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Population growth, internal migration, and urbanisation in Tanzania, 1967-2012

Phase 2 (Final report)

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POPULATION GROWTH, INTERNAL MIGRATION AND URBANISATION IN TANZANIA, 1967-2012: Phase 2 (Final Report)

Hugh Wenban-Smith[1]

Abstract

Tanzania, like other African countries is urbanising rapidly. But whereas in Asia (particularly China) urbanisation is a powerful engine of growth, this is rarely the case in Africa. The IGC project on 'Population Growth, Internal Migration and Urbanisation in Tanzania' investigates this issue with a view to better outcomes in future.

In the first phase of the project, data from all 5 post-Independence censuses was used to track the growth and movement of people between rural and urban areas across mainland Tanzania's 20 regions. By comparing actual populations with the populations that would be expected if each area grew at the national rate, the project developed measures to compare the experience of different regions.

In this second phase, we seek to relate this data to developments in the Tanzanian economy, first at national level and then at regional level. At national level, we note that the rural population is now three times as large as it was 50 years ago, greatly increasing the pressure on land and other natural resources such as water. At regional level, although the evidence is not good enough to support strong conclusions, we find indications that 'Rural Push' (as measured by density of rural population to cultivated land) was important in 1978-88 and 1988-2002; being distant from Dar es Salaam however reduces rural out-migration. There are also indications that regions with large urban populations attracted more in-migration (Dar es Salaam, Mwanza, Arusha and Mbeya), suggestive of 'Urban Pull' – despite burgeoning informal settlements and limited opportunities for formal employment. There is an urgent need for more case studies of Tanzania's larger towns to flesh out this finding, as there has been very little research on towns other than Dar es Salaam (which is currently the subject of an ambitious World Bank study of 6 African cities, supported by IGC).

Another pertinent question is the relative importance of economic fundamentals (such as those considered above) and institutional factors (such as government policies and local administrative structures). It seems clear that the latter cannot be ignored in Tanzania's case. The project finds evidence that villagisation (early 1970s) and state agricultural marketing (Late 1970s and early 1980s) impacted adversely on rural areas, while over the same period policies for local government made it more difficult for urban areas to respond to the influx of migrants. In fact, local government was abolished between 1972 and 1982 and has only gradually been restored since. While the Local Government Reform Programme has now put a coherent framework in place for the administration of urban areas, urban authorities still face difficulties due to lengthy procedures and inadequate resources.

The report concludes that strengthening the role of Africa's urban areas as engines of growth remains a major challenge. It offers some thoughts on lessons learnt and topics for future research but suggests that while research can make a contribution, the focus needs increasingly to be on appropriate policies and the mobilisation of resources in support of those policies.

Key words: Tanzania, Urbanisation, Population growth, migration, regions
JEL classification: J11, J61, O18, O55, R12, R23

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POPULATION GROWTH, INTERNAL MIGRATION AND URBANISATION IN TANZANIA, 1967-2012: Phase 2 (Final Report)

Introduction

Urbanisation in Tanzania, as in many other African countries, is proceeding apace – but with mixed results. Urbanisation can bring both benefits and costs. The benefits should include more varied and better employment opportunities with higher productivity, better housing and basic services, a wider choice of goods and other services and generally a better standard of living (e.g. World Bank, 2009); however, there can also be costs: congestion, over-crowding, lack of resources to provide basic services, health hazards and more crime (e.g. Davis, 2007). Unfortunately, in many African countries the costs have, to date, tended to outweigh the benefits. Urbanisation has not been the strong driver of growth that it has been in parts of Asia, for example.

Through this project, we hope that by documenting urbanisation as it has taken place in Tanzania since Independence, we can arrive at a better understanding of the process and hence help the Tanzanian authorities, central and local, to develop policies which can effectively harness its potential to make a more positive contribution to growth and well-being. In Phase 1 (Wenban-Smith, 2014), we assembled data on urbanisation in mainland Tanzania (at both national and regional level) and carried out preliminary analysis, notably in the derivation of propensities for rural out-migration and urban in-migration for 20 regions over a period of nearly 50 years[2]. In Phase 2, the subject of this report, our objective is to relate these findings to parallel developments in Tanzania's economy, so as to throw light on what is driving the urbanisation process. In **Part 1** we examine matters at the national level; in **Part 2**, we take the analysis down to regional level.

Part 1: National Overview, 1957-2012

Using the census urbanisation data

The analysis of urban populations for this project is explicitly based on the census reports and in particular adopts the census definition of urban. This is not to say that other definitions are wrong but our over-riding aim is to try to achieve reasonable comparability over time and between regions. It has to be acknowledged however that even with this approach, there are some problems with the data. In general, an increase in the urban populations recorded in the censuses may be due to:

a. More places being recognised as urban;
b. Expansion of the recognised boundaries of urban areas (e.g. following recognition as a City Council (CC), Municipal Council (MC) or Town Council (TC), when outlying parts of the area for which the council is responsible may be classified as 'urban' although still rural in character - but these may later gradually become more urban as the town grows);
c. In-migration from a region's rural areas or from other regions (often leading to informal settlements in or around the town);
d. Natural population growth within the town boundary.

In Tanzania's case, there is evidence that all these processes are operating but it is not easy to establish the relative importance of each in particular cases.

Moreover, the urbanisation process in Tanzania needs to be seen in the context of the somewhat troubled history of local government in the country. A Prime Minister's Office – Regional & Local Government (PMO-RALG) report (c. 2000) records that: "District Authorities were abolished on 30 June 1972 while Urban Authorities were abolished on 30 June 1973." At that time, there were 15 urban councils in Tanzania. The report goes on:

[2] In 1967 there were 17 mainland regions; in 1978, 1988 and 2002 there were 20 (Manyara was added soon after the census, making 21 regions). By 2012, 4 more regions had been created. In this report the 20 regions of 2002 are used but Dar es Salaam and Pwani regions have been combined so that there are in effect 19 regions. Zanzibar is not included in this study.

> "When Local Authorities were abolished, urban councils were merged with neighbouring rural areas. Government focus was on rural areas and this led to a rapid deterioration of conditions in urban areas. Primary schools lacked textbooks and their buildings remained unmaintained; drains and sewers remained unblocked; roads went unattended; and dispensaries lacked essential drugs. An outbreak of cholera in many urban areas in 1976 prompted the Government to set up an investigation team and to make recommendations on the future administration of urban areas. The report … recommended the reinstatement of urban Local Governments.
>
> The Urban Councils (Interim Provisions) Act of 1978 required the re-establishment of town and municipal councils effective from 1 July 1978. However, reconstituting these Local Authorities was not an easy task. The experienced manpower that Local Authorities had previously created had dispersed and much of the infrastructure that belonged to Local Authorities had deteriorated, much beyond repair.
>
> …
>
> In 1980, the ruling political party, *Chama cha Mapinduzi* (CCM), required the Government to revive the Local Government system in its entirety. In 1982, legislation was enacted establishing village councils, township authorities and district councils as the Local Authorities in rural areas; and town, municipal and city councils as Local Authorities in urban areas. Local Government elections took place in 1983 and Local Governments were reinstated effective from 1984."

