PMO-RALG	Prime Ministers' Office – Regional Administration and Local Governments
TANROADS	Tanzania Roads Agency
TCB	Tanzania Coffee Board
WEO	Ward Executive Officer
VEO	Village Extension Officer

## 1. Introduction

Agricultural stakeholders in Tanzania have for some time expressed concern regarding the likely impact of produce cess, a levy charged by Local Government Authorities (LGAs) at a range of 0 to 5 percent of the farm gate price. Several specific concerns have been voiced: civil society fears that traders either pass back the cess to farmers as lower farm-gate price or pass it forward to consumers as higher retail prices, either of which could worsen food insecurity and poverty; farmers, agribusiness, and other citizens worry about how the cess revenue is spent and the fiduciary accountability of LGAs; agribusinesses criticize the manner in which the cess is implemented, the rates that are charged, and the resulting impact on their profitability and their ability to compete in domestic, regional and international markets.

Evaluation of these concerns needs to take heed of the push in Tanzania – as in nearly every other developing country in the world – to build capacity for effective, responsive, and accountable local public administration. As the tangled history of decentralization in Tanzania shows, this objective faces multiple hurdles and is achieved only in progressive fashion over the long-term. Efforts at decentralization have been part of Tanzania’s development strategy since before independence. According to Shamumoyo (2012), after independence in 1961, Tanzania (Tanganyika at the time) expanded countrywide the limited decentralization that had already occurred under the colonial regime. In 1972, this system was abolished and replaced with “*Madaraka Mikoani*”, conceived as a form of decentralization through direct engagement by central government with local people, without mediation by formal local governmental structures. This approach was soon regretted and hence the system was reinstated in 1984 with a constitutional amendment (Act No. 15 of 1984) that ensured continued existence of a system of local government. Prior to this constitutional amendment, in 1982, the government enacted a series of laws to lay the groundwork for reinstatement of a local government system: The Local Government (District Authorities) Act; The Local Government (Urban Authorities) Act; the Local Government Finance Act; and the Local Government Services Act. In December 1983, 99 LGAs (or LGAs) were established, consisting of 80 rural Districts and 19 Urban LGAs. Currently there are 166 LGAs.

The Local Government Finance Act (LGFA) of 1982 gave LGAs wide powers to impose taxes, levies and fees (including produce cess) and set rates within their local jurisdiction. Partly as a result, by the mid-1990s a dizzying array of taxes and fees had been introduced, with dramatically differing rates of taxation across LGAs and very high costs of collection. Indeed, some claimed that the multiplicity of approaches was so great that Tanzania at the time had “about 110 local authorities ... each with a different tax system” (Fjeldstad and Semoja 2000). The complexity and opacity of the system at that time, together with the deep unpopularity of the Development Levy – a flat “head tax” that dated to colonial times and constituted the single largest source of local governments’ own revenue – led to a sustained effort at reform starting in the mid-1990s. This effort culminated in the reforms of 2003, in which the Development Levy was eliminated, a series of “nuisance taxes” were

abolished<sup>1</sup>, and the produce cess was limited to a maximum of 5%, compared to rates as high as 20% on some crops in some districts in the past. The business license fee was abolished as a source of regular revenue in 2004.

This brief history makes it clear - and it's important to recall in the midst of the current debate - that the present system of local taxation is substantially less complex, less variable across LGAs, and less onerous than it was prior to the reforms of 2003. Important progress has been made over the past decade in the development of a workable system of local taxation in Tanzania. That said, two important sets of problems remain. First, though much improved from the early 2000s, this system continues to show great variability across LGAs, to feature too little transparency in how rates are set and how cess is collected, to rely on collection methods that may needlessly disrupt economic activity, and to demonstrate limited accountability in how funds are spent. Because the produce cess became, after the reforms of 2003, the single largest source of revenue in most rural LGAs, much of the concern about these issues has come to focus on it.

In response to these concerns from stakeholders, the GoT in 2012 promised to make further fiscal reforms in LGAs to allow "reduction or abolition" of produce cess by July 2013. This commitment was elevated to international level by including it among the commitments in the "New Alliance on Food Security and Nutrition" formed under the auspices of G8, a group of advanced economies supporting developing countries.

This commitment by central government brought to the fore the second remaining problem from the 2003 reforms: the elimination of the Development Levy (and to a lesser extent the assortment of nuisance taxes) in 2003 led to a decline in locally generated revenues that has never been reversed. Indeed, own-source revenue in LGAs fell from 20% of total revenue in 2001/02 to under 10% in 2005/06 (two years after the reform, see Sarzin 2007), and to 7% on average since 2009 (see Table 3 in this report, below). Perhaps not surprisingly, LGAs mounted stiff resistance to any plan to abolish or sharply curtail the cess, claiming that produce source was an important source of revenue and that abolition would undermine decentralization. In response to this pressure, the GoT postponed its final decision on the cess pending greater study and consultation.

Tanzania is not alone in its use of the produce cess, nor in its struggles with improving its system of local taxation. Zambia long had a produce cess in place, abolished it several years ago, and has very recently reinstated it. Kenya has a produce cess on several crops including maize, sugarcane, tea, coffee, cotton, and horticulture, and has seen a rash of newspaper articles over the past year documenting taxpayer resistance to these charges (see Annex A); the articles suggest a situation at least as charged as is seen in Kenya. Uganda has a produce cess on at least maize and coffee.

Based on our assessment of stakeholder concerns from the literature and from a rapid assessment among key stakeholders<sup>2</sup>, this paper asks six questions. First, what is the pattern of reliance on

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<sup>1</sup> "Nuisance taxes" are characterized by Fjeldstad and Semoja (2000) as taxes such as "the bicycle tax, livestock levy, the entertainment levy ... pushcart fees, cattle trekking fees, bicycle registration fees, etc., that have a high nuisance value and that cost more to enforce than what they yield in revenue."

produce cess across LGAs? In section 4 of this report we use a newly available database of LGA revenue and expenditure to examine cess revenues nationally, in urban- compared to rural LGAs, and across rural LGAs; to our knowledge this is the first time that such an analysis has been possible. In each case, we distinguish between the produce cess's share in total financial resources available to LGAs and its share in revenues that the LGAs are able to raise themselves and, by implication, over which the LGAs have much more control in how they are spent.

The remaining questions are addressed in section 5 with results from the fieldwork in 27 LGAs (see below). Our second question is how variable the cess rate is across LGAs. We find that the effective rate varies dramatically across districts and across crops within a district; this reinforces findings from earlier studies, this time with a larger sample of LGAs. We also compute the incidence of the cess on net revenue, showing that this varies far more widely and is, of course, higher than the nominal cess.

Third, which crops contribute most to produce cess revenue? Because the national PMO-RALG LGA data base does not report cess by crop, we again relied on fieldwork to address this question. We find that no single crop is dominant but that traditional export crops contribute about two-thirds of all cess revenue in surveyed districts.

Our fourth question focuses on how produce cess is administered and what the major concerns are about its administration. We also ask whether it is administered in accordance with the stipulations of the Local Government Finance Act and whether that act is as clear as it needs to be in some areas.

Fifth, how much of the potential cess is actually collected? We find that at least three-quarters of the potential cess remains uncollected, which has important implications for the design of ways forward towards better taxation systems.

Our sixth and final question relates to the economic incidence of the cess as contrasted with its statutory incidence; in other words, although traders are statutorily obligated to pay the cess to the LGAs, who really pays the cess after prices, production, and crop demand adjust in a market setting to the presence of the cess? We find that this answer cannot be definitively answered with available data but that several perspectives suggest that most if not all the cost is passed on to farmers, meaning that they end-up paying at least the majority of the cess.

We conclude by summarizing what can be known about the cess and its likely impacts on production and competitiveness, and considering alternative reform paths. We firmly root the discussion of possible changes to the cess in the current realities of Tanzania's rural economies and in the (limited) administrative capacities at local level. We suggest that the best way forward is likely to be an incremental approach that builds on past progress by modifying the cess in ways that are minimally disruptive to LGA operations while strengthening capacity and incentives for local

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<sup>2</sup> Prior to the formal fieldwork under this study, discussions were held with farmers, agribusiness, LGA staff, and GoT officials from the Ministries of Agriculture, Food Security and Cooperatives (MAFC) and Prime Ministers' Office – Local Government and Regional Administration (PMO-RALG).

authorities to move, over time to “better” tax policies – taxes and modes of implementation that are more transparent, more fair, more efficient, and less potentially distorting of economic activity.

Before tackling these six questions in sections 4 and 5, section 2 briefly explains the data and approach used in the study; section 3 then provides conceptual background on the characteristics of “good” tax systems and general implications for tax policy in a setting such as Tanzania’s. We return to the concepts and principles of that section in the final section of the paper when we consider policy options moving forward.

## 2. Data and Methods

Data for the study came primarily from two sources. First, the Prime Ministers' Office – Regional Administration and Local Governments (PMO-RALG) provided the study team with each of its "Consolidated Quarterly Financial Report for Local Government Authorities" from fourth quarter FY2009 (April – June 2010) through fourth quarter FY2012 (April – June 2013). These quarterly reports provide data on all sources of local revenue (including central government transfers) and destinations of expenditure for all LGAs, by quarter, allowing unprecedented detail in the analysis of the level and variability of produce cess revenues.

Second, a field survey of cess stakeholders (Table 1) was conducted during March and April 2014. The survey covered 27 LGAs (Table 2) that were purposively selected to ensure (a) coverage of a broad range of crops (including food and traditional export crops) based on agro-ecological zones, and (b) inclusion of LGAs with a wide range of dependence on cess. Among LGA staff, interviews targeted District Executive Directors (DED), revenue accountants, internal auditors, procurement officers, co-operative officers, and agricultural officers. A total of 103 staff were interviewed across the 27 LGAs; 242 interviews were conducted across all stakeholders. Additional, complementary information was collected in the 27 LGAs such as local bylaws that specify cess rates, local reports on own-source revenue, and local production statistics over the last five years.

Other data came from various sources: prices and production from crop boards and the agricultural census; and estimates of marketed surplus of food crops (for estimation of potential cess revenue) from value chain reports done by MAFAP and TechnoServe.

Table 1. Purposive Sampling of Produce Cess Stakeholders

Stakeholders interviewed	Zone						Total
	Northern	Central	Lake	Western	Southern Highlands	South Coast	
LGA staff	28	7	18	8	31	11	103
Smallholder Farmers	10	4	6	4	12	3	39
Medium Farmers	12	2	0	0	6	4	24
Traders / Transporters	19	4	4	1	8	0	36
Processors							
Cess collection agents/gate attendants	5	2	7	1	10	0	25
Crop board representatives	1	0	0	1	1	1	4
Farmer Association/Cooperative Reps	2	0	0	1	3	3	9
Others (research/regulatory)	0	0	0	0	1	1	2
<b>Total</b>	<b>77</b>	<b>19</b>	<b>35</b>	<b>16</b>	<b>72</b>	<b>23</b>	<b>242</b>

Table 2. Surveyed Local Government Authorities

Zone	Region	LGA	Cess share in own local revenue	Cess share in total local revenue	Target Crops
Northern	Arusha	Kiteto	97%	0.5%	Maize, livestock
	Tanga	Lushoto	32%	0.8%	Vegetables
	Kilimanjaro	Moshi	33%	0.8%	Livestock, paddy, coffee, sugarcane
	Arusha	Arumeru	9.7%	0.5%	Flowers
	Tanga	Muheza	24%	1.1%	Oranges ,tea
	Manyara	Babati	20%	1.0%	Maize, paddy
Central	Morogoro	Kilombero	73%	7.2%	Paddy, sugarcane
	Dodoma	Kongwa	52%	2.4%	Maize, livestock
	Singida	Singida	27%	0.5%	Sunflower & sorghum
	Morogoro	Mvomero	27%	0.9%	Rice & sugarcane
Lake	Shinyanga	Kishapu	62%	4.1%	Cotton, Paddy
	Shinyanga	Kahama	44%	4.5%	Cotton, paddy
	Mwanza	Kwimba	32%	0.8%	Cotton
	Geita	Geita	14%	0.8%	Livestock, cotton
Western	Tabora	Urambo	90%	15.0%	Tobacco
	Tabora	Uyui	87%	8.8%	Tobacco
Southern Highland	Mbeya	Mbinga	83%	6.2%	Coffee
	Mbeya	Mbarali	65%	3.4%	Rice
	Mbeya	Rungwe	63%	3.5%	Tea
	Mbeya	Chunya	54%	7.5%	Maize, livestock
	Njombe	Njombe	41%	2.4%	Tea , maize
	Rukwa	Sumbawanga	39%	1.7%	Maize& livestock
	Iringa	Mufindi	37%	3.5%	Tea
	Iringa	Kilolo	36%	2.1%	Vegetable
Iringa	Iringa	25%	1.3%	Maize	
South	Mtwara	Tandahimba	83%	10.4%	Cashew nut
Coast	Mtwara	Masasi	73%	3.8%	Cashew nut

Source: PMO-RALG data base for cess shares. Authors' elaboration from field work for target crops. Target crops were based on initial assessment of most important crops, prior to the fieldwork.

### 3. Conceiving Decentralization and Taxation in Tanzania

This section provides background information necessary for evaluating taxation in the context of decentralization and local governance. We pay particular attention to the cess tax and consider alternatives, given the “on the ground” conditions and political realities in Tanzania. We begin by reviewing core principles of taxation that guide effective tax policies. This is followed by a brief discussion of factors in Tanzania that may hinder the implementation of alternative tax reform measures. Using this information as a guide, we offer a brief evaluation of the degree to which the cess tax results in distortions (evasion and avoidance) and tax incidence. We conclude by discussing how these issues inform practical tax reform in a developing country context, with an emphasis on local government tax policy and the use of the cess tax.