Notwithstanding this reinstatement, the report continues "The re-established Authorities continued to have a number of fundamental problems, particularly limited resources and poor performance. By the late 1980s there was general agreement within the Government and the ruling political party that Local Government needed reform." The main principles for reform were laid out in the Government's policy paper on Local Government Reform published in October 1998.

Thus at the time of the 1978 census, urban authorities were in the process of being re-established. By the time of the 1988 census new town, municipal and city councils had been established but were not working well; at the time of the 2002 census, the reform programme was still being implemented; and even in 2012, some Town Councils and Township Authorities were not yet operational. Overall, there was thus considerable uncertainty throughout this period about exactly which settlements should be considered 'urban'.

For census purposes, the 1957, 1967 and 1978 censuses adopted the administrative definition of 'urban', i.e. all settlements gazetted as towns or townships. For the 1988, 2002 and 2012 censuses, a broader approach was adopted by the National Bureau of Statistics (NBS) whereby Enumeration Areas (EAs) were classified as either 'rural' or 'urban' after consultation with district councils. This is explained more fully by NBS (2013):

> "In preparation for the [2012] Census, the whole country has been delineated into small areas called enumeration areas (EAs) basing on administrative boundaries and localities. These EAs are coded classified as Rural or Urban EAs. Rural and Urban Area in Tanzania are categorized by various criteria. All regional and district headquarters were by definition urban areas. The boundaries of these headquarters were identified by three pieces of legislation, namely, *Village Act, 1975*, the *Urban Ward Act, 1976*, and *Local Government (Urban Authorities) Act 1982* which divided the entire country into urban and rural wards. Some wards adjacent to urban boundaries were also included in urban areas if it were felt that these wards have urban characteristics; i.e. they exceeded certain minimal level of size - density criterion, and/or they had specialist functions, generally of non-agricultural sort, with many of [their] inhabitants in non-agricultural occupations; many of [their] buildings used for non-domestic purposes (shops, garages, places of entertainments, factories, etc.)"

Figures of city and town populations on this basis have been published for 2002. However, for 1988, city and town populations have to be inferred from ward level data. Similarly, for 2012 ward level data provided to us by NBS gives for each ward its urban and rural population based on the EA level classification, leading to some wards being wholly urban, some mixed and the rest wholly rural. What is a bit trickier, for both 1988 and 2012, is then to relate the populations of the urban and mixed wards to recognisably named towns. In many cases, the allocation is clear but in some cases, several wards need to be grouped together to obtain the town population; in other cases, a large ward

may contain more than one town. Often, ward names are not the same as the town's name. Moreover, even where a ward has the same name as a town, other wards may also be part of the town. There may thus be some inaccuracies in the population figures for individual towns used in this report.

It would be nice if a consistent definition of urban could be imposed across all the censuses but this is clearly not possible. While the urban definition from 1988 onwards is broader than previously and close examination of the regional figures raises questions about the basis for some 1988 urban population figures, and there are some signs of over-classification and inconsistency between different regions in applying the NBS method in 2002 and 2012, it is difficult to see how any better figures can be arrived at.

Key figures

Against this background, **Table 1** brings together the key census figures. This clearly shows that a spurt in urbanisation occurred in the 1967-1978 period (which probably started soon after independence in 1961), with Dar and regional capitals growing by close to 10% p.a. while 'other urban areas' grew more than twice as fast (mainly as a result of many more settlements being recognised as urban). Subsequently, urbanisation slowed somewhat although still proceeding at about twice the rate of population growth; and 'other urban areas' continued to grow rather faster than Dar and the regional capitals (although Dar accelerated to 6.45% p.a. in the most recent period, 2002-2012). The effect can be seen in the lower part of **Table 1**, which shows the share of Dar in the urban population dropping from about 40% in 1967 to 30% in 1988, and then rising again to 34% in 2012. At the same time the share of regional capitals fell steadily from over 50% to about 31% while the share of smaller towns rose dramatically to equal that of Dar by 2002. This might be thought surprising as the tenor of policy over this period was rather anti-urban, and indeed local government was abolished between 1972 and 1982. However, the pressure of high population growth and the negative impact of the villagisation programme led many people to seek opportunities in the growing towns. It was only with the reinstatement of local government starting in the 1980s, and which is still continuing, that first the constitution of larger towns was formalised as City Councils and Municipal Councils, with Town Councils then being progressively added as more towns with populations over 100,000 emerged and, since 2004, Town Authorities being introduced for settlements with populations over 10,000. As the last line of **Table 1** shows, the number of towns in mainland Tanzania (other than regional capitals) with populations over 10,000 has grown very fast – from none in 1967 to 116 in 2012 (although not all these yet have councils or town authorities).

	Population					
	1957	**1967**	**1978**	**1988**	**2002**	**2012**
Dar es Salaam Urban *(Growth % p.a)*	128742	272821 *(7.8)*	769445 *(9.88)*	1205443 *(4.59)*	2336055 *(4.84)*	4364541 *(6.45)*
Regional Capitals *(Growth % p.a)*	207963	363135 *(5.73)*	919949 *(8.82)*	1484512 *(4.90)*	2593163 *(4.06)*	3989447 *(4.40)*
Other Urban *(Growth % p.a)*	27365	49136 *(7.08)*	568527 *(24.93)*	1309927 *(8.71)*	2625620 *(5.09)*	4341764 *(5.16)*
Total urban *(Growth % p.a)*	364072	685092 *(6.53)*	2257921 *(11.45)*	3999882 *(5.88)*	7554838 *(4.65)*	12701238 *(5.33)*
Rural Population *(Growth % p.a)*	8424394	11290665 *(2.97)*	14778578 *(2.48)*	18507165 *(2.28)*	25907011 *(2.43)*	30924116 *(1.79)*
Total Population *(Growth % p.a)*	8788466	11975757 *(3.14)*	17036499 *(3.26)*	22507047 *(2.82)*	33461849 *(2.87)*	43625354 *(2.69)*
Dar/TotUrb (%)	35.4	39.8	34.1	30.1	30.9	34.4
RCs/TotUrb (%)	57.1	53.0	40.7	37.1	34.3	31.4
OtherUrb/TotUrb (%)	7.5	7.2	25.2	32.8	34.8	34.2
OtherUrb >10K (No)	0	0	14	38	81	116
TotUrb/TotPop (%)	4.1	5.7	13.3	17.8	22.6	29.1

Table 1: Tanzania Mainland Urban Populations and Urban Growth, 1957-2012

Looking at trends across the whole period from 1957 to 2012, we see that whereas total mainland population increased about 5-fold, Dar es Salaam has increased 34-fold and the regional capitals 19-fold. These increases in urban populations are much greater than cities in Europe experienced during the industrial revolution; it is therefore not surprising that many are struggling to cope.