#### 3.1 Characteristics of Effective Tax Systems

Consider the basic criteria for effective tax policies, which are summarized in most public finance textbooks<sup>3</sup>:

- 1) *Effective means of financing appropriate government activities*: While tax policies are sometimes used to encourage or discourage certain behaviors (e.g., a pollution tax is designed increase the costs of polluting and thus reduce pollution), the primary purpose of taxation is to effectively generate revenues to fund essential government activities such as the provision of roads, public safety, and the protection of property rights. A decentralized tax system should feature a coordinated and complementary set of taxes between national and subnational governments that meet the revenue needs of government as they seek to serve their citizens.
- 2) *Simplicity (ease of tax administration and compliance, and transparency)*: Administrative costs and difficulty in complying with taxes increase with the complexity of a tax system. Overly complicated taxation undermines compliance and creates incentives to underreport tax liabilities. Complex tax systems often lack transparency and create frustration on the part of tax payers, thus increasing the potential for non-compliance.
- 3) *Minimal interference with economic decisions (efficiency)*: Some taxes create incentives for economic agents to alter their behavior in order to evade or avoid payment of taxes. Evasion is the illegal non-payment of taxes, whereas avoidance involves legally altering behavior in such a way as to avoid payment of taxes. A tax that is perceived to be “unfair” or too high can result in tax evasion. Similarly, higher tax rates increases incentives to alter behavior to avoid taxation. The responsiveness (or elasticity) of demand and supply to changes in prices induced by taxation determines the degree to which avoidance will occur. Importantly, tax evasion and avoidance create inefficiencies, reducing the effectiveness of an economic system. Generally, broad-based taxes with a low rates result in fewer inefficiencies than do

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<sup>3</sup> See for example, Fisher (2006) and Rosen (2010) for quality expositions of the principles of taxation for subnational and national governments, respectively.

narrow-based taxes with higher rates. For example, a cess tax on a single agricultural product with a very high rate generates far more inefficiency (tax evasion—illegal under reporting of crop production; or tax avoidance—reduction in the production of taxed agricultural products in the taxed region).

- 4) *“Fair” Distribution of the tax burden (equity)*: Equity is a normative concept and thus is perhaps the most difficult to assess; each person has their own notions of fairness. Two criteria are typically used to assess fairness: horizontal equity and vertical equity. Horizontal equity refers to the notion that two individuals with similar ability to pay should pay a similar amount of tax. For example, two farmers producing the same product on similarly sized plots should pay about the same amount of cess. Few would disagree with this assessment. Vertical equity suggests that those with greater ability to pay should pay more than those with less ability to pay. For example, those with greater land allocations and production should pay a larger cess tax than a farmer with smaller plots. This concept, commonly referred to as a “progressive tax”, is also widely accepted. There is, however, room for differences in views regarding how much more the larger producer should pay.

### **3.2 Factors That Might Prevent Implementation of Ideal Systems**

In Tanzania and other developing economies, several factors may serve as barriers to implementing effective tax systems. First, administrative capacity may inhibit the use of some types of taxes. For example, use of a national income tax requires accurate records of individual tax payers and their income; many developing economies simply do not have the capacity to keep such records. Similarly, property-based taxation requires that property rights be clearly defined and that all property transactions be tracked by local authorities. Again, rural areas in many developing economies rely primarily on traditional land rights, and the formalization and tracking of property rights is both a cultural and administrative challenge (Bird and Slack, 2010; Bird and Smart, 2002). Not surprisingly, property taxes and land rent constitute a much larger share of locally generated revenue in urban LGAs than in rural LGAs: 10.6% in urban LGAs compared to only 3.6% in rural, and the urban LGAs in aggregate collect nearly three-times more total funds from these taxes than do the rural LGAs (Tsh 34B vs. Tsh 12B), despite much higher populations in the latter. Yet even in urban areas these taxes sit only in fourth place in terms of their contribution to local revenue.

More generally, any system of local finance requires skilled local officials to administer tax and spending activities. In addition, there is often tension between central government authorities and local officials in the transition from centralized to decentralized governance with mistrust on both sides and a reluctance on the part of central authorities to yield decision-making. In fairness, this reluctance is in part due to limited administrative capacity at the local level. Finally, in a developing country context, limited access to information and data can inhibit improvements in the implementation of more effective tax and spending policies. It is within these constraints that national and subnational officials must work together to develop practical approaches to generating revenues and providing essential public services.

### 3.3 Determinants of Avoidance and Evasion

Tax compliance depends on the perceptions by taxpayers of the legitimacy of government and the purposes of the tax. It may be that tax compliance is lower in some areas because of how the tax is used, which in the case of many local governments is to pay for local government “sitting-in allowances”. Agricultural stakeholders prefer transparency and a stronger link between taxes paid and public service provision related to agricultural production.

As described earlier, there are two categories of potential distortions that cess tax may cause: (1) tax evasion; and (2) tax avoidance. Distortions are generally more likely when rates are higher, enforcement is weaker, and when perceptions of legitimacy and fairness are in question. In the face of a tax, an economic agent must decide whether they will pay the tax without changing economic behavior, evade the tax, or avoid paying some of the tax by altering behavior. While evasion and avoidance are not mutually exclusive, there are potential trade-offs. If the cost of a bribe is relatively low and the risks and penalties of being caught are also low, it may be easier to pay a bribe and thus evade part or all of the tax. On the other hand, if the cost of the bribe is high and there is substantial penalty associated with being caught, it may be optimal to alter one's economic activity to reduce the tax payment. Finally, if altering behavior is difficult it may be optimal to simply pay the full amount of the tax.

The information that is available suggests that there is substantial tax evasion (Centre for Sustainable Development Initiatives, 2013). However, to date more detailed analysis of the degree of tax evasion and/or avoidance is unavailable. In the next section, we use data on crop production to estimate cess tax revenue potential and then compare potential revenues with actual cess tax collections to obtain a preliminary evaluation of tax evasion. We do not have a means at present of determining the degree of avoidance, but given the evasion that is occurring we believe avoidance activity is minimal. We note, however, that if policies are put in place to reduce evasion, avoidance may increase. This avoidance would take the form either of traders changing the location of purchases in an effort to avoid the tax, or of farmers altering their mix of agricultural production (reducing production of the taxed crop and increasing production of some other crop).

### 3.4 Tax Incidence

It is important to make the distinction between the “statutory” and “economic” incidence of a tax. In the case of the cess tax, by statute the traders pay fees to local authorities. However, economic incidence depends on a variety of factors and will differ depending on the nature of the product:

- Percent of product exported out of the district
- Percent of local governments using cess tax and differences across jurisdictions in use
- Ability of trader to pass tax back to farmers
  - Mobility of farmers
  - Substitutability of crop production (away from taxed to untaxed products)
- Ability of trader to pass tax forward to retailers
- Ability of retailers to pass tax forward to consumers

- Responsiveness of potential agricultural producer entrants to the cess tax

Changes in prices due to taxation is a natural market response; there is little policymakers can do to enforce the “statutory” incidence. Data is lacking to quantitatively determine the incidence of the cess tax in Tanzania. Several factors suggest, however, that tax incidence falls primarily on farmers, i.e., that farmers pay most of the tax through reductions in the price that they receive from traders. First, once the harvest occurs, supply to the market is much less “elastic” than is demand, meaning that farmers have limited willingness or ability to increase or decrease what they supply to the market, while consumers can more freely consume more or less of the product based on the price. Inelastic supply and elastic demand will tend to push the cost of the tax to those doing the supplying – farmers – through lower prices. Second, most farmers we interviewed certainly perceived that they were receiving lower prices due to the cess. Finally, most traders freely admitted that they deduct the cost of the tax from what they pay farmers. This behaviour is fully predictable from economic theory, since traders are “price-takers” who have little if any influence over the price they receive and must therefore do all they can to factor all their costs – including the cess – into the price that they pay farmers.

### **3.5 Implications for Workable Tax Systems in Developing Countries**

it is important to use the principles discussed above within the context of the real world setting where a particular tax is being considered. In the current local government tax system in Tanzania, the cess tax provides a significant amount of local government own source revenue for many rural LGAs. However, locally generated revenues are small in comparison to national government transfers to local units (see next section). If the cess tax is judged to be ineffective, it could potentially be replaced by a land or property value tax. However, several factors need to be considered in attempting to do this. As already shown, while property taxation is used in some urban areas, it is currently not a significant source of revenue in rural Tanzania (3.6% overall in rural areas, 10.6% in urban areas, as noted above). Use of the land or property value tax in rural areas would require the formalization and tracking property rights, and the determination of value. In most industrialized nations, a complex system of private property titling and property assessment is in place to ensure a fair and efficient collection of revenues. At this time, designing and implementing such a system widely enough in rural Tanzania to replace cess revenues should be considered a longer-run goal.

In an effort to facilitate more effective tax revenue collection mechanisms, semi-autonomous tax authorities have been created over the last decade across Africa (Mann, 2004). These authorities are established outside the traditional line agencies associated with national ministries of finance. The main objective of these tax authorities is to reduce corruption and improve incentives for revenue collection. The employees of these agencies work on commission where pay is based on the success of their tax collection efforts. The agency itself, including overhead costs, is generally funded by a combination of central government funds and donor funds. After a decade of experience, Mann (2004) suggests that these approaches have in some cases improved tax collections, but that overall performance has been less than expected or proclaimed by proponents.

In the context of the cess tax, it is important to note that these agencies have achieved most of their success in urban areas; they been far less successful or involved in rural tax collection efforts.

A second challenge relates to the nature of the economic sectors being taxed. In advanced economies, most businesses operate in formal environments. This allows tax authorities to readily assess taxes and ensures that the judicial process can handle non-compliance issues. Yet in Tanzania and most of Africa the informal sector predominates. Because of the lack of formal business registration systems, equity markets, and property and title systems, tax authorities face significant obstacles in assessing and collecting taxes as well as handling non-compliance. Any workable tax system must address collection and compliance issues facing tax collectors where a large number of businesses operate in the informal sector.

Finally, in a system such as Tanzania's where local governments rely on transfers from the national government, local authorities are dependent upon and sensitive to national government decisions. There may thus be far less incentive to engage in efficient local tax collection efforts. Further, the stability of national rules regarding local tax collection will also affect the incentives facing local tax collectors.

We return to these issues in the final section when we consider reform options for the current system of rural taxation.

#### 4. The Structure of Local Government Revenue in Tanzania

In this section we use primarily the LGA-level PMO-RALG data base to examine our first empirical question: the pattern of reliance on cess across LGAs – rural and urban - in Tanzania. We complement these data at times with national level data that provide a longer time period over which to examine the role of the cess but which do not allow disaggregated analysis.

Analysis revealed five key findings. First, and as shown by earlier studies, cess is a very small share of total national LGA revenue (Table 3). The produce cess contributed only 1.8 percent of total LGA revenue in the country during the period of time covered by the PMO-RALG data base. About 5 percent came from other own-revenue sources, with 93 percent of funds available to LGAs coming from central government transfers. LGAs thus rely overwhelmingly on central government for their operating funds.

Table 3. Selected indicators regarding local government finances in Tanzania

	Rural	Urban	National
# of districts	106	25	131
Share of population	77%	23%	100%
Mean per capita LGA revenue (Tsh)			
Central government grants	231,500	248,800	234,800
Non-cess own revenue	7,800	24,200	10,800
Cess	5,700	1,200	4,900
Share in total local revenue			
Central government grants	94.5%	84.3%	93.0%
Non-cess own revenue	3.1%	10.2%	4.8%
Cess	2.3%	0.2%	1.8%
Cess share in own local revenue	43%	2%	23%