We may also note here the national values for propensity for rural out-migration (*Prom*) and propensity for urban in-migration (*Puim*), together with the proportion of the increase in urban population attributable to in-migration, slightly revised since Phase 1 of this project – see Wenban-Smith (2014) for detailed derivation.

Measure	1978-88	1988-2002	2002-12
Prom (propensity for rural out-migration)	5.4	6.2	8.0
Puim (propensity for urban in-migration)	35.3	28.2	26.9
Proportion of urban population increase due to in-migration	0.60	0.47	0.52

Table 2: Tanzania migration propensities[3]

Policy context

Our aim here is to investigate how developments in Tanzania's economy and economic policies may have influenced the process of urbanization. For this purpose, we divide Tanzania's post-Independence time-line into five sub-periods matching the census dates: 1961-1967, 1968-1978, 1979-1988, 1989-2002 and 2003-2012. This conforms fairly well to the scheme adopted by Bigsten & Danielson (2001) so that 1961-1967 is their 'Pre-Arusha period' and 1968-1978 is their 'Pre-Crisis period'[4]. Their 'Crisis period' is then 1979-1985 and this is followed by a 'Reform period' starting in 1986. Our 1978-1988 period thus includes both a crisis phase up to 1986 and the early part of the subsequent reform phase. Reform continued in the 1990s and we call this period 'Consolidation'. The final 2002-2012 period we christen the 'New Dawn'.

Table 3 attempts to summarise the main developments likely to have influenced urbanization, positively or negatively (in the table, a positive influence is indicated by "+", a negative influence by "-" and uncertain effect by "?"). The more significant of these are then discussed in more depth.

Period	Event	Possible effect on urbanization (+, - or ?)
1961-67 Pre-Arusha	• Removal of restrictions on African migration to urban areas; • Price controls on urban basic foods; • Increase in primary and secondary education; • Increase in government employment (rural and urban).	 + + + ?
1968-78 Pre-Crisis	• 2nd 5-year Plan (1967-72) aims "to redress imbalance between urban and rural areas"; • Arusha Declaration (1967) promotes *inter alia* agriculture and rural development; • 1969: Regulation of rural-urban migration (and repatriation of 'loiterers'); • 1969: Growth Poles policy (to promote towns other than Dar);	 - - - +

[3] Propensities for earlier periods have not been calculated due to the difficulty of allocating populations to the smaller number of regions before 1978.

[4] Coulson (2013) uses the term "Harsh Realities" to characterise the decade from 1971.

	• 1972: Minimum wages raised by 40%; • 1973: Decision to relocate capital to Dodoma; • 1973/4 Oil price shock; • 1970s: Banking and much of industry nationalized; International trade and private retail trade confined to state agencies; Growth in employment in government and parastatals; • Deterioration in rural terms of trade. • 1974-78: Villagisation programme ('ujamaa') launched and implemented with increasing vigour; • Break-up of East African Community.	+ ? ? ? + ? ?
1979-88 Crisis and Early Reform	• 1979: War with Uganda; • Breakdown in relations with donors; • Villagers given 33-yr leases on land; • 1982: Local Govt Act reinstates local councils; • Manufacturing output drops (and real wages fall); • Big increase in imports of maize, rice and wheat; • 1983: Nguvu Kazi (Hard Work) Act – Employers' Register + ID cards ("no leniency for loiterers"); • 1984: Subsidies on maize meal and fertilizer removed; • 1986-89: Economic Recovery Programme agreed with WB and IMF (liberalization, devaluation, fiscal reforms); • Resumption of aid flows; • Downsizing of public sector, closure/sale of parastatals.	? - - ? - ? - ? ? ? - ?
1989-2002 Consolidation	• 1990s: Rapid growth of artisanal mining; • 1993-4: New crisis with donor concerns about corruption; • 1996: New agreement with IMF; • 1998: Floods affect agriculture.	- ? ? +
2003-2012 New Dawn	• Growth of large scale mining; • Oil & gas discoveries; • Growth of tourism; • Some large scale agricultural development.	- ? ? -

Table 3: Economic and policy developments considered likely to affect urbanization

The **pre-Arusha period (1961-67)** was characterized by a wave of euphoria among the African population of Tanzania. Urbanisation grew strongly under the influence of the removal of restrictions on African migration, as well as the prospect of more jobs in the service of the new government. Moreover, price controls on essentials in towns strengthened the incentive to migrate, particularly as rising numbers of secondary school leavers entered the labour market, many with little or no experience of (or qualification for) agricultural employment. Bryceson (2006) comments: "In retrospect, the 1960s and early 1970s were undoubtedly the halcyon days of East African city life, full of economic and social promise as cities swelled with men, accompanied by their wives and children, finding formal sector jobs." Notwithstanding, Coulson (2013, p.183) records that at the same time "the main export crops produced by small-scale African farmers continued to expand – cotton at 13% per annum, coffee at 12.5%, and cashewnuts at 9%" – so this was not a bad time for rural dwellers either.

In the next **pre-Crisis period (1968-78)**, urbanization accelerated further, to a startling 11.5% p.a, but by now some ambivalence was evident in the government's response. "Urban populations had expectations of improved livelihoods and living standards after independence, but escalating numbers made it difficult for urban infrastructural provisioning in the form of water and electricity supplies, sanitation, roads and transport to keep pace" (Bryceson, 2006, p.21). The second 5-year Plan included among its aims "to redress the imbalance between urban and rural areas", echoing the Arusha Declaration's emphasis on the role of agriculture and rural development.

Regulations were passed in 1969 to restrict rural-urban migration, including provision for the repatriation of "loiterers". The evidence, however, suggests that these measures had little effect as the surge of people into towns continued unabated: the population of Dar was increasing by nearly 10% p.a. while some other towns grew even faster – Mbeya (17.9% p.a.), Dodoma (12.2%), Tabora (11.2%) and Mwanza (11.1%). In seeking explanations for the rate of urbanization in this period, two policies merit particular attention: Villagisation and the channelling of trade into state monopolies.