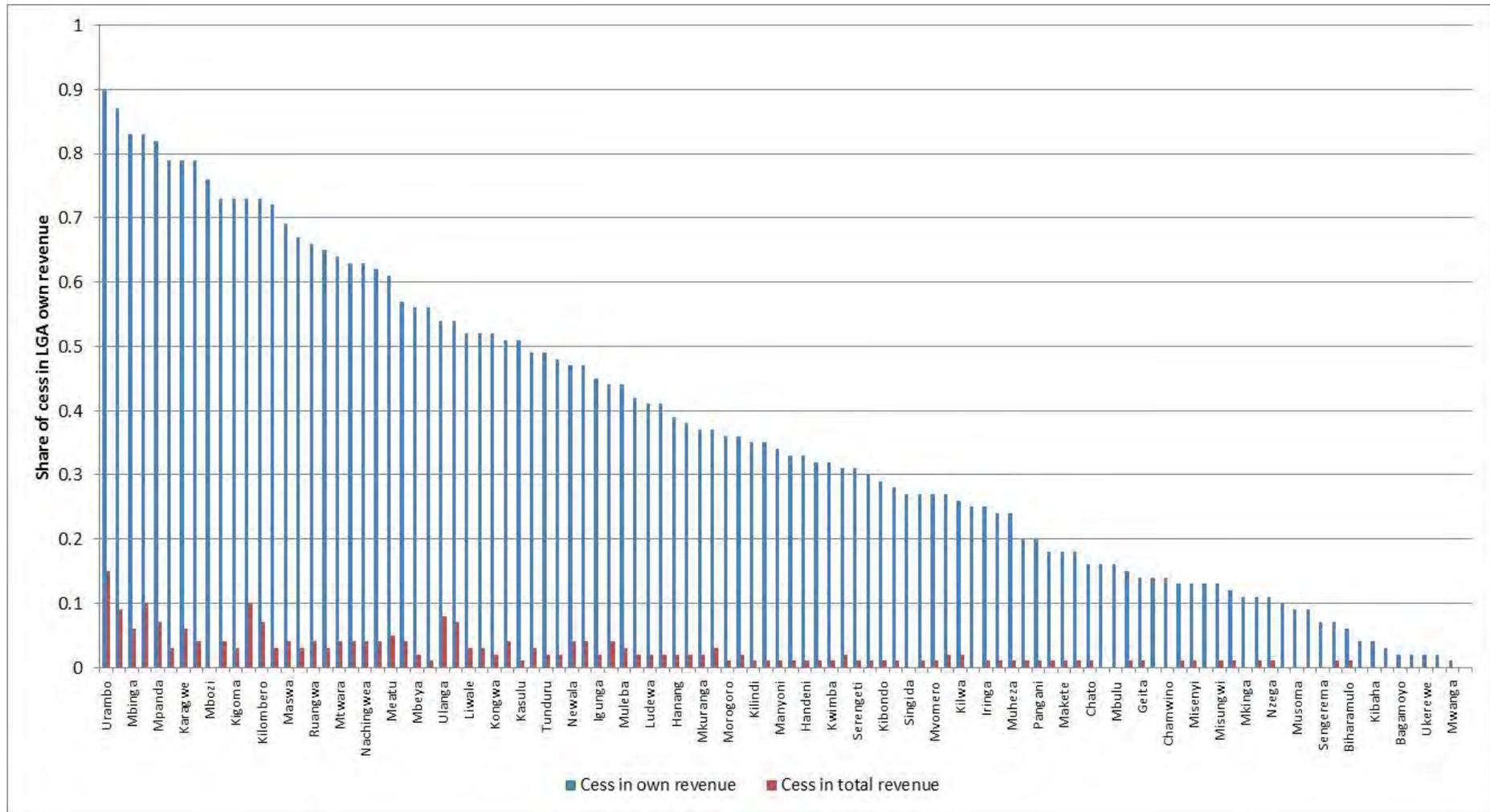
Source: PMO-RALG database on “Consolidated Quarterly Financial Reports for Local Government Authorities”. Note that number of districts reflects those covered over the entire period of the PMO-RALG database.

Second, and as expected, cess is dominantly a rural phenomenon, with rural LGAs accounting for 97% of all revenue from the cess.

Third, despite its very small overall contribution to LGA financial resources, produce cess is by far the largest single source of *own-source* revenue for rural LGAs, at 43%, based on Ths. 149 billion in collections across 106 rural LGAs over the entire time period, or about Ths. 46 billion per year (Table 3). A large number of miscellaneous licenses, fees, and other charges account for 48%, while the service levy accounts for six percent. Land rent – often considered a “good” tax in terms of its effects on economic incentives, provides only 2% of all local revenue.

As anyone familiar with the issue of cess in Tanzania will know, the first three findings simply confirm results from previous research on this issue. Our fourth finding is new: reliance on cess varies dramatically across rural LGAs (Figure 1), from 0% in Ngorongoro to 90% in Urambo, with a nearly even distribution between those two extremes. Of the 106 rural LGAs as of 2013, cess share

Figure 1. Share of cess in rural LGA own revenue, June 2010 – September 2012



of own revenue exceeded 50 percent in 33, with a range of 51% to 90%. These 33 LGAs accounted for 64% of all cess collected nationally. As a share of total LGA revenue from all sources including central transfers, cess in these 33 LGAs was still low, ranging from only 1% to 15%, with a simple average share of 5%. The top 10 LGAs in terms of reliance on cess, all with at least three-quarters of their local revenue coming from the cess, were Urambo, Uyui / Tabora, Mbinga, Tandahimba, Mpanda, Songea, Karagwe, Namtumbo, Mbozi, and Masasi. Meanwhile, cess accounted for less than 10% even of locally generated revenue in 14 rural LGAs. The bottom 10 rural LGAs in terms of reliance on cess, all with cess contributing 6% or less to own-source revenue – and 1% or less of total revenue including central transfers - were Biharamulo, Arusha, Kibaha, Rorya, Bagamoyo, Longido, Ukerewe, Monduli, Mwanga, and Ngorongoro.

To better understand the reasons behind the wide variation in dependence on cess, and the contribution that cess makes to overall own revenue of rural LGAs, we conducted three sets of simple regression analyses. Each set explained different components of district level revenues: from cess, from non-cess own sources, from central government, and the sum of these – total revenue available to the district. We explained these revenues with independent variables for the district’s population, regional “dummy” variables, the presence of a large commercial farm in the district, and three different approaches to capturing the value of agricultural production in the district: total value over all crops, total value broken by traditional export crops and food crops, and total value broken by individual traditional export crops and food crops.<sup>4</sup> Revenues are for fiscal years 2010 through 2012 (three years) and production is also adjusted to reflect three years. Results for the regression explaining cess revenue are found in Table 4 (see Annex B for results of the other regressions).

The key results from this analysis are:

- Having a large commercial farm (plantation) in a district has a large and significant effect on cess collections (all models) – the 40 districts that had such a farm collected, on average, Tsh. 8-10 billion in additional revenue over the three years covered by this analysis. This result strengthens the finding from the field work that LGA officials focus their tax collection efforts on activities that generate a higher revenue yield – a greater amount of revenue collected relative to the cost of collection. This approach is consistent with the principle of an efficient tax system, though if pursued too aggressively can violate principles such as fairness, by undermining the broad-based nature of the tax and by pushing vertical equity beyond what many would consider reasonable (see section 3 for a discussion of these principles);
- Cess collections are, as expected, strongly related to the total value of marketed agricultural production in the district, with Tsh 1 million in additional marketed value generating, on average, about Tsh. 19,000 in new revenue (model 1). Note that the average cess rate

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<sup>4</sup> Export crops were team, coffee, cotton, cashew, tobacco, sisal, and sugar. Food crops were maize and rice. Though this list does not cover all crops, it likely covers well over half of the value of marketed agricultural production. Lack of production and marketing data at district level for crops such as vegetables, fruit, legumes, sesame, and others precluded their inclusion in the analysis.

implied by this regression – 1.9% (19,000/1,000,000) – gives a first indication of how much cess might go uncollected. LGAs indicate that they typically charge 2% to 5% in cess, yet on average they are only collecting 1.9% of the marketed value that we have quantified in this analysis. And, because we have not captured the value of all crop production nor of cattle off-take (see footnote 4), this 1.9% is in fact an over-estimate of the average cess rate that LGAs effectively collect. We will return to this issue in the next section and show, in other and more direct ways, what the likely magnitude of under-collection is.

Table 4. Correlates of cess revenue at rural district level

Variable	Model 1		Model 2		Model 3	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
(constant)	4.2 E8		6.6 E8		7.6 E8	
Population	-1,757		-2,188	*	-1,980	
Northern	-1.8 E8		-2.8 E8		-3.9 E8	
Central	3.4 E8		2.7 E8		2.7 E8	
Western	1.7 E9	***	1.8 E9	***	1.7 E9	***
S. Highlands	6.5 E8		4.9 E8		3.8 E8	
South	5.0 E8		-4.0 E8		-3.5 E8	
Eastern	3.3 E8		9.9 E7		01.0 E7	
Plantation	9.8 E8	***	7.7 E8	***	7.9 E8	***
Total value marketed ag prodn ('000,000)	19,000	***				
Food crop marketed value (maize, rice)			15,000	***		
Cash crop marketed value (trad. exports)			48,000	***		
Tea marketed value					123,000	
Coffee marketed value					59,000	**
Cotton marketed value					-58,000	
Cashew marketed value					42,000	***
Tobacco marketed value					31,000	
Sisal marketed value					---	
Sugar marketed value					55,000	*
Maize marketed value					20,000	
Rice marketed value					27,000	***
R-square	0.427		0.469		0.490	

Note: \*\*\* = significant at 1%; \*\* = significant at 5%; \* = significant at 10%. Source: PMO-RALG database for district revenue; National Bureau of Statistics for district population; various sources for presence of commercial farm (plantation).

- Traditional export crops generate more than three times more revenue per Tsh of marketed value than do maize and rice – Tsh. 48,000 vs. Tsh. 15,000 per Tsh 1 million of marketed value (model 2). This result also confirms indications from the field work, that LGAs preferentially target the traditional export crops for cess collection, based on the greater efficiency of such an approach;
- The main contributors to this revenue are coffee, cashew, sugar, and rice. Surprisingly, tobacco does not show a significant effect on cess collections, nor do cotton or tea. Note, however, that this does not mean that these crops are not charged cess by local authorities,

but rather that their presence does not appear to generate higher than average *total* cess revenues compared to other districts without these crops; and

- Western region outperforms the rest of the country in cess collection, with a large and highly significant coefficient in all three models. Controlling for other factors, Western region collected about Tsh. 1.7 billion more in cess than other regions during the three years of this analysis. This result suggests either that, for whatever reason, Western is achieving greater efficiency in its cess collection than other regions. Investigating the reasons for this – whether it is due to superior management or to characteristics of the region that make cess collection easier – might generate insights for other areas.

Regressions explaining non-cess local revenue (Annex A) showed that it is driven entirely by population, with agricultural activity having no systematic impact on these collections. Yet there was a great deal of unexplained variation in these results, likely related to (a) more robust non-farm economic activity in some districts than others, making non-cess tax collection easier in the economically more active districts, and (b) varying effectiveness of different LGAs in local tax administration. Once again, Western region stands out for high non-cess collections, even controlling for all other variables. Regressions for central government revenue and total revenue across all sources showed the dominant role of population, with no significant effect of agricultural production value. These results reflect (a) the central government’s formula for allocations, which is driven primarily by population, and (b) the dominance of central government revenues in overall LGA revenue (93% nationally), which swamp the effect of the cess.

We touched on our fifth finding from analysis of the PMO-RALG database in the introduction: that the tax base of rural LGAs has become quite limited since the reforms of 2003. Before these fiscal reforms, the development levy – a flat “head tax” levied on all males above the age of 18 - was the single most important source of own-source revenue in most LGAs, amounting to 20% of all own-source revenue across all rural and urban districts, and higher than this in rural districts. Very unpopular due to the way it was collected and the risk it posed to the poorest citizens of being thrown in jail for non-payment, this tax was abolished in 2003, along with the business license. With the abolition of these two sources of revenue, the importance of produce cess in own revenue has risen, as shown in Table 5.

Though the Ministry of Finance website indicates a list of 97 items that LGAs could tax, Table 5 also shows that nationally across rural and urban LGAs, two of these sources have accounted for approximately 40% of total own-source revenue in recent years: agricultural produce cess at 19% to 25%, and the city service levy at 18% to 19%. Two other groups of revenue, “licenses and fees” and “charges” account for another 35% to 36% between them<sup>5</sup>. The recent reinstatement of the

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<sup>5</sup> The categories in Table 5, and the data from 2002 to 2006, are taken from Sarzin (2007). Data past that time are computed by the authors from the LGA-level PMO-RALG database. Agricultural produce cess, city service levy, property tax, and land rent map uniquely from the LGA database to Sarzin’s categories. We map the following categories from the LGA database into Sarzin’s “licenses and fees”: licenses and permits on business activities, licenses on extraction of forest products, licenses/permits on vehicles and transport, permits on

business license fee in 2013 might reduce pressure on LGAs to raise revenue from the produce cess, but estimates of potential revenue from this license fee are needed before reaching firm conclusions – and in most rural areas it is unlikely to be a major revenue generator.

Table 5. Percentage Share of Local Revenue Collections by Source (to be replaced with a graph)

Revenue Source	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Development levy	20	7	0	0	0	0	0	0	0	0	0
Ag. produce cess	16	19	27	27	22	NA	NA	18.7	22.5	25.5	21.7
Licenses and fees	20	25	13	13	2	NA	NA	21.6	19.8	20.0	18.8
City service levy	16	16	25	25	24	NA	NA	18.6	18.2	18.1	18.6
Charges	10	11	15	15	26	NA	NA	16.9	19.0	17.7	17.5
Other revenues	11	15	10	10	15	NA	NA	14.9	11.8	12.4	17.4
Property tax	6	6	10	10	10	NA	NA	7.9	4.6	3.9	4.2
Land rent	1	1	1	1	2	NA	NA	1.4	4.1	2.4	1.9
Dev. Levy	20	7	0	0	0	NA	NA	0	0	0	0

Source: 2002-06 from Sarzin (2007); 2007-12 from LGA Consolidated Quarterly Financial Reports

Summarizing, analysis of the PMO-RALG database shows that cess is a very small share of total funds available to LGAs but a high share of the revenue that *rural* LGAs are able to generate on their own, amounting to more than half of own-source revenue in about one-third of rural LGAs. The heavy reliance of rural LGAs on cess for their own-source revenue is related to limited non-agricultural economic activity in many rural areas, the narrow range of mechanisms that local governments have to raise revenue, especially since the fiscal reforms of 2003, and the resulting low levels of own revenue that the LGAs are able to raise. The regression analysis provided initial insights into topics more fully explored in the next section – the possible magnitude of under-collection of cess, and the importance of traditional export crops and, beyond this, of the presence of a large commercial farm, in enhancing cess collections.

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construction activities, specific service fees, parking fees, and central bus stand fees. For Sarzin’s “charges”, we use market fees and charges, sanitation fees and charges, fines and penalties, income from sale or rent, guest house levy, and other levies on business activities.

## 5. The Practice of Local Taxation in Rural Tanzania

This section draws from the field work during March and April of 2014 and addresses questions two through five from our introduction.

### 5.1 How variable is the cess rate across rural LGAs?

The overall finding on this issue is that cess rates span the entire range allowed in the LGA Finance Act (0% to 5%) and show little consistency across LGAs, with neighbouring LGAs not uncommonly having different rates for the same crop, especially food crops. Table 6 shows examples of great differences in cess on maize, rice, and beans in nearby districts.

Table 6. Examples of differenced in cess charges in neighboring LGAs

<i>Crop</i>	<i>LGAs and Produce Cess Charges</i>			
Paddy	Tshs 1000 per 100 kg (Mvomero DC)	Tshs 2000 per 100 kg (Kilolo DC, Lushoto DC)		
Maize	Tshs 500 per 100 kg (Babati TC)	Tshs 1000 per 100 kg (Babati DC, Sumbawanga MC)	Tshs 1800 per 100 kg (Lushoto DC)	
Beans	Tshs 1000 per 100 kg (Handeni)	Tshs 2000 per 100 kg (Moshi DC)	Tshs 3000 per 100 kg (Muheza DC)	Tshs 4000 per 100 kg (Lushoto DC)
Sugarcane	Tshs 200/ton (Kilombero)	Tshs 1410/ton (Mvomero)		

Though we have argued that tax evasion is probably easy enough and cheap enough that it predominates over distortion, it is likely that differences of this magnitude in nearby districts do lead to some changed marketing behaviour, at least for traders if not farmers. The fieldwork documented instances in which a LGA purposely reduced its cess rates in order to accrue revenue from a neighbouring LGA. For example, in Babati LGA officials are of the view that Babati TC reduced its cess on maize from Tsh. 1,000 to Tshs 500 per bag in order to attract traders. Similarly in Lushoto bean growers have complained that traders preferred Handeni where cess rate was Tshs 1,000 per 100 kgs as compared to Lushoto where cess rate is Tshs 4,000 per 100 kgs. At farm level, sugarcane growers in Mvomero sugarcane growers are reluctant to pay the cess rate of Tshs 1410 per ton while in the neighbouring LGA, Kilombero, the cess rate is nly Tshs 200 per ton. In fact, some sugarcane growers in Mvomero are considering shifting their farming activities to Kilombero.

When they are targeted, maize, rice and other food crops are typically charged 2% to 3%, but several LGAs charged 5%, and we've seen in Table 6 that actual charges can be quite variable. Traditional exports are nearly always targeted for cess collection and are most often charged the maximum cess rate of 5%. These practices are the norm but can vary across LGAs or over time. For example, Babati's local by-laws specific a fixed ces rate of 3% for all crops; and the central government has at times directed that cess on cotton and tobacco be reduced to 3% when market prices fell to low levels. At other times, cashew cooperatives have unilaterally remitted cess at a rate of 3% when prices decline, though some LGAs have refused to accept this lower rate and opted for legal action

to enforce payment of the remaining amount. Tea is an exception to the pattern of export crops being charged 5%; based on agreement among stakeholders, tea has been charged Tsh. 12 per Kg of made tea (or about 1% of the Kg price). The team also documented cess rates on food crops that range up to the maximum 5%, especially for rice, and cases in which neighbouring LGAs charge 2% and 5% on these food crops.

There are several reasons why traditional exports might be systematically charged a higher cess. First, these crops are mostly produced by larger, more commercialized smallholders or by large commercial farms; charging a higher rate to such an agent compared to a semi-subsistence, typically poor, smallholder farmer who just happens to sell some surplus is likely seen as acceptable practice, given the larger farmers' greater average incomes and ability to pay. Thus, in practice, this approach likely makes the cess tax progressive, i.e., higher in percentage terms for those earning higher incomes (relating to the vertical equity concept of section 3). Progressive taxation is a widely accepted approach, though as we said earlier, people can disagree on how much more the wealthier should have to pay. The fact that these crops are exported and that the cess might thus be seen as not affecting Tanzanian consumers may also be a factor in their being charged a higher rate. Finally, these crops are marketed in a formal market and hence are easier than food crops to track, reducing opportunities for taxpayers to evade the cess. These characteristics reduce the cost of collecting cess compared to food crops such as maize or rice, making them a logical target for LGA officials aiming to meet their revenue needs at minimum cost.

The fact that the cess is a tax on gross revenue means that its effective rate on net revenue, or profits, might be dramatically higher than the stipulated rate when input costs are a high share of total revenue. Thus, another key finding is that the incidence of the cess on net return – the percent by which it reduces net return beyond variable inputs – is never less than the percent cess itself and varies widely across crops. This result stems directly from two facts. First, the design of the cess as a fixed percentage of gross revenue means that its incidence on net return starts at its face value (e.g. 5%) and rises logarithmically with the share of variable costs in gross revenue. If a farmer has no variable costs (uses no variable inputs including hired labor), then a 5% cess on gross revenue has a 5% incidence on net return<sup>6</sup>; if, instead, variable costs consume 50% of gross revenue, then the incidence of the 5% cess rises to 10%; and if variable costs consume 95% of gross revenue, leaving only 5% in net revenue, then the 5% cess consumes all of this, leaving no net return (see the dashed line in Figure 2 below).

The second fact driving this finding is that different crops tend to be produced under differing technology regimes and thus show different ratios of variable costs to gross revenue, leading to different incidence of cess on net returns. Table 6 shows summarized crop budgets for rice and maize under “intensive” and “traditional” technologies, and for onion and cashew under average technology<sup>7</sup>. Based on the ratio of variable costs to gross revenue in each case, the table shows the incidence of the cess on net returns, assuming a 3% cess on rice and maize and 5% on onion and

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<sup>6</sup> We do not remove the value of own labor nor the amortization of fixed assets in our definition of net return. Considering them would drive the incidence of the cess higher.

<sup>7</sup> See Annex C for more detailed crop budgets

cashew; it also shows the incidence assuming a 20% decline in yields<sup>8</sup>. Figure 2 plots these values along with the general logarithmic relationship explained above – one based on 5% cess and the other on 3%. For any particular crop and production system, the higher cess incidence is associated with the lower yield. One sees that, under expected yields, the incidence of the cess on net return ranges from more than double its nominal value (7% for intensive rice and traditional maize compared to 3% nominal) to nearly five times its nominal value (14% for intensive maize compared to the 3% nominal rate). The incidence rises to 10% or higher in all cases when yields fall by 20% below average levels, skyrocketing to 55% on intensive maize under low yields. This extremely high rate stems from the fact that maize has the lowest return beyond variable costs of any of the crops evaluated here. Note that, for the more technified farmers who have to amortize equipment (not just pay for variable inputs), actual incidence will be higher than shown in this analysis.

Two conclusions follow. First, while the cess has a moderate impact on net returns under expected yields, the incidence can become confiscatory when yields decline in the presence of high variable costs<sup>9</sup>. This becomes a particular risk for farmers attempting to intensify their production practices or move into higher-value (and higher input) crops in the presence of climate and pest risks. This could be especially problematical for smallholder farmers who are attempting to intensify, are rapidly learning how to do so, and who may be more exposed to high variability in returns until they increase their new knowledge sufficiently. Yet established, large-scale farmers are also subject to periodic sharp declines in net margins, so the risk is not confined to intensifying smallholders.

Table 6. Summary crop budgets and cess incidence on net returns

	Rice		Maize		Onion	Cashew
	Intensive	Traditional	Intensive	Traditional		
Yield	25	15	25	15	40	1,350
Price	60,000	60,000	30,000	30,000	65,000	1,200
Gross revenue	1,500,000	900,000	750,000	450,000	2,600,000	1,620,000
Variable costs	863,350	543,850	589,000	262,000	1,012,500	848,238
Cess incidence on net return	7%	8%	14%	7%	8%	10%
Cess incidence if yield 20% lower	10%	11%	55%	10%	10%	12%

Notes: (1) Yield and prices in bags of rice, maize, and onion; kg of cashew; (2) Cess is set at 3% for rice and maize, 5% for onion and cashew. Source: Farmer interviews during fieldwork

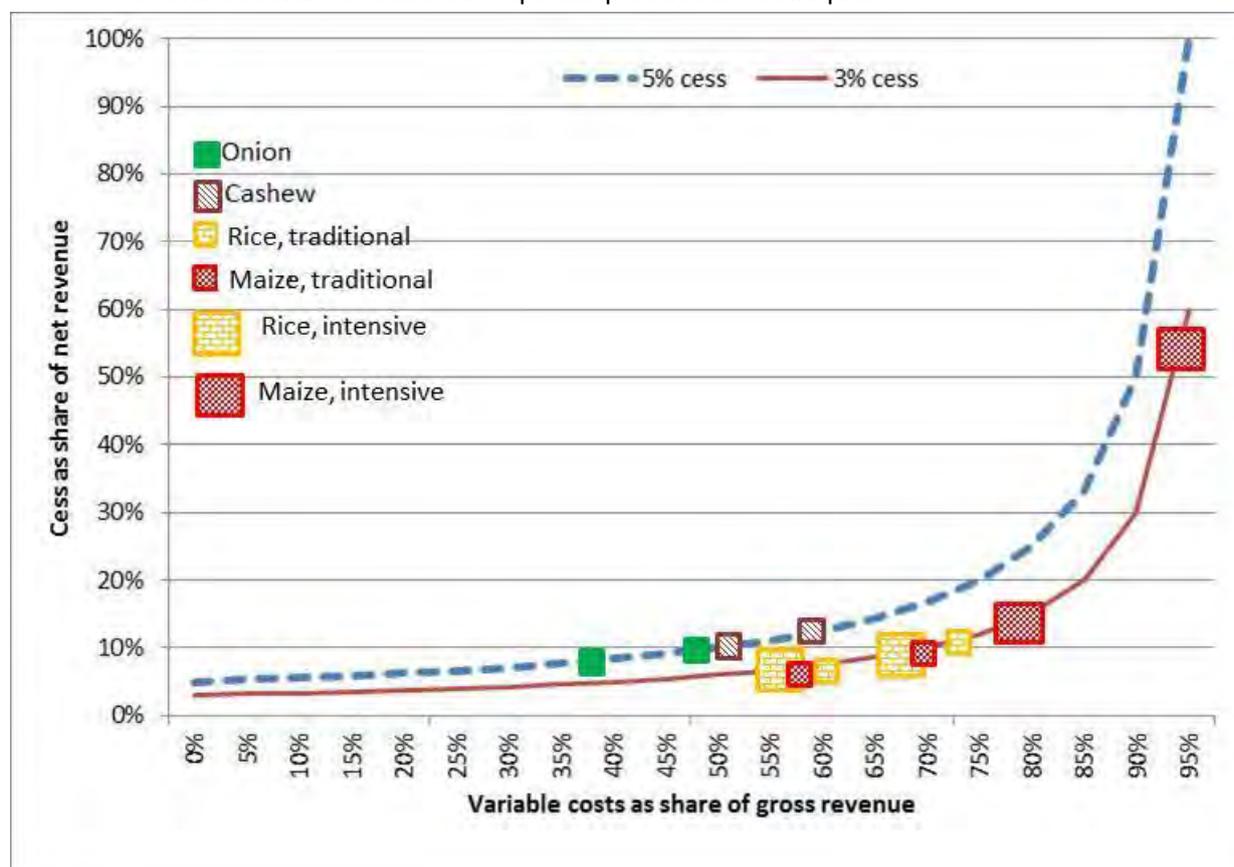
At the same time, and as explained above, this feature of the cess likely makes it progressive – it promotes vertical equity in the tax system. The problem is that the tax will be progressive only *on average*. In any particular case it could not be progressive at all, imposing a high percentage tax on a low income farmer who, for example, used inputs but had low yields, or a low percentage tax on a prosperous farmer who had outstanding yields. This is an unavoidable problem in any tax not

<sup>8</sup> The computations of net return under a 20% yield reduction reduce costs associated with harvest by the same 20%. Other costs remain unchanged. This analysis thus applies to a situation in which a farmer follows “average” production practices but achieves a lower yield.

<sup>9</sup> Note also that this analysis examines only cess so cannot comment on the total tax burden faced by more technified producers.

directly based on incomes or some good proxy for income<sup>10</sup>; and given the impracticality of Tanzania at this point in time operating in rural areas an income tax or a broad-based land tax tied to land values, the problem has no easy or immediate resolution.

Figure 2. Cess incidence on net returns as function of variable cost:gross revenue ratio, and estimated levels for selected crops and production techniques



In closing this section, we note that Tanzania is not unusual in the level of variability in its cess charges. Table 7 shows rates in place in neighboring countries. In general, Tanzania’s rates are somewhat higher than its neighbors, but not dramatically so, and these neighbors show very similar ranges of cess on individual crops. This is not an argument to do nothing about Tanzania’s situation but does provide context for the challenge that it faces.

<sup>10</sup> In fact it is a problem, though perhaps to lesser degree, in nearly all tax systems. Attempts at progressivity even in industrial country tax regimes typically result in many exceptions in particular circumstances.