The rationale for villagisation rested on two ideas: that it would be difficult to modernize subsistence agriculture while it remained largely a matter of small widely dispersed plots – better to consolidate holdings to facilitate the introduction of tractors and other modern methods; secondly, provision of government services, such as schools and health centres, would be more effective and economic if people could be grouped together in larger settlements. Starting as something to be encouraged on a voluntary basis, slow progress led to a hardening of official attitudes and increasing use of coercion in one form or another. Official statistics show the number of *ujamaa* villages rising from about 800 in 1969 to over 5000 with a population of over 2.5 million by January 1974 (Coulson, 2013, Table 22.1, p.287). This is not the place to debate the rights and wrongs of villagisation but we can ask what the effect on urbanization might have been. On the face of it, villagisation might be expected to slow the rural exodus by providing an attractive alternative in the newly formed rural settlements. However, it appears (the evidence is somewhat anecdotal) that the effect on rural agriculture was seriously adverse as farmers were separated from their former fields and moved to new sites where tenure was uncertain. Moreover rural people lacked traditional sources of leadership, the former Chiefs having been abolished in 1963. Alienated by these developments, many may have become more rather than less inclined to migrate to larger towns in search of better prospects. Added to which there was the inexorable pressure on land and other resources of the growth of population at around 3% p.a.

These effects may well have been aggravated by some of the consequences of the contemporaneous nationalization of much of Tanzania's manufacturing industry and the redirection of retail and wholesale trade into state monopolies. Most observers consider that the prices offered by these organisations for agricultural products represented a significant deterioration in rural terms of trade. Havnevik (1993, p.195) asserts that "The active use of agricultural price policies by the government had the effect of transferring huge financial resources out of the agricultural sector during the 1970s, thus making possible the rapid expansion of the state bureaucracy. However, at the same time these transfers led to impoverishment of the rural areas and blocked the potential for increasing the agricultural surplus." As evidence he cites the indices of producer prices below[5]:

Product	1969/70	1973/4	1979/80
Export crops	100	65.8	57.5
Staple grains	100	67.7	79.1
Drought resistant crops	100	127.9	104.4

Table 4: Weighted average real producer prices (1969/70 = 100)

The broad picture thus is of considerable economic and political stress in the rural areas during this period.
What of the urban response? It seems clear that rapid urbanization was regarded more as a threat than an opportunity by the government, hence its somewhat ineffectual efforts to stem the flow. In fact, local authorities, never particularly strong or well-resourced, seem to have been overwhelmed. Nor did it help, as noted above, that "in 1972 the Local Government was abolished and replaced with a direct central government rule" (Local Government System in Tanzania, 2006). Brennan (2012, p.169) gives a brutal summary of the effects in Dar:

> "Tanzania's disastrous and Orwellian 'decentralization' policy (1972-1978) – nominally a reform strategy aimed at increasing decision-making capacity at local administrative levels – in practice removed several productive activities from Dar es Salaam, stripped the city of its municipal status, disbanded the city council, divided Dar es Salaam into the three districts of Temeke, Ilala and Kinondoni, and culminated in the transfer

[5] However, there was a brief boom in coffee prices around 1977/78.

of the capital to Dodoma in 1974. Decentralization replaced local councils with regional and district committees whose first task was to increase rural production[6]. Committee finance was entirely controlled by central government, and committees were staffed by central government officials. Staffs grew in size but not in expertise, while material and equipment procurements fell. Roads, public transport, water provision, garbage collection, latrine pit emptying, and other public services all sharply deteriorated over the 1970s."

Moreover, "the gap between rural and urban wages peaked just before the oil price shock of 1973/4 and rapidly started closing thereafter. The formal sector was Increasingly displaced by an informal sector with a marked absence of wage rigidities" (Bryceson, 2006, p.47). As the decade drew to a close, further constraints on the ability of central or local government to respond to rapid urbanization emerged in the form of costs imposed by the collapse of the East African Community in 1976 and the war to depose Amin in Uganda (1978/9), just as relations with donors were beginning to sour following break-down of negotiations with the IMF.

The situation as the next **Crisis and early Reform period (1979-88)** began was thus very challenging for Tanzania. Tracking developments in the aggregate economy is complicated by problems with the official statistics.

% p.a	1961-67	1968-78	1979-88	1989-2002	2002-2012
GDP growth (real)	4.8	3.7	1.5[a]/6.1[b]	[c.4.0]	[c.7.0]
Pop Growth	c. 2.9	3.3	2.8	2.9	2.7
GDP per capita	+1.9	+0.4	-1.3[a]/+3.3[b]	[c.+1.1]	[c.+3.3]

[Notes: [a]1979-1985; [b]1986-1988]

Table 5: GDP growth in Tanzania post-Independence

Bigsten & Danielson (2001, p.18) observe that "During the crisis period per capita income fell by 1.5% p.a. according to official estimates … but the estimates are particularly uncertain for this period because the price system was in disarray and much of the economic activities had moved to the parallel economy." They add: "Estimates by Bevan *et al* (1988), based on household budget surveys using black market prices for goods traded in the parallel market, suggest more significant declines." On the other hand, Collier *et al* (1986) suggest that the official statistics may have missed important elements of output because "The country's informal economy has claimed much of the produce of the predominantly peasant agricultural sector. Peasants appear to have shifted from export and non-food crops to food crops for their own subsistence and for local informal trading." Add that estimates of subsistence sector output at this time had very little reliable basis and one can sympathise with Jerven's (2013) comment that "It is open to speculation whether the 1980s were a period of modest growth, stagnation, or outright retrogression." What is certain is that the rate of urbanization slowed considerably and the dominance of Dar also fell (See **Table 1**). However, the data limitations make it difficult to offer any coherent account of ways in which developments in the rural and urban economy may have contributed to this. Timing is also uncertain as the effect on urbanisation of the reforms instituted from 1986 onwards may not have been the same as the effects of the crisis itself in the previous 6 years.

Employment data provide some pointers (although the lack of employment and earnings surveys in the 1980s and 1990s is a problem):

[6] And to take the lead in promoting villagisation (Coulson, 2013, p.300-302).

Year	Agr/Mng	Mfg	Services	Other	Total	Urban
1968	115334 (32.8%)	35359 (10.1%)	90933 (25.9%)	110085 (31.3%)	351711 (100%)	154308 (43.9%)
1978	128309 (23.9%)	100072 (18.7%)	140954 (26.3%)	166610 (31.1%)	535945 (100%)	291721 (54.4%)
1988	n.a	n.a	n.a	n.a	n.a	n.a
2002	106151 (11.5%)	157504 (17.0%)	420367 (45.4%)	241596 (26.1%)	925613 (100%)	n.a
2012	n.a	n.a	n.a	n.a	1550018 (100%)	n.a

Table 6: Employees by industry, Tanzania mainland

From **Table 6**, we may note: A sharp decline in employees in agriculture and mining (from over 30% in 1968 to 11.5% in 2002). Regional data indicate that the decline in sisal estates in Tanga region was the main factor, but the steady replacement of settler estate production (e.g. tea, coffee) by African smallholders, who would not be registered as employees also contributed. Also, there was a decline of the cotton industry in Mwanza region. In the mining sector, there was a decline in employees in the Mwadui diamond mine in Shinyanga region. On the other hand, employees in manufacturing tripled between 1968 and 1978; however, growth slowed down thereafter, failing to keep pace with population growth. Meanwhile, employment in services (nearly all government services) increased threefold between 1978 and 2002 to reach 45%. The share of other sectors (transport, construction, etc) remained relatively constant at around one third throughout.