Table 7. Local taxation of agriculture in other countries of East and Southern Africa

Crop/value chain	Kenya	Zambia	Uganda	Tanzania
Maize	Ksh. 583/ton Or \$6.65/ton	2% - 13% of wholesale price Or \$1.20 – \$10/ton	\$2.28 – 2.85/ton	Tsh. 5,000 – 18,000 /ton Or \$3.1 – \$11.25/ton
Sugarcane	4%	No data	No data	5%
Tea	1% of hammer price	No data	No data	3%
Coffee	4%	No data	0%	5%
Cotton	Ksh. 286.5/ton	No data	No data	5%
Horticulture	1% of turnover or Ksh. 25/box	No data	No data	3% - 5% of farm-gate price

Source: FAO/MAFAP except for Tanzania which is based on the survey for this study

## 5.2. Which crops contribute most to produce cess revenue?

This question is really three different though related questions. The most straightforward question – how much cess is directly collected, nationally, on each crop? – is the most difficult to answer. It could in principle be answered for selected traditional export crops with data from crop boards or industry associations that keep such records. Yet not all do, and there is no practical way to generate such data for food crops such as maize and rice. The second variation on this question was addressed in the previous section: what effect does the presence of a specific crop, and its marketed value, have on overall cess collection across LGAs? A given crop (e.g. tobacco) could pay a large amount in direct cess but, due to other reasons (e.g., officials deciding to put less effort into other cess collection due to the collections on that crop), not have a major impact on overall cess collections in the districts where its grown.

We address the third variant of this question here: what crops do LGA officials indicate they rely on for most of their cess revenue? Field work showed that no single crop predominates in cess revenue across most LGAs (Table 7). Tobacco was most often mentioned as the top revenue generator, but in only five LGAs. Maize was the top crop in four LGAs, followed by cotton with three. Cashew, coffee, rice, tea, and vegetables were each given the top spot in two LGAs. The others were banana, oranges, sugarcane, and flowers. Surprisingly, LGA officials did not mention livestock in any of the 27 as a major source of revenue.

We further found that most LGAs depend on one crop as their single largest source of cess revenue. In fact, in only two of the 27 sampled LGAs did authorities indicate that they received less than 50% of their cess revenue from a single crop, and 16 of the 27 relied on the top crop for more than 70% of their cess revenues. The two districts that rely least on their most important crop are the only ones among the 27 where tea is their main source of cess. Because the Tanzania Tea Board and stakeholders have agreed to charge only TSH 12/kg of made tea, which is typically less than 1% of

the producer price, local officials in these areas may be have no choice but to broaden the base of crops that they focus on if they wish to achieve their revenue collection targets.

Table 7. Anticipated target crops vs. actual covered crops in sampled LGAs

Zone	Region	LGA	Major Source of Cess	Share of the Major Crop in Cess Revenue
Northern	Arusha	Kiteto	Maize	Over 80%
	Tanga	Lushoto	Vegetables	Over 75%
	Kilimanjaro	Moshi	Coffee	Over 60%
	Arusha	Arumeru	Flowers	Over 90%
	Tanga	Muheza	Oranges	Over 80%
	Manyara	Babati	Maize	Over 70%
Central	Morogoro	Kilombero	Rice	Over 70%
	Dodoma	Kongwa	Maize	Over 80%
	Singida	Singida	Millet, Maize, Sorghum	Over 60%
	Morogoro	Mvomero	Sugarcane	Over 50%
Lake	Shinyanga	Kishapu	Cotton	Over 80%
	Shinyanga	Kahama	Tobacco	Over 50%
	Mwanza	Kwimba	Cotton	Over 50%
	Geita	Geita	Cotton	Over 50%
Western	Tabora	Urambo	Tobacco	Over 90%
	Tabora	Uyui	Tobacco	Over 75%
Southern Highland	Mbeya	Mbinga	Coffee	Over 90%
	Mbeya	Mbarali	Rice	Over 90%
	Mbeya	Rungwe	Banana	Over 60%
	Mbeya	Chunya	Tobacco	Over 70%
	Njombe	Njombe	Tea	Over 40%
	Rukwa	Sumbawanga	Maize	Over 80%
	Iringa	Mufindi	Tea	Over 30%
	Iringa	Kilolo	Vegetables	Over 80%
South Coast	Mtwara	Tandahimba	Cashew nut	Over 99%
	Mtwara	Masasi	Cashew nut	Over 60%

Third, traditional exports as a group are the largest source of cess revenue: tobacco, cashew nut, cotton, tea and coffee together garner the top spot in 14 of the 27 sampled LGAs. From the PMO-RALG data base we can show that these 14 LGAs (out of 106 rural LGAs in that database) account for 28% of all cess nationally (more than double the share of the average rural LGA) and 68% of all cess among the sampled districts. Other crops that contribute to produce cess revenue significantly are rice, maize, sugarcane and horticultural crops.

### 5.3. Cess administered and major concerns about its administration

The details of how cess is collected in the field go a long way in determining the impact it might have on the economic behavior of stakeholders, not least through its impact on their attitudes towards the fairness and efficiency of the tax. These attitudes can have major effects on tax evasion, which we have suggested is likely to be a bigger problem than tax avoidance. Several potentially problematic aspects of tax collection emerged through this study.

### 5.3.1. The predominance of outsourcing in cess collection

Outsourcing cess collection to a third party can be attractive to LGAs for at least two reasons. First, overstretched officials can concentrate on other duties that might receive too little attention if they have to collect cess. Delivery of local government services, for example, could potentially be improved in this way. Second, a contract with a third party can be designed to provide predictable and regular payments of cess revenue, a great benefit to local officials dealing with variable collections from other sources and sometimes unreliable or late central government allocations.

Twenty of the 27 sampled LGAs in this study outsource the collection of cess to either a private collection company or to a cooperative society processor, crops board, growers' association or a trading company. This practice had been identified in previous studies (Fjeldstad et al 2009; ACT 2012) but this study found it to be even more widespread, and also found that most of the seven districts not currently using outsourcing were considering moving to it. The nature of the relationship and specific contracts between LGAs and those to whom cess collection is outsourced is thus central to the effective implementation of any cess regime, and would be an appropriate focus of the capacity building needed at local level for effective tax administration.

In principle, outsourcing can increase the revenue yield of cess collection by replacing a set of public employees who may have little incentive for efficient performance with a private collector who has much stronger incentives. This is especially the case when the tax – like the cess – is “activity sensitive”, meaning that the value that should be collected depends on the level of economic activity, which may be difficult to ascertain. This information problem is acute for food crops such as rice and (even more so) maize, where production and sales come mostly from a large number of smallholder farmers and sales are to large numbers of small traders. In these circumstances, as explained by Fjeldstad et al (2009), an LGA that is managing the tax collection itself is faced with the problem of distinguishing between (a) poor performance by their tax collector employee, (b) collusion and corruption between the employees and those paying the tax, and (c) low collection due to a poor harvest and low marketings. Lack of staff and poor access to reliable information make these steep challenges. In these circumstances, a private employer to whom the LGA has outsourced the tax collection will have strong incentives to actively monitor their employees to ensure a high rate of tax compliance, and to make a serious assessment of revenue potential (which they may or may not share with the public officials designing their contract).

Whether outsourcing works to the favor of the LGA, however, depends on how well the LGA can negotiate and monitor its contract with the private collector. Central to this challenge is accurately estimating the potential revenue and being able to implement mechanisms to monitor actual collection. Outsourcing does not eliminate the problem of potential corruption; it shifts it from the frontline tax collector to the officials negotiating the contract with the private collector. Outsourcing also does not eliminate the information problem of determining whether low collections are due to a poor harvest or other factors. Analyzing tax outsourcing more broadly in Tanzania, Fjeldstad et al (2009) indicated that it was inconclusive whether the practice had improved efficiency and predictability of revenue compared to direct tax administration by LGAs, though in our interviews most LGA officials indicated that it has. Below, we present national estimates the share of potential

cess revenue that is actually collected; we are unable to do this at district level due to unreliable production data at this level.

The private collecting agents are normally procured through competitive tendering processes. In determining the successful bidder, the LGAs use projected revenues, experience in other areas, and perceived trustworthiness of the bidders. The highest evaluated bidder enters into a contract to collect produce cess on behalf of the LGA. Private collectors are normally required to deposit a bond equivalent to one- or two months' revenues and are also required to remit to the LGA the agreed amount at a specific agreed time, e.g., at the end of each month. The contracts also typically require that the agents use the LGAs' receipt books to collect produce cess using the bylaws issued by the LGA. To implement the contract the agent would normally deploy their staff to the collection points, at checkpoints, markets, collection centres and farms or households. Most of the revenue contracts are for a period of one year with the exception of a few LGAs such as Kilombero where private collectors were given much shorter contracts of three months during the peak period of the crop marketing season.

The fieldwork found cases where competition among bidders was lacking and the LGAs were forced to accept unfavourable bids; and Singida DC, for example, found no bidder at all and had to continue using their own officials. It was also found in some cases that the fact that private collectors were outside of the normal Government hierarchy reduced cooperation with other Government machinery such as Tanzania Police Force (TPF) and Tanzania Road Agency (TANROAD).

In the tobacco industry produce cess is collected by the primary cooperative societies on behalf of the LGAs and TTTA, the logistics company purchasing tobacco on behalf of the processors. Similarly in the coffee sector, cess administration is done by the Tanzania Coffee Board (TCB). Also in Mvomero, Mtibwa Autogrowers Association has been collecting produce cess on behalf of the LGA, while in Masasi DC, the cashewnut primary society handles cess collection. A problem in some of these cases, e.g. Masasi DC, is the absence of Memorandums of Understanding (MoU) between these agencies and the LGA. These arrangements are also potentially subject to the same problems enumerated above for the case of private contractors.

In the seven LGAs that handled their own cess administration (Singida, Rungwe, Arumeru, Kwimba, Tandahimba, Kiteto, and Masasi), LGA officials are normally deployed to villages and wards. The official could be coming from the LGA headquarters or in the field, at village or ward level, depending on the importance of the collection point. The cess collection staff could be accountants but sometimes Ward Executive Officers (WEOs) and Village Executive Officers (VEOs) are engaged. Collection of cess takes place at road check points, markets, collection centres and farm gates. There were also some cases where the collection of produce cess is done at milling machines.

A key observation about the decision to outsource cess collection or to make it an internal function of the LGA relates to learning: LGAs doing their own collection have the opportunity to learn how the trading system works and, if they are committed to doing so, make regular improvements in their tax collection system. This very same knowledge is needed if LGA officials are to properly design outsourcing contracts and monitor agents' performance. Unless learning and engagement

are explicitly addressed as further reforms are undertaken, a real risk of outsourcing is that LGA officials become progressively more removed from and less knowledgeable about the trade, the real potential revenue, and the details of tax practice that can promote more complete tax collection. As in other observations that have been made to this point, this observation calls attention to the need for regular and sustained capacity building at LGA level for tax administration, whether they choose to outsource or not.

### 5.3.2. Departures from the LGA Finance Act

A second finding is that LGA practice departs from the principle law governing the application of the cess (Local Government Finances Act No. 9 of 1982 - LGFA) in several ways. For one, though the LGFA stipulates farm gate price as the reference price for charging cess, some LGAs base cess on wholesale price or export (fob) price. For example, exporters of horticultural crops complained that cess is not based on farm-gate price but fob price. Coffee cess is based on the Moshi auction price while cess on tea is based on the price of made tea rather than green tea leaves. This problem is solved in the tobacco and cashew nut industries where cess is based on the “indicative farm gate price” set by the crop boards.

A second difference between LGA practice and the LGFA is that cess for food crops is frequently computed based on a commonly used sales unit that might vary both in weight and in price. Maize and rice, for example, typically have a fixed cess value per 100 kg bag. The fixed value is typically calculated at the beginning of the season as the stipulated (in the local by-laws) percent of the estimated current price of a 100kg bag, then remains at that level until the following season. This practice is not surprising, given the informality of these markets, the resulting impossibility of verifying the price of any given transaction, and the fact that many farmers and perhaps some traders would not easily be able to compute a proper value based on a fixed percentage rate and a changing price. In the interest of simplicity and practicality, local officials set fixed cess charges on the basis of commonly used sales units.

Two results follow from this practice, however: it generates wide variation in effective cess rates (i.e., cess as a % of the product’s value), and it generates effective rates that are, on average, likely below stipulated rates. Variation in effective rates occurs for two reasons. First, prices of a bag can double and even triple over the course of a marketing season, with the result that the effective cess rate can fall by half or even two-thirds. This seasonal price rise leads directly to the average effective rate being less than the stipulated rate. Second, traders attempt to minimize the cess they pay by filling their “100 kg bags” with more grain. This practice, known as *lumbesa*, is widely acknowledged in the field, and can reduce effective cess rates by as much as one-third by expanding the size of the bag and loading it with up to 150 kg instead of 100kg. Another negative side effect is that porters complain of back injuries due to the heavier weights; strikes by porters protesting over-weight bags have occasionally interrupted inter-regional trade.

A third finding is that cess is sometimes collected from farmers rather than traders, contrary to the LGFA. Though this is most common among commercial farmers, e.g. large sugarcane growers are often charged cess as they sell to processors, it farmers in several districts indicated that sometimes

happens that local officials charge them as they transport their produce to storage or milling facilities. Finally, the long complained about practice of sometimes charging cess on seed was reiterated during the field interviews.

### 5.3.3. Internal Controls in Produce Cess Administration

Internal controls in cess administration include target setting to guide expectations regarding cess collection, and use of receipts. Both suffer from systemic weaknesses and practices that may actively undermine the effectiveness of the controls. Target setting is a common practice whether cess administration is outsourced to private agencies or handled internally by LGA staff. In outsourcing, the standard approach is that collection agents retain all additional revenue that they might collect once they have remitted the target amount to the LGA. Some LGAs that administer cess internally have designed similar incentive schemes for their officials. For example in Mafinga DC, ward and village executive officers are eligible for commissions of up to 15% of the total revenue remitted to the LGA.

While this approach provides strong incentives for collection agencies to collect the cess, in the current circumstances in Tanzania it leads to two serious problems. First, it was commonly asserted in interviews of stakeholders that private agents use “predatory practices” such as raising the cess rate beyond that stipulated by the LGA, charging cess on crops that are not on the LGA’s list of crops to be charged, and behaviour that is viewed as harassment by cess payers. These practices have at times led to violence. For example, in May 2014 maize traders in Kibaigwa market caused civil unrest in protest of what they considered to be unethical cess administration. During the same month the media reported an incident in Handeni district where arrest of a trader over a cess dispute resulted in civil unrest and deaths.

Two problems are associated with the setting of the target itself. First, weak data systems at local level combined with natural yield variation mean that local officials may have little ability to accurately predict potential cess value for that year. Second, the setting of the target presents obvious opportunities for rent seeking, in which the target is purposefully under-estimated and the excess profits that result are split in some way between the private collector and local officials. Though the nature of this practice makes it nearly impossible to identify through interviews, comparison of actual cess revenue to estimated potential revenue (see below) suggests that this problem is likely an important contributor to the low cess collection in the country.

With regard to receipts, interviews indicated that in some areas, collectors use “sleeping carbon” to under-report revenue collections. In this practice, the carbon paper that is supposed to be used to ensure an accurate copy of the receipt for LGA controls, is not used; instead, the collector completes a second receipt for the same transaction, recording a lower amount and pocketing the difference. The survey also noted that some VEOs/WEOs who collect produce cess failed even to submit receipt books and the collected revenue to the LGAs. As a result, as witnessed in Singida DC, there were pending cases against VEOs related to the un-remitted produce cess collections. Related to this is the fact that cess collected in wards and villages sometimes stays for extended periods of time before being submitted to the LGAs, leading inevitably to “leakage” of funds into personal

expenditures. Finally, several interviewed LGA officials indicated that the collection of produce cess is in addition to their primary responsibilities and that they had difficulty giving it priority in their daily activities.

As an evasion tactic, traders in some areas use the same receipt, received when they did pay cess, for multiple transactions. To counter this, some LGAs such as Kongwa reject any receipt which is older than seven days. While understandable, this leads to conflict when a trader has paid the cess but failed to transport his produce within a week, as he will have to pay the cess again.

Other weaknesses in internal controls include:

- When operated by the LGA, check points are typically manned only during daytime while trade takes place throughout the day and night, providing clear opportunity for evasion.
- Cess administration is usually relaxed during off-season to the advantage of stockists who are often large traders. Some LGAs officials do not declare revenue collected during off-season. This practice opens up the possibility that farmers of maize or rice or other food crops will see their price reduced because of the cess but that the trader, after storing the grain, will not pay the cess; farmers receive lower prices than they should and the stockists enjoy excess profits.

All of these problems are more acute in food crops, which are dominated by small-scale production and often by small-scale, informal marketing (at least at rural level).

#### **5.4. How much of the potential cess is actually collected?**

Table 8 presents an estimate of potential cess revenue at national level in 2010. Because the value of marketed agricultural production is the basis for the calculation, we chose 2010 due to the availability of agricultural census data that could provide reliable production numbers. Sources for price and marketed surplus data are as indicated in the table, while revenue data came from the PMO-RALG database for that year, including all urban and rural LGAs. Based on findings from the fieldwork we chose cess rates of 5% for the export crops except for tea, where the rate was 1%. Food crops we set at a cess of 3% even though we know that in some districts authorities charged 5%. Livestock cess rates are per head. All assumptions chosen were cautious, resulting in a lower-bound estimate of potential revenue and thus an upper bound estimate for the share of potential revenue that is actually collected. We use two denominators for the measure of collection: the value of marketed production for all crops and livestock that we present in the table, and based just on the “major” crops (no livestock): traditional exports plus maize and rice. Note that the first figure especially is an underestimate, since we have no national estimates of the production and marketing of horticultural crops, which have a meaningful share in overall agricultural production.

Results indicate that LGAs collected, at most, 50% of the potential revenue available to them considering only the major crops. Expanding the list to include all crops for which we had data (and recall that we know some districts did include horticulture, beans, livestock, and other crops in their collection), the figure falls to a maximum of 28%. It thus appears that Tanzania in 2010 collected, at

best, approximately one-fourth of the cess that was available to be collected by an efficient taxation system. We suspect that, if it were possible to distinguish in our analysis between traditional export crops and food crops (i.e., if data were available to show which crops generated how much revenue), the level of under-collection would be far higher in the food crops, due to the informality of production and marketing that has already been discussed.

Table 8. Estimate of actual cess revenue vs. potential revenue in Tanzania, 2010

Crop	Production (MT)	Share marketed	Producer price (Tsh/ton)	Cess rate	Potential revenue (Tsh)
<b>Traditional export crops</b>					
Coffee	60,575	1	1,250,000	0.05	3,785,937,500
Cotton	267,000	1	650,000	0.05	8,677,500,000
Cashew nut	121,070	1	800,000	0.05	4,842,800,000
Tea	158,465	1	120,000	0.01	190,158,000
Tobacco	130,000	1	2,100,000	0.05	13,650,000,000
Sisal	35,000	1	800,000	0.05	1,400,000,000
Sugarcane	3,000,000	1	69,000	0.05	10,350,000,000
				<b>Sub-total</b>	<b>42,896,395,500</b>
<b>Food crops</b>					
Maize	3,326,000	0.28	483,800	0.03	13,516,597,920
Rice	868,000	0.46	792,325	0.03	9,490,785,780
<b>Legumes</b>					
Beans	867,530	0.6	800,000	0.03	12,492,432,000
Pigeon peas	272,000	1	960,000	0.03	7,833,600,000
Chick peas	38,000	1	960,000	0.03	1,094,400,000
Potatoes	1,492,560	0.6	300,000	0.03	8,059,824,000
Sesame	144,420	1	2,500,000	0.03	10,831,500,000
				<b>Sub-total</b>	<b>63,319,139,700</b>
<b>Livestock</b>					
Cattle	19,200,000	0.10		3000	5,702,400,000
Goat	37,000,000	0.23		500	4,181,000,000
Sheep	36,000,000	0.23		500	4,068,000,000
				<b>Sub-total</b>	<b>13,951,400,000</b>
<b>Potential Revenue</b>					
All crops					120,166,935,200
"Major crops"					65,903,779,200
<b>Actual Revenue</b>					33,500,000,000
<b>% Actual/Potential</b>					
All crops					28%
"Major crops"					51%

Source: Export crop production from respective crop boards; prices from various sources including crop board annual reports. Food crop production from agricultural census (2010); prices from ???; marketed surplus from MAFAP value chain reports. Livestock populations from ???, Offtake numbers from "Livestock Brief: United Republic of Tanzania, FAO, March 2005."

## **5.5. Allocation and Use of Produce Cess Revenue**

One of the major concerns of stakeholders is how the cess revenue is spent and fiduciary accountability. There has been a perception that cess revenue is used to pay excessive sitting fees and other allowances to councillors. Cess payers frequently express dissatisfaction the level of services provided by LGAs. Reluctance to pay cess – and active evasion - is partly attributed to public dissatisfaction with how cess revenue is managed and invested. The LGAs' annual audit reports by the Controller and Auditor General (CAG) have confirmed these concerns as reflected by a number of audit queries. The GoT in the past reduced revenue allocations to LGAs that performed poorly in the audit reports and that failed to respond to queries regarding their performance. This approach was based on the assumption that the citizens would hold their LGA officials accountable for the lost cess revenue. However, the GoT in later years decided to do away with this approach as denying funds to LGAs punished the innocent civilians.

Field interviews indicated that in most surveyed LGAs produce cess revenue is used, consistent with widespread perceptions, to finance administrative functions such as payment of allowances to councillors and committees. However, some exceptions were noted in a few LGAs, where cess revenue is used to finance development activities. For example in Mbinga cess has been used to finance a building and rehabilitation of rural roads. In some LGAs cess revenue is used to finance training of farmers or facilitate their attendance at the annual agricultural show (Nane Nane). Little more can be said at this point about the use of cess funds. Our conclusion is that widespread perceptions of use for councillor allowances are not generally wrong, but that documented instances exist of the funds being used for more concrete investments.

## 6. Potential Reform Paths for the Produce Cess in Tanzania

As indicated in the introduction, there are varying opinions on the issue of produce cess and its possible reform. Here we first capture the opinions of various stakeholders who were interviewed during the initial rapid assessment and the field survey, before turning to brief consideration of reform options.

### 6.1. Stakeholder opinions on reform

Smallholder farmers show varying views regarding produce cess. Some farmers think that they are the ones actually paying the produce cess even when though it is charged to crop buyers (i.e. traders and processors). Another group of farmers believe that produce cess depress market prices and may reduce farmers competitiveness especially where there are different applied rates across LGAs. Surprisingly, most smallholder farmers expressed willingness to pay on a condition that they are guaranteed accessibility to markets and better price. Also farmers suggested that produce cess be reduced and harmonized across the country for each crop subsector.

Large scale farmers tend to believe that they are more heavily affected by the produce cess than smallholder farmers, which has made them pay the cess reluctantly. Commercial farms are more input intensive than smallholder farmers and often cess is charged directly to their farms. For example in Kilosa the LGA has filed a law suit against Kilombero Sugar Company for failing to pay produce cess deliberately as it is required by the local government bylaw.

Large farmers are also very much concerned on how cess revenue is utilized as LGAs have failed to provide adequate services to agriculture such as rehabilitation of rural roads. Farmers claim that they do not see “the value for money” for the cess that they pay to LGAs. Some farmers proposed reduction of cess to a maximum of 3%. In some LGAs large farmers have negotiated to pay a service levy rather than the produce cess. For instance, flower growers and the Tanzania Planting Company (TPC) have negotiated with Arumeru and Moshi LGA to pay the service levy (0.03 percent of the annual turnover) instead of the produce cess.

Traders suggest that produce cess affects their movement of product due to lack of harmonization in cess rates across LGAs. Low rates in some LGAs are said to attract crop buyers and enhance competition which may benefit farmers in that LGA – in possible detriment to those elsewhere - in terms of a relatively better farm gate price. From a perspective of many traders there is a strong justification to continue charging produce cess as a necessary source of revenue for the local government authority. However they would wish that certain reforms are taken in order to improve the business environment, especially harmonization of the cess rate country wide in each crop subsector, in order to reduce market distortion. Traders also think reduction of cess rate would reduce the cost of doing business in agriculture.

For produce cess collectors, produce cess is a business and employment opportunity. The cess collectors think high cess rate leads to tax evasion which complicates cess administration. The cess

collectors advocate for a simplified cess structure as it reduces their transaction costs in collecting cess.

Other challenges faced by cess collectors include inadequate infrastructure at check points (e.g. shelter and road gates/blocks), and poor security. Contracted private firms lack incentives to invest in such infrastructure as their contracts are short term (up to one year) and their renewal is not guaranteed. Agency employees therefore operate under harsh weather conditions and are vulnerable to violent robbery. The agency employees also complain that their compensation schemes are not commensurate with the demands of their job, a fact that encourages rent seeking.

Local Government Authority staff emphasize the importance of cess and are adamant that any reforms that would reduce LGAs revenue must include mechanisms for compensation. The LGA staff acknowledge the narrow tax base of rural LGAs and the need to reduce pressure on produce cess for a competitive sector. Local Government Authorities complain of low cess compliance. The LGA officials recommend public education to enhance awareness among cess payers. The officials also advocate for a special court and legal system to enforce LGA by-laws. LGAs officials support fiscal reforms that will not lead to reduction in produce cess revenue.

Among interviewed LGA staff were the agricultural extension workers. The extension workers, though technically under the Ministry of Agriculture, administratively work under LGAs. Most interviewed extension workers complained that they were given inadequate resources by LGAs to perform their work effectively. To rectify this situation, the extension workers advocate for a fixed formula for allocating resources – including those from the produce cess - to various sectors by LGAs. The formula needs to take into account the contribution of various sectors to LGAs' local revenue. The formula needs to be mainstreamed into the principle law for all local government authorities. They suggest that this recommended revenue allocation formula will ensure sustainable growth of the agricultural sector (as cess revenue is ploughed back to the sector). If reforms are implemented the LGA staff think the agricultural sector would eventually generate more produce cess revenue.

When asked specifically about alternative sources of local revenue if the cess is removed or reduced, LGA officials were very much focused on increasing transfers from the central government. Few were able to identify alternative sources. One LGA that has done so and has taken action is Mbinga, which is tapping the booming construction industry and the general increase in economic activity in rural areas by building investment houses for leasing to businesses. Overall, however, the poor response on the alternative source of revenue is an indication of the narrow tax base facing LGAs and the limited perceived opportunities for tax diversification.