By the 1990s, the worst of the crisis was over and we enter the period of **Consolidation 1989-2002**. However, this was not a period of great urban dynamism. We see from **Table 1** that urban population growth slowed from 5.88% p.a. to 4.65 % p.a., with a particularly marked slowdown for regional capitals. The propensity for urban in-migration dropped from 35.3 in 1978-88 to 28.2 while the proportion of the increase in urban population attributable to in-migration dropped from 0.60 to 0.47. One factor may have been the growth of artisanal mining, all in rural areas, which has been estimated to have grown to employ between 500,000 and 1 million people by 2000 (Bryceson *et al*, 2012).

With the new millennium, the economic momentum picks up, leading to what we call the **New Dawn 2003-2012**. **Table 5** shows per capita GDP increasing by over 3% p.a. while **Table 1** shows urban population growth rising, particularly for Dar es Salaam (with 65% of the increase attributable to in-migration). Total formal employment during this period increased by over 60% to reach 1.55 million and we may suppose that much of this increase was in urban areas. At the same time, regional propensities for rural out-migration increased, particularly from Mbeya, Pwani, Iringa, Mtwara and Lindi regions, matched by higher propensities for urban in-migration in Rukwa, Kagera, Mbeya and Ruvuma regions. Overall the proportion of the urban population increase attributable to in-migration rose from 0.47 in 1988-2002 to 0.52 in 2002-2012. These figures suggest continuing pressure on livelihoods in rural areas.

Conditions in rural areas

One important factor affecting rural areas was population growth. As we noted in our Phase 1 report (p.7):

> "While total population growth has gradually declined from 3.3% p.a. in the first period to 2.7% p.a. now, the urban population has always grown more rapidly so that by 2012 urbanisation had risen to 29.1% compared with 5.7% in 1967. This is still quite low by international standards, implying that more than 70% of the population remains rural, emphasizing the importance of relating developments in the urban sector to conditions in rural areas. We may note, for example, that of the 31.6 million increase in the total population between 1967 and 2012, 12.0 million were absorbed into urban areas; the increase in the rural population was therefore 19.6 million, nearly a threefold increase over 1967, adding greatly to the pressure of population on land and other resources in the rural areas."

Another factor often mentioned in this connection is climate change. However, although Tanzania's climate is somewhat capricious and variable, with intermittent droughts and floods in some regions, the evidence so far is that the average climate has not changed greatly, either for better or worse. **Table 7** shows in the top line average values for the Palmer Drought Severity Index for Tanzania (see **Annex A** for explanation of this index). As may be seen the index has changed little over the periods covered, although there are signs of greater drought severity in 2003-05.

	1961-67	1968-78	1979-88	1989-2002	2003-05
PDSI					
Tanzania average	14.0	15.3	14.4	14.1	17.7
No of events, region-years (%)					
Severe drought (>21)	0 (0.0)	0 (0.0)	1 (0.5)	2 (0.8)	2 (3.5)
Moderate drought	5 (3.8)	22 (10.5)	4 (2.1)	8 (3.0)	28 (49.1)
Normal range (12-18)	82 (61.7)	166 (79.4)	160 (84.2)	209 (78.6)	27 (47.4)
Moderately wet	30 (22.6)	18 (8.6)	21 (11.1)	35 (13.2)	0 (0.0)
Very wet (<9)	16 (12.0)	3 (1.4)	4 (2.1)	12 (4.5)	0 (0.0)

Table 7: Palmer Drought Severity Index (PDSI) and extreme weather events, Tanzania, 1967-2005

Turning to the lower part of the table, this shows the number of region-years in which the value of the index went outside the normal range (12-18). For example, during 1961-67, no regions experienced severe drought but there were 5 occasions when a region experienced moderate drought. In the same period, there were 30 occasions when a region experienced moderately wet conditions and 16 when it was very wet. More generally we can see that 1961-67 was rather wet; 1968-78 was more balanced; 1979-88 was mostly normal; 1988-2002 was also mostly normal (although with some wet years); post-2002 we only have 3 years data but these years were unusually dry. In the light of these figures it is difficult to conclude that climate change has been a major influence on urbanisation in Tanzania – although this could change in the future.

Another approach to try to get a broad view of rural conditions is through trends in agricultural productivity. Block (2010) has published agricultural productivity series for sub-Saharan Africa based on FAO data, and kindly provided his Tanzania figures to us. These are summarised in **Table 8.**

Measure	1961-67	1968-78	1979-88	1989-2002	2003-12
Output/Ha	142.7	169.1	225.7	237.9	n.a
Output/worker	168.1	187.5	229.1	186.6	n.a
Ha/worker	1.18	1.11	1.02	0.78	n.a

Table 8: Block's partial productivity indices for Tanzania

The table shows Output/Ha rising quite fast from 1961 to 1988 but then more slowly. Output/worker also rose to 1988 but then fell back in 1988-2002. Changes in government policies may have contributed to the slowdown, as Bryceson (2006, p.51) observes:

> "Many post-colonial African countries succeeded, with donor support, in popularizing the use of improved seed and fertiliser packages for their major food and cash crops amongst smallholder peasants during the 1970s and 1980s. This was reversed under SAP with the virtual abandonment of state-supported input package subsidies, parastatal marketing services, extension, crop grading and research … Meanwhile peasants faced social service cut-backs triggering a 'scramble' to pay school fees, medical costs and other basic needs. Rural income diversification especially into trade and other non-agricultural activities ensued."

Ha/worker on the other hand was falling steadily throughout the period, with a sharp drop in 1988-2002. This last statistic is particularly suggestive of the pressure of population growth on rural resources. At the same time, some care is needed in viewing these figures. The FAO data is presumably based on Tanzanian sources, which, as we have seen, were of questionable accuracy during the 1980s and 1990s (particularly for subsistence agriculture).

In the chart below, we map the PDSI data against Block's partial productivity indices year by year to see how far weather events may be reflected in agricultural performance. What is most evident is that the productivity indices improved considerably between about 1971 and 1981 but thereafter output per Ha remained steady while output per worker fell back to 1960s levels (reasons for the large fluctuations in the productivity indices in 2002-04 have not been determined but data problems are a likely explanation). Very little relationship between PDSI and agricultural output appears (although the drop in output in 1980 can perhaps be related to the wet conditions in 1979).