## **6.2. Policy Options for Reforms in Produce Cess**

With these opinions and the empirical and conceptual background of this report, we turn now to a brief assessment of reform options. Each option needs to be evaluated from three perspectives: (1) in light of its likely impact on the key characteristics of “good” tax systems (effectiveness, simplicity, efficiency and equity); (2) keeping firmly in mind not just the realities of human and institutional

capacity in rural Tanzania but the fact that tax systems receive nearly constant criticism and generate regular debate and controversy across countries of all levels of economic development; tax policy is complicated and controversial almost without exception, regardless of the country and its conditions; and (3) understanding that this is a long-term process and that Tanzania has the opportunity now for another round of incremental improvement, following on 2003, in pursuit of the best tax system that it can have at this time.

**Abolish cess in one step:** This option would eliminate a meaningful financial cost for farmers and traders, especially for production systems that involve high use of inputs and relatively small net margins in percentage terms. It would also eliminate the distortions that have been shown to occur when cess differs dramatically for the same crop in nearby districts. However, the revenue loss would be acutely felt by the 12 LGAs that heavily rely on cess for more than 50% of their own local revenue, and it would be felt by these and many other LGAs for whom cess represents a very flexible – even if it is not large for all – source of funding. Unless alternative sources of local revenue for LGAs are identified, this option would be incoherent with the decentralization policy; and our interviews indicate that LGA officials in general do not have a firm grasp on what those alternative sources of local revenue might be. Own source of revenue is crucial to the autonomy of LGAs in defining and prioritizing their development agenda.

Increasing transfers from the central government is not an option in the short-run, as the GoT is already overstretched servicing the growing national debt, the constitutional amendment process, local government election in 2014, the general election in 2015, and other costs. In FY 2013/14 the GoT only met 45% of its obligation to LGAs. Therefore, we suggest that increased funds transfers to LGAs would not be feasible for at least 18 months. This option would therefore meet great resistance from LGAs and would have unknown political implications in the upcoming local government- and general elections.

**Gradual phasing out:** This option would allow LGAs to gradually adjust their fiscal policy and substitute the foregone revenue with alternative taxes, probably much easier to administer and with a much broader tax base. The gradual phase out would provide the central government with time to adjust and increase their revenue allocation to LGAs. The central question is how quickly alternative sources of local revenue could be defined and mechanisms developed and implemented to generate sufficient flow of revenue. Much careful study would have to be done to generate reasonable estimates of the flow over time of potential revenue, and a great deal of work would need to be done – jointly with the LGAs – to design new collection methods and build capacity to implement them. Expressing the intention to phase out cess could trigger a negative attitude among LGA- and other officials toward cess reforms that could otherwise improve the efficiency, simplicity, and fairness of the cess regime.

**Intermediate options:** Table 9 presents results of a simple computation for the next three options, showing the efficiency that LGAs would have to achieve – the share of potential cess that they would need to collect, compared to their current performance – to maintain recent levels of cess collection.

Table 9. Cess collection efficiency required to maintain recent cess revenue under alternative reform options in Tanzania

	Current Structure	Reduce, Broaden, Improve	Eliminate on food crops	
			Leave export crop & livestock cess unchanged	Reduce export crop cess
Cess rate on traditional export crops	5%	3%	5%	3%
Cess rate on food crops	3%	2%	0%	0%
Potential revenue (Tshs '000,000)	120,167	82,358	57,608	40,145
Current revenue (Tshs '000,000)	33,500	---	---	---
Current efficiency	28%	---	---	---
Efficiency required to maintain recent revenue	---	41%	58%	83%

Note: Livestock cess remains at current rates in each option (Tshs 3000/head for cattle and Tshs 500/head for goats and sheep).

*Reduce rate, broaden base, improve collection:* This study has shown that at least 75% of potential cess goes uncollected. Improving that collection, especially for food crops many of which carry little if any cess charge, would make it possible to reduce rates and maintain or even increase total collections; LGAs would need to improve their efficiency in collection from the current estimated 28% to 41% to maintain revenue, and would increase revenue with further improvements. Reducing rates would simultaneously simplify the system by reducing the *difference* in rates across LGAs and thereby addressing problems of tax avoidance and evasion. As part of this approach, one could go further in simplification and establish fixed rates for classes of crops and livestock, e.g. one rate for all traditional export crops and another (possibly lower) rate for food crops. For instance, the produce cess cap could be lowered from 5% to 2% for food crops and 3% for non-food crops. The impact of these changes on cess collection and farmer, trader, and agribusiness attitudes toward the cess could be assessed in subsequent years before further reforms.

Capacity building would need to be pursued vigorously under this option. Tax administration could potentially be improved through the use of technology such as use mobile money e.g. M-Pesa in produce cess payment. Assistance to accurately estimate potential revenue and negotiate favourable contracts with private collection companies should receive high priority, while maintaining reasonable incentives to private collector contractors.

*Complete removal of produce cess in food crops only:* This option could be justified by the cumbersome nature of tax administration in a predominantly informal food sector. Even though food crops have the potential to generate more revenue than traditional exports (Table 8 on potential revenue), in practice they generate only one-third as much, relative to their marketed value, as traditional export crops (Table 4 showing regression results). As shown earlier, only 5 out of 27 surveyed LGAs mentioned food crops as the main source of cess revenue. An objection to this approach could rest on the concept of fairness, which suggests that everyone should be expected to pay some amount of tax. Relatedly, complete removal would undermine the idea of broadening the tax base.

Table 9 shows that complete elimination of cess on food crops would make LGA's jobs quite challenging, especially if rates were reduced on traditional export crops. Leaving the rate on these crops unchanged at 5%, LGAs would have to achieve nearly 60% efficiency in their collection to maintain their current revenues; dropping the cess on traditional export crops to 3% while eliminating it on food crops would require an almost certainly unattainable 83% efficiency.

### **6.3. Recommendations for Policy Dialogue**

#### *Revise the 1982 Local Government Finance Act*

Revisions would be to (a) reduce cess rates and (b) clarify language on issues that have created confusion such as cess on seed. It is proposed that the current ceiling of 5 percent of farm-gate price be reduced to 3 percent for traditional exports and 2 percent for food crops. The lower rate for food crops might enhance cess compliance given the challenges of administering cess in the predominantly informal food crops sector.

#### *Simplify the cess structure*

The current cess structure is complicated and hence often misunderstood. The misinterpretation of the LGFA has led to confusion in translating the cess rate, understanding eligible produce for taxation and knowing who to charge the cess. Specifying a fixed percentage for each crop instead of the ceiling and making the cess rate uniform across LGAs would reduce misinterpretation of the cess. Harmonizing cess rate across LGAs would also help mitigate market distortions. This study recommends that stakeholder committees of crop boards be used as platforms for estimating the fixed cess rate for the year as they announce "indicative prices".

#### *Strengthen the capacity of LGAs in cess administration*

Cash payment of cess in road blocks and check points has been highlighted by stakeholders as the main point of rent seeking and leakages of cess revenue. The problem is more pronounced in food crops where the informal sector is predominant. It is therefore recommended that cash transactions be substituted with other means such as use of mobile phone platforms e.g. MPESA. Such approaches require both human and institutional capacity building, and should be tested and rigorously studied on a pilot basis prior to full roll-out.

#### *Improve internal revenue control and transparency in cess administration and expenditure*

Internal controls of revenue by LGAs are weak as reflected in the annual audit reports by CAG. The arbitrary setting of revenue projections and inadequate monitoring of cess check points have reduced the predictability of cess revenue. There is a need for LGAs to improve their databases on crops and livestock production, tax revenue and expenditure. The introduction of public financial management systems, Epicor and improvement of routine data system (RDS) and the planned Agriculture Annual Survey (AAS) are promising opportunities and need to be taken advantage of in training to improve LGA capacity in estimating potential revenue and monitoring collections. LGAs should undertake regular inspection of the private agencies administering cess in order to enhance fiduciary accountability. Value for money audits in randomly selected LGAs would, more than a forensic audit, enhance LGA capacity and accountability. Incentive schemes for LGA could enhance

their performance in cess administration and accountability. For example, introduction of performance based matching grants, and national recognition and rewards for the best performing LGAs from an annual, independent survey.

*Improve transparency in cess revenue expenditure*

To build mutual trust with cess payers, participatory setting of cess rate and ploughing back of cess revenue to agriculture development are essential to enhance compliance.

*Enhance efficiency in cess administration*

In order to realize value for money for cess revenue, enhancing cess administration is essential. LGAs have resorted to outsourcing local tax administration to private agencies. Though evidence that outsourcing of tax administration has helped to improve efficiency is still scanty, stakeholders' interview suggest that cess revenue has increased since outsourcing. Regardless of the outcome of outsourcing, there is a need to enhance the procurement process of private agencies to make the process more competitive and transparent. There is also a need to draw a "code of conduct" for private agencies to mitigate predatory practices in cess administration.

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## Appendices

### Annex A: Challenging agricultural taxation: Online survey of reports and news-clips from Kenya

Country	Issue	Source of information
Kenya (Agriculture ActNo.13, cap 318, of 2013)	Tea action in Mombasa resume operations after East Africa Tea Trade Association (EATTA) struck a deal with the government that the new levy would be 1% of the hammer price instead of the total customs value of exported tea as the government had intended	The Star, 28 Feb, 2014
Kenya	Rice farmers in the Mwea Irrigation Scheme a headed for a major clash with Kirinyaga County government after they rejected plans to impose a Ksh.50 levy for every 90kg bag of rice. Mwea scheme produces 50,000 tons of rice annually which account for 80% of rice consumed in the County.	The People in National 5 April, 2014
Kenya	Kericho farmers have objected to the Ksh.30,000 annual levy imposed on all pulping stations. Farmers claim that the levy is “robbery without violence” and meant to suppress coffee farming. They said they will continue paying 1% of farm produce.	Business daily 21 April, 2014
Kenya	Farmers in Trans-Nzoia have boycotted delivering produce to the National Cereals and Produce Board. Farmers are unhappy with the newly introduced levy of Ksh.10 per bag during delivery and an additional Ksh.60 per bag monthly.	
Kenya	The County governments have mounted barriers to collect cess on agricultural produce.  Horticulture levy in Nakuru – 1% of turnover; Meru Ksh. 25 per box	Kenya Flower Council, 18 Oct, 2013

## Annex B: Regression results for correlates of sources of local revenue

### Regression: Cess Revenue

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.654 <sup>a</sup>	.427	.373	1.27106E9

a. Predictors: (Constant), totalvalue, south, central, western, eastern, shighlands, plantation, Population, northern

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.146E20	9	1.273E19	7.881	.000 <sup>a</sup>
	Residual	1.535E20	95	1.616E18		
	Total	2.681E20	104			

a. Predictors: (Constant), totalvalue, south, central, western, eastern, shighlands, plantation, Population, northern

b. Dependent Variable: RevCess

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.153E8	4.955E8		.838	.404
	Population	-1757.320	1320.863	-.130	-1.330	.187
	plantation	9.784E8	2.960E8	.297	3.306	.001
	northern	-1.791E8	4.022E8	-.046	-.445	.657
	central	3.376E8	5.516E8	.056	.612	.542
	western	1.705E9	4.766E8	.327	3.577	.001
	shighlands	6.473E8	4.302E8	.149	1.505	.136
	south	4.955E8	5.244E8	.091	.945	.347
	eastern	3.293E8	5.068E8	.063	.650	.517
	totalvalue	.019	.004	.442	4.894	.000

### Regression: Cess revenue

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685 <sup>a</sup>	.469	.413	1.23019E9

a. Predictors: (Constant), cashvalue, foodvalue, shighlands, central, eastern, western, Population, plantation, northern, south

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.258E20	10	1.258E19	8.314	.000 <sup>a</sup>
	Residual	1.423E20	94	1.513E18		
	Total	2.681E20	104			

a. Predictors: (Constant), cashvalue, foodvalue, shighlands, central, eastern, western, Population, plantation, northern, south

b. Dependent Variable: RevCess

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.632E8	4.882E8		1.359	.178
	Population	-2187.841	1288.121	-.162	-1.698	.093
	plantation	7.735E8	2.962E8	.235	2.611	.010
	northern	-2.772E8	3.909E8	-.072	-.709	.480
	central	2.692E8	5.345E8	.045	.504	.616
	western	1.778E9	4.621E8	.341	3.848	.000
	shighlands	4.937E8	4.201E8	.114	1.175	.243
	south	-3.984E8	6.044E8	-.073	-.659	.511
	eastern	98557552.991	4.978E8	.019	.198	.843
	foodvalue	.015	.004	.320	3.697	.000
	cashvalue	.048	.011	.424	4.246	.000

a. Dependent Variable: RevCess

## Regression: Cess revenue

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.700 <sup>a</sup>	.490	.390	1.25387E9

a. Predictors: (Constant), ricevalue, shighlands, sisalvalue, cashewvalue, tobaccovalue, western, cottonvalue, central, teavalue, eastern, coffevalue, maizevalue, plantation, Population, northern, sugarvalue, south

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.313E20	17	7.723E18	4.912	.000 <sup>a</sup>
	Residual	1.368E20	87	1.572E18		
	Total	2.681E20	104			

a. Predictors: (Constant), ricevalue, shighlands, sisalvalue, cashewvalue, tobaccovalue, western, cottonvalue, central, teavalue, eastern, coffevalue, maizevalue, plantation, Population, northern, sugarvalue, south

b. Dependent Variable: RevCess

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.620E8	5.091E8		1.497	.138
	Population	-1980.461	1401.369	-.147	-1.413	.161
	plantation	7.863E8	3.170E8	.239	2.480	.015
	northern	-3.912E8	4.160E8	-.101	-.940	.350
	central	2.732E8	5.774E8	.045	.473	.637
	western	1.709E9	4.941E8	.328	3.459	.001
	shighlands	3.812E8	4.629E8	.088	.823	.413
	south	-3.493E8	7.152E8	-.064	-.488	.627
	eastern	-1.020E8	5.408E8	-.020	-.189	.851
	teavalue	.123	.189	.054	.652	.516

coffeevalue	.059	.025	.232	2.345	.021
cottonvalue	-.058	.087	-.063	-.669	.505
cashewvalue	.042	.015	.319	2.722	.008
tobaccovalue	.031	.029	.085	1.053	.295
sisalvalue	-1.526	26.717	-.005	-.057	.955
sugarvalue	.055	.033	.170	1.646	.103
maizevalue	.010	.010	.094	1.010	.315
ricevalue	.017	.006	.289	2.623	.010

a. Dependent Variable: RevCess

## Regression: Non-cess own revenue

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.447 <sup>a</sup>	.200	.124	1.14552E9

a. Predictors: (Constant), totalvalue, south, central, western, eastern, shighlands, plantation, Population, northern

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.111E19	9	3.456E18	2.634	.009 <sup>a</sup>
	Residual	1.247E20	95	1.312E18		
	Total	1.558E20	104			

a. Predictors: (Constant), totalvalue, south, central, western, eastern, shighlands, plantation, Population, northern

b. Dependent Variable: revown\_necess

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.042E9	4.466E8		2.333	.022
	Population	3524.115	1190.404	.343	2.960	.004
	plantation	16417185.534	2.668E8	.007	.062	.951
	northern	-1.241E8	3.625E8	-.042	-.342	.733
	central	-5.761E8	4.971E8	-.125	-1.159	.249
	western	-7.650E8	4.296E8	-.192	-1.781	.078
	shighlands	-2.931E8	3.877E8	-.089	-.756	.451
	south	-3.815E8	4.726E8	-.092	-.807	.422
	eastern	2.110E8	4.567E8	.053	.462	.645
	totalvalue	.002	.003	.059	.548	.585

a. Dependent Variable: revown\_necess

## Regression: Non-cess own revenue

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.473 <sup>a</sup>	.224	.141	1.13427E9

a. Predictors: (Constant), cashvalue, foodvalue, shighlands, central, eastern, western, Population, plantation, northern, south

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.483E19	10	3.483E18	2.707	.006 <sup>a</sup>
	Residual	1.209E20	94	1.287E18		
	Total	1.558E20	104			

a. Predictors: (Constant), cashvalue, foodvalue, shighlands, central, eastern, western, Population, plantation, northern, south

b. Dependent Variable: revown\_necess

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.993E8	4.501E8		1.998	.049
	Population	3772.047	1187.689	.367	3.176	.002
	plantation	1.345E8	2.731E8	.054	.492	.624
	northern	-67589959.290	3.604E8	-.023	-.188	.852
	central	-5.366E8	4.928E8	-.117	-1.089	.279
	western	-8.072E8	4.261E8	-.203	-1.895	.061
	shighlands	-2.047E8	3.874E8	-.062	-.528	.599
	south	1.332E8	5.573E8	.032	.239	.812
	eastern	3.439E8	4.589E8	.086	.749	.456
	foodvalue	.004	.004	.119	1.141	.257
	cashvalue	-.015	.010	-.172	-1.421	.158

a. Dependent Variable: revown\_necess

**Regression: Non-cess own revenue**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.525 <sup>a</sup>	.276	.134	1.13889E9

a. Predictors: (Constant), ricevalue, shighlands, sisalvalue, cashewvalue, tobaccovalue, western, cottonvalue, central, teavalue, eastern, coffevalue, maizevalue, plantation, Population, northern, sugarvalue, south

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.292E19	17	2.525E18	1.947	.024 <sup>a</sup>
	Residual	1.128E20	87	1.297E18		
	Total	1.558E20	104			

a. Predictors: (Constant), ricevalue, shighlands, sisalvalue, cashewvalue, tobaccovalue, western, cottonvalue, central, teavalue, eastern, coffevalue, maizevalue, plantation, Population, northern, sugarvalue, south

b. Dependent Variable: revown\_necess

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.706E8	4.624E8		1.666	.099

Population	3874.464	1272.861	.377	3.044	.003
plantation	1.449E8	2.880E8	.058	.503	.616
northern	14448073.746	3.778E8	.005	.038	.970
central	-6.014E8	5.245E8	-.131	-1.147	.255
western	-9.034E8	4.488E8	-.227	-2.013	.047
shighlands	-2.974E8	4.205E8	-.090	-.707	.481
south	-43538410.849	6.496E8	-.010	-.067	.947
eastern	5.827E8	4.912E8	.147	1.186	.239
teavalue	-.023	.171	-.013	-.135	.893
coffeevalue	-.027	.023	-.137	-1.161	.249
cottonvalue	-.023	.079	-.033	-.293	.771
cashewvalue	-.007	.014	-.068	-.487	.628
tobaccovalue	.021	.027	.075	.785	.434
sisalvalue	20.920	24.267	.088	.862	.391
sugarvalue	-.059	.030	-.240	-1.946	.055
maizevalue	.008	.009	.097	.875	.384
ricevalue	.007	.006	.156	1.188	.238

a. Dependent Variable: revown\_necess

## Regression: Central government transfers

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.706 <sup>a</sup>	.499	.452	1.50554E10

a. Predictors: (Constant), totalvalue, south, central, western, eastern, shighlands, plantation, Population, northern

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.168E22	9	2.409E21	10.629	.000 <sup>a</sup>
	Residual	2.176E22	96	2.267E20		
	Total	4.344E22	105			

a. Predictors: (Constant), totalvalue, south, central, western, eastern, shighlands, plantation, Population, northern

b. Dependent Variable: revcentral

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.014E10	5.860E9		3.436	.001
	Population	108167.619	15634.435	.633	6.919	.000
	plantation	2.975E9	3.503E9	.071	.849	.398
	northern	6.290E9	4.737E9	.130	1.328	.187
	central	7.869E9	6.532E9	.103	1.205	.231
	western	1.393E9	5.645E9	.021	.247	.806
	shighlands	4.551E9	5.094E9	.083	.893	.374
	south	-1.528E9	6.211E9	-.022	-.246	.806
	eastern	4.593E9	6.001E9	.069	.765	.446
	totalvalue	.079	.045	.147	1.746	.084

a. Dependent Variable: revcentral

## Regression: Central government transfers

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.706 <sup>a</sup>	.499	.446	1.51343E10

a. Predictors: (Constant), cashvalue, foodvalue, shighlands, central, eastern, western, plantation, Population, northern, south

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.168E22	10	2.168E21	9.467	.000 <sup>a</sup>
	Residual	2.176E22	95	2.290E20		
	Total	4.344E22	105			

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.010E10	5.996E9		3.352	.001
	Population	108239.309	15835.265	.633	6.835	.000
	plantation	3.009E9	3.641E9	.072	.827	.411
	northern	6.307E9	4.783E9	.130	1.318	.191
	central	7.880E9	6.574E9	.103	1.199	.234
	western	1.381E9	5.684E9	.021	.243	.809
	shighlands	4.577E9	5.168E9	.083	.886	.378
	south	-1.379E9	7.435E9	-.020	-.185	.853
	eastern	4.632E9	6.122E9	.070	.757	.451
	foodvalue	.080	.049	.136	1.628	.107
	cashvalue	.075	.138	.052	.541	.590

a. Dependent Variable: revcentral

## Regression: Central government transfers

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.736 <sup>a</sup>	.542	.454	1.50314E10

a. Predictors: (Constant), ricevalue, shighlands, sisalvalue, cashewvalue, tobaccovalue, western, central, cottonvalue, teavalue, eastern, coffevalue, maizevalue, plantation, Population, northern, sugarvalue, south

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.356E22	17	1.386E21	6.134	.000 <sup>a</sup>
	Residual	1.988E22	88	2.259E20		
	Total	4.344E22	105			

a. Predictors: (Constant), ricevalue, shighlands, sisalvalue, cashewvalue, tobaccovalue, western, central, cottonvalue, teavalue, eastern, coffevalue, maizevalue, plantation, Population, northern, sugarvalue, south

b. Dependent Variable: revcentral

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.078E10	6.091E9		3.412	.001
	Population	102729.590	16784.130	.601	6.121	.000
	plantation	1.450E9	3.798E9	.035	.382	.703
	northern	4.953E9	4.956E9	.102	.999	.320
	central	6.659E9	6.922E9	.087	.962	.339
	western	2.258E9	5.923E9	.034	.381	.704
	shighlands	3.964E9	5.550E9	.072	.714	.477
	south	-2.782E8	8.573E9	-.004	-.032	.974
	eastern	3.943E9	6.481E9	.059	.608	.544
	teavalue	2.942	2.262	.101	1.301	.197
	coffeevalue	.181	.303	.056	.597	.552
	cottonvalue	1.278	1.041	.108	1.228	.223
	cashewvalue	.079	.184	.048	.431	.667
	tobaccovalue	-.378	.353	-.081	-1.071	.287
	sisalvalue	-303.815	320.251	-.077	-.949	.345
	sugarvalue	.572	.401	.139	1.427	.157
	maizevalue	.193	.118	.145	1.641	.104
	ricevalue	-.014	.078	-.018	-.175	.862

a. Dependent Variable: revcentral

## Regression: Total revenue

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.715 <sup>a</sup>	.511	.466	1.54744E10

a. Predictors: (Constant), totalvalue, south, central, western, eastern, shighlands, plantation, Population, northern

ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.406E22	9	2.673E21	11.163	.000 <sup>a</sup>
	Residual	2.299E22	96	2.395E20		
	Total	4.705E22	105			

a. Predictors: (Constant), totalvalue, south, central, western, eastern, shighlands, plantation, Population, northern

b. Dependent Variable: RevTot

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.162E10	6.023E9		3.589	.001
	Population	109897.404	16069.572	.618	6.839	.000
	plantation	3.961E9	3.601E9	.091	1.100	.274
	northern	6.019E9	4.869E9	.120	1.236	.219
	central	7.621E9	6.714E9	.096	1.135	.259
	western	2.329E9	5.802E9	.034	.401	.689

shighlands	4.901E9	5.236E9	.085	.936	.352
south	-1.420E9	6.384E9	-.020	-.222	.824
eastern	5.125E9	6.168E9	.074	.831	.408
totalvalue	.100	.047	.178	2.140	.035

a. Dependent Variable: RevTot

## Regression: Total revenue

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.715 <sup>a</sup>	.511	.460	1.55554E10

a. Predictors: (Constant), cashvalue, foodvalue, shighlands, central, eastern, western, plantation, Population, northern, south

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.406E22	10	2.406E21	9.943	.000 <sup>a</sup>
	Residual	2.299E22	95	2.420E20		
	Total	4.705E22	105			

a. Predictors: (Constant), cashvalue, foodvalue, shighlands, central, eastern, western, plantation, Population, northern, south

b. Dependent Variable: RevTot

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.168E10	6.163E9		3.518	.001
	Population	109785.636	16275.839	.617	6.745	.000
	plantation	3.908E9	3.742E9	.090	1.044	.299
	northern	5.993E9	4.916E9	.119	1.219	.226
	central	7.604E9	6.756E9	.095	1.125	.263
	western	2.348E9	5.843E9	.034	.402	.689
	shighlands	4.861E9	5.312E9	.085	.915	.362
	south	-1.653E9	7.641E9	-.023	-.216	.829
	eastern	5.065E9	6.292E9	.073	.805	.423
	foodvalue	.099	.051	.162	1.959	.053
	cashvalue	.107	.142	.072	.759	.450

a. Dependent Variable: RevTot

## Regression: Total revenue

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.740 <sup>a</sup>	.548	.461	1.55415E10

a. Predictors: (Constant), ricevalue, shighlands, sisalvalue, cashewvalue, tobaccolvalue, western, central, cottonvalue, teavalue, eastern, coffevalue, maizevalue, plantation, Population, northern, sugarvalue, south

ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.579E22	17	1.517E21	6.281	.000 <sup>a</sup>
	Residual	2.126E22	88	2.415E20		
	Total	4.705E22	105			

a. Predictors: (Constant), ricevalue, shighlands, sisalvalue, cashewvalue, tobaccovalue, western, central, cottonvalue, teavalue, eastern, coffevalue, maizevalue, plantation, Population, northern, sugarvalue, south

b. Dependent Variable: RevTot

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.234E10	6.298E9		3.547	.001
	Population	104577.971	17353.698	.588	6.026	.000
	plantation	2.372E9	3.927E9	.055	.604	.547
	northern	4.611E9	5.124E9	.092	.900	.371
	central	6.328E9	7.157E9	.079	.884	.379
	western	3.065E9	6.125E9	.044	.500	.618
	shighlands	4.047E9	5.738E9	.070	.705	.482
	south	-6.800E8	8.864E9	-.009	-.077	.939
	eastern	4.413E9	6.701E9	.064	.659	.512
	teavalue	3.042	2.338	.100	1.301	.197
	coffevalue	.213	.313	.063	.681	.498
	cottonvalue	1.198	1.076	.097	1.113	.269
	cashewvalue	.115	.191	.066	.601	.549
	tobaccovalue	-.326	.365	-.067	-.893	.374
	sisalvalue	-284.133	331.118	-.069	-.858	.393
	sugarvalue	.568	.414	.133	1.371	.174
	maizevalue	.211	.122	.151	1.730	.087
	ricevalue	.010	.080	.013	.131	.896

a. Dependent Variable: RevTot