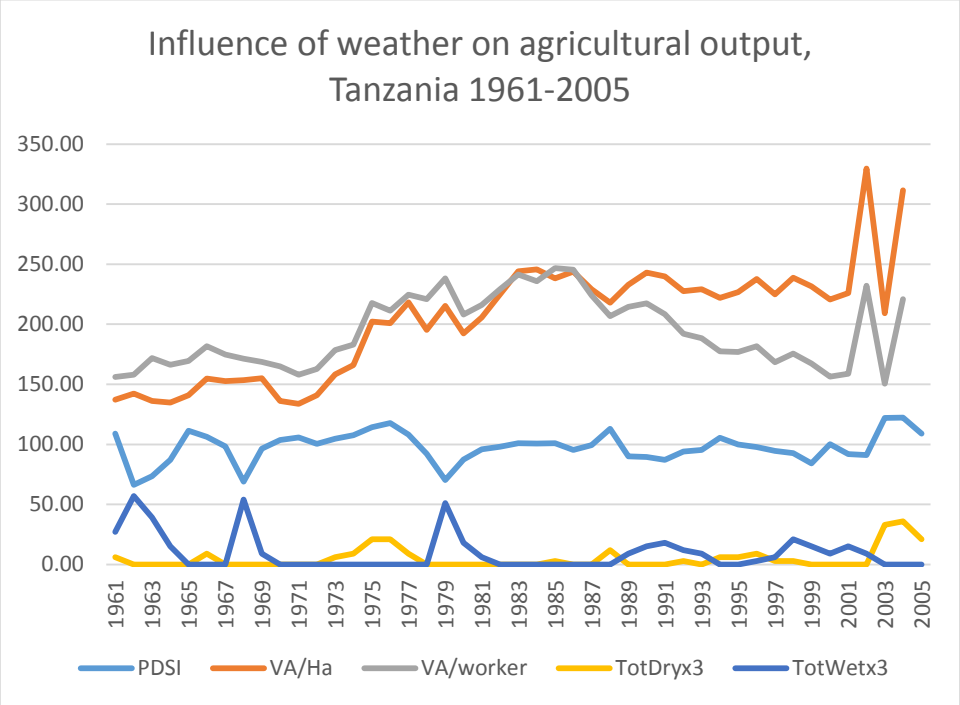

Chart 1: Palmer's Drought Severity Index and Agricultural Productivity, Tanzania 1961-2005

More generally, it may be felt that looking for relationships of this kind at national level may not be very informative bearing in mind how different conditions in Tanzania's regions can be, so that one region may experience drought while another is dealing with floods. In **Part 2** we consider urbanisation at regional level, to throw further light on the relationships between the various factors at work.

Part 2: The Regions, 1967-2012

Regional urban populations

The report on Phase 1 of this project included a working paper on Tanzania's urban populations (Wenban-Smith, 2014). At that time, 2012 population numbers were only available for the larger towns (mainly those with City Councils (CCs), Municipal Councils (MCs) or Town Councils (TCs)). The 2012 census volume on urbanisation and migration has recently been published but does not include town populations. However, careful analysis of ward level data provided by NBS, together with information on urban authorities provided by PMO-RALG (See **Annex B)**, has enabled 2012 populations to be derived for most towns with populations over 10,000, and for many smaller towns as well. However, it must be acknowledged that some uncertainty remains regarding some town names and populations, not just for 2012 but also for 1988 and 2002.

With this information, we can slightly revise Table 1 from the Phase 1 Working Paper 2, using just the figures from the 'urban' column in **Annex B**. This done in **Table 9**. In this table, only the capitals of the 20 regions that existed in 2002 are included. (An interesting question is whether the subsequent promotion of Manyara, Njombe, Katavi,

Simiyu and Geita to regional status has affected the development of their respective capitals (Babati, Njombe, Mpanda, Bariadi and Geita).)

Regional Capital (REGION)	Population of Regional Capitals					Growth rate (% p.a.)			
	1967	1978	1988	2002	2012	67-78	78-88	88-02	02-12
Dodoma (DOD)	23559	45807	83205	150604*	213636	6.23	6.15	4.33	3.56
Arusha (ARU)	32452	55223	102544	333791**	41644**	4.95	6.38	8.80?	2.24?
Moshi (KIL)	26864	52046	96645	144336	184292	6.20	6.38	2.91	2.47
Tanga (TAN)	61058	103399	137364	172557*	221127	4.91	2.88	1.64	2.51
Morogoro (MOR)	25262	60782	117593	209058*	305840	8.31	6.82	4.20	3.88
Bagamoyo (PWA)	5112	16272	21184	28368*	74788	11.10	2.67	2.11	10.18
Dar es Salaam (DAR)	272821	769445	1205443	2336055	4364541	9.88	4.59	4.84	6.45
Lindi (LIN)	13352	27312	33014	29178*	78841	6.72	1.91	-0.88	10.45
Mtwara (MTW)	20413	48491	66878	79277*	101151	8.18	3.27	1.22	2.47
Songea (RUV)	5430	17955	52985	98683*	203309	11.49	11.43	4.54	7.50
Iringa (IRI)	21746	57164	73516	102208*	151345	9.18	2.55	2.38	4.00
Mbeya (MBE)	12479	76601	130798	232596*	385279	17.93	5.50	4.20	5.18
Singida (SIN)	9478	29258	39630	58153	85242	10.79	3.08	2.78	3.90
Tabora (TAB)	21012	67388	92532	126089*	160608	11.18	3.22	2.23	2.45
Sumbawanga (RUK)	0	28586	46631	74890*	124204		5.02	3.44	5.19
Kigoma/Ujiji (KIG)	21369	50075	74224	131792*	215458	8.05	4.01	4.19	5.04
Shinyanga (SHI)	5135	20439	46802	73921*	103795	13.38	8.64	3.32	3.45
Bukoba (KAG)	8141	21547	28316	59157*	128796	9.25	2.77	5.12	8.49
Mwanza (MWA)	34861	110553	172287	385810*	706453	11.06	4.54	5.93	6.24
Musoma (MAR)	15412	31051	68364	104851*	134327	6.58	8.21	3.10	2.51
TOTAL	**635956**	**1689394**	**2689955**	**4931374**	**8358949**	**9.29**	**4.76**	**4.42**	**5.42**

Notes: * As published by Thos Brinkhoff (www.citypopulation.de/Tanzania), based on the 2002 census.

See **Annex B.

Table 9: Evolution of the populations of Tanzania's regional capitals, 1967-2012

Table 10 then similarly updates the equivalent table from Phase 1 for urban populations other than regional capitals, which is virtually unchanged.

Region*	Urban Population (excl. Regional Capitals)					Growth rate (% p.a.)			
	1967	1978	1988	2002	2012	67-78	78-88	88-02	02-12
DOD	6943	39370	47957	62639	107558	17.09	1.99	1.93	5.56
ARU/MAY	0	18412	60186	210525	335898		12.57	9.36	4.78
KIL	0	15553	68974	143755	213083		16.06	5.39	4.01
TAN	11433	42565	88548	128639	219781	12.69	7.60	2.70	5.50
MOR	6321	74523	151208	264791	330218	25.14	7.33	4.08	2.23
PWA	0	21010	74037	158493	285583		13.42	5.59	6.07
DAR	0	0	0	0	0				
LIN	3751	25878	64103	97218	83208	19.19	9.50	3.02	-1.54
MTW	0	43864	60887	149262	190878		3.33	6.61	2.49
RUV	0	25468	38136	70987	135511		4.12	4.54	6.68
IRI/NJO	0	26912	42860	154124	270911		4.76	9.57	5.80
MBE	6487	20022	135214	188549	512833	10.79	21.05	2.40	10.52
SIN	0	28752	28906	90514	85459		0.05	8.49	-0.57
TAB	0	40111	56316	93795	126901		3.45	3.71	3.07
RUK/KAT	0	24506	52416	125232	269405		7.90	6.42	7.96
KIG	0	14363	30643	71015	149803		7.87	6.19	7.75
SHI/GEI/SIM	10594	35516	69288	182131	298768	11.62	6.91	7.15	5.07
KAG/GEI	0	12714	41141	69749	150637		12.46	3.84	8.00
MWA/GEI/SIM	3607	37219	167708	215447	406769	23.64	16.25	1.81	6.56
MAR	0	21769	31399	148755	169085		3.73	11.75	1.29
TOTAL	**49136**	**568527**	**1309927**	**2625620**	**4345764**	**24.93****	**8.71**	**5.09**	**5.16**

Notes: *See **Annex C** for full region names and changes between 2002 and 2012.

****** Does not take into account 1967 populations of smaller settlements not then considered urban.

Table 10: Evolution of the populations of Tanzania's smaller towns, 1967-2012

Regional data related to urbanisation

In support of the analysis presented below, 19 Regional Summaries were prepared, one for each region (with Dar es Salaam included in Pwani region). For each region, the Regional Summary gives:

i. Information concerning the physical and other characteristics of the region;
ii. Information about its infrastructure;
iii. Its urban populations with a number of derived measures (In the regional tables, the abbreviations used are: CC = City Council, MC = Municipal Council, TC = Town Council, TA = Township Authority. Brackets round TC or TA indicate that the council concerned is not yet operational);
iv. Information related to its rural economy; and, finally
v. Information related to its urban economy.

In each case, the tables are accompanied by commentary on the data that has been obtained. These Regional Summaries are available on request.

What drives rural out-migration?

A key question in considering the patterns of migration and urbanisation found in Phase 1 of this project is how far they can be explained by either 'Rural Push' or 'Urban Pull'. Or, put differently, what distinguishes regions with high rural out-migration from those with low out-migration or even rural *in*-migration? And what distinguishes regions with high urban in-migration from those with low urban in-migration?

Ideally questions of this kind should be tested using a general equilibrium model which takes into account not just the supply of labour from rural areas and employment opportunities in urban areas but also the effects of urban expenditure on rural incomes (e.g. when rural produce is supplied to urban markets), the incomes generated from cash crops that are exported, and other rural-urban interactions[7]. However, the data requirements and the modelling challenges are beyond the resources available to our project – and 19 regions may be too few to obtain significant results. Instead, we carry out a number of simple regressions to try to establish how strong the *prima facie* evidence for different explanations may be.

Figures for *Prom* (Propensity for rural out-migration), *Prim* (Propensity for regional in-migration) and *Puim* (Propensity for urban in-migration) for 1978-88, 1988-2002, 2002-12 and 1978-2012 are set out in **Annex C** (including some revisions since Phase 1). For the period 1978-2012, these are illustrated in **Chart 2** below with regions shown in descending order of regional in-migration. Thus over this period, Pwani/Dar's population was over 50% above what it would have been if its population grew at the national rate; at the other extreme, Lindi's population was nearly 40% below. As may be seen, *Prom* shows broadly the opposite trend (except in the case of Pwani/Dar) with regions of relatively high in-migration experiencing relatively low rural out-migration. *Puim*, on the other hand, is considerably more variable suggesting that the drivers of urbanisation are different from those driving either *Prim* or *Prom*[8].

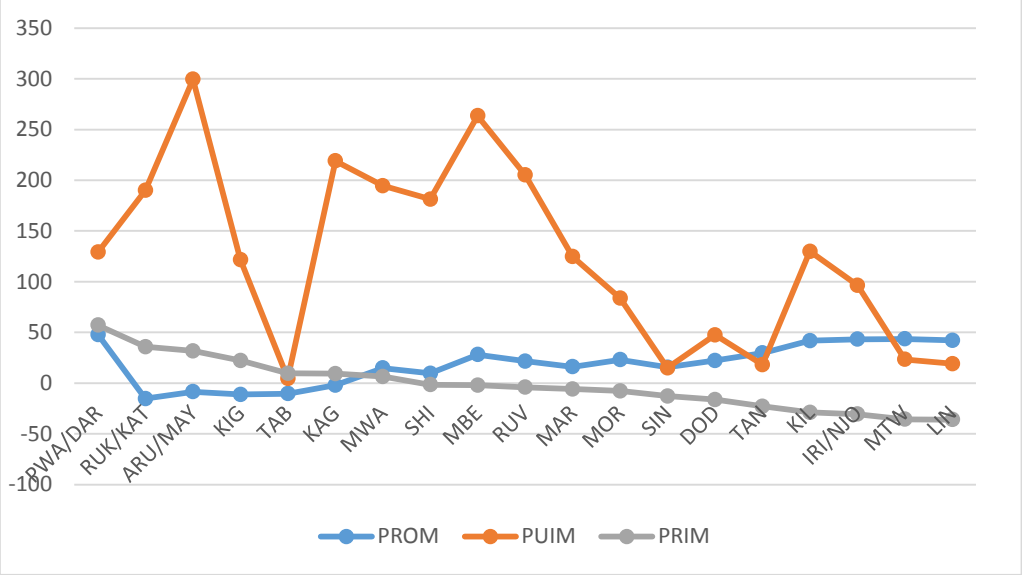

Chart 2: Regional variation in migration and urbanisation propensities, Tanzania 1978-2012 (RPIM = Regional propensity for in-migration; PROM = Propensity for rural out-migration; PUIM = Propensity for urban in-migration)

[7] For an example of an attempt of this kind, see Adam *et al* (2014).

[88] For example, in the case of Tabora region, workshop participants reported that although Tabora town is not very dynamic, the rural economy has been boosted by forestry (mvule wood for construction), honey production and an influx of Sukuma cattle farmers. Similarly, Singida region is an important centre of chicken production. On the other hand, in Shinyanga region, artisanal and large scale mining around Kahama has boosted urban growth.

We start by considering how far *Prom* (Propensity for rural out-migration) can be explained by 'Rural Push', using data for 1978-88, 1988-2002 and 2002-12. To measure pressure of population on land, we relate the rural population in each region to (a) area of land suitable for annual crops as estimated in World Bank (1994, p.23) and (b) area planted to all crops by farmers in 1981, 1990 and 2003 as reported in Agriculture Basic Facts (various years). We started by seeing whether there was any correlation between *Prom* and land pressure. The main findings were:

1978-88: Of the five regions with the highest *Prom* (MTW, KIL, LIN, KAG and TAN) in this period, only two – KIL and TAN – also show high land pressure on one or other of the measures. Of the five regions with the lowest *Prom* (ARU, RUV, SIN, SHI and IRI), three – RUV, SHI and IRI also show low land pressure. So for this period, there is some evidence that land pressure was influencing rural out-migration, although other influences were also at work – for example, the high rural out-migration from MTW, LIN and KAG was associated with low planted density; moreover, SIN showed low out-migration but high density on both measures. More generally, when the relationship between *Prom* and land pressure is plotted, the relationship, although having the right slope under either measure of land pressure, does not appear strong.

1988-2002: In this period, only KIL of the five regions with the highest *Prom* (IRI, KIL, MTW, LIN and PWA/DAR) also shows high land pressure. Of the five regions with the lowest *Prom* (TAB, RUK, KAG and SHI), three – TAB, RUK and SHI show evidence of low land pressure but again there must be other influences at work – for example, KAG shows low *Prom* but high planted density while IRI, MTW and LIN all show low land pressure but high *Prom.* And when the relationship is plotted, there is very little sign of any positive relationship.

2002-12: In this period, the relationship appears even weaker or perhaps reversed. Thus of the five regions with the highest *Prom* (PWA/DAR, IRI, LIN, MTW and RUV), three – IRI, LIN and RUV – have low land pressure, while the region with the highest land pressure (KIL) ranked 7th for *Prom*. At the same time, KIG and KAG, both with low *Prom*, show high planted density in this period.

Of course, high population density in a region could simply be a reflection of better soils or a better climate but on this evidence, the case for pressure of population on rural land driving out-migration is not very strong, except in the case of KIL, and grows weaker over time – despite this pressure more than doubling between 1978 and 2012.

A more pertinent consideration is that rural out-migration is not independent of what is happening in urban areas. Difficult conditions in rural areas may provide an incentive to migrate but if conditions in urban areas are little better, what is the point of migrating? In fact, there is a clear danger that a kind of vicious circle can develop: Population growth in rural areas increases pressure on land and other resources lowering rural productivity leading people to migrate but if employment opportunities in the towns are limited, and housing and other infrastructure are not provided, the productivity of both resident and migrant workers in urban areas may also be driven down. But with population growth continuing, a cycle of declining productivity in both rural and urban areas may be set in motion.

To test the influence of other factors, such as rainfall, urban attraction and distance from Dar, we assembled for each region:

i. Measures of the pressure of rural population on agricultural land (LandDens) – as above;
ii. Average rainfall (Rain);
iii. Data on urban populations (UrbanPop);
iv. Distance of the regional capital from Dar (DistDar).

We might expect *Prom* (propensity for rural out-migration) to be positively influenced by population pressure. Also, drought severity or low rainfall might lead people to out-migrate. On the other hand, regions with large urban populations might be expected to attract more migrants through the effect of agglomeration economies on productivity and wages. The influence of distance from Dar is less obvious – on the one hand it may protect a region from competition, enabling activities to be developed that discourage out-migration; on the other hand, the distance to markets (including export markets) may make it difficult for viable activities to develop so that people will migrate to look for better opportunities in other regions.

We then ran regressions of the general form:

$$Prom = a + b.LandDens + c.Rain + d.\ln(UrbanPop) + e.DistDar... \quad (1)$$

The resulting coefficients (with standard errors) are summarised in **Table 11** below:

Period	LandDens (b)	Rainfall (c)	LnUrbanPop (d)	DistDar (e)	R^2
1978-88	1.35* (0.66)	16.7** (5.72)	-3.07 (2.24)	-7.90* (3.54)	0.44
1988-2002	1.63* (0.71)	-3.43 (6.93)	-4.52 (3.36)	-21.1** (5.68)	0.62
2002-2012	-3.22 (2.22)	3.32 (7.31)	3.61 (3.40)	-16.9** (6.49)	0.64

Table 11: Regression coefficients for *Prom* using equation (1)

These results are interesting but need to be treated with some caution. Apart from any weaknesses in the estimates of *Prom*, we note the following limitations:

i. For land density, we use area planted by farmers from the 1981, 1990 and 2002 Agriculture Basic Facts as offering the best measure of land potential for rural populations but it may not provide a good measure of perceived land pressure at the time, nor does it take account of differences in soils between regions[9].
ii. The Rainfall measure is averaged over each period, so concealing particularly bad (or good) individual years which might influence migration decisions; the actual periods covered are 1980-87, 1988-2001, 2002-06 and values had to be interpolated for 3 regions.
iii. Urban population by region is from the censuses. However, the change in the definition of urban in the censuses from 1988 will affect the figures. The figures are in logs because of the skewed distribution of population sizes.
iv. The DistDar variable should be stable over time but its influence may vary depending on the route taken and the quality of the roads (which has probably improved over time).
v. Two other data issues are relevant here: The rural populations of some regions were boosted by quite large numbers of **refugees** in some years, so distorting the *Prom* measure. We do not have the precise numbers but based on UNHCR and other data, the 1988 and 2002 rural populations for RUK and KAG were each reduced by 100,000; and the 2002 and 2012 rural populations of KIG were reduced by 400,000 and 100,000. The adjusted *Prom* values are used. Another complication is that between 500,000 and 1 million workers were attracted to **artisanal mining** during the 1980s and 1990s, particularly in rural parts of SHI and MWA regions. Again the precise numbers and locations are not known. To deal with this, we tried adding a dummy (1) to the specification for these two regions but the coefficients were not significant.

With these limitations in mind, the following observations may be made on **Table 11**:

a. LandDens: The coefficient now has the expected positive sign and is significant in 1978-88 and 1988-2002 but turns negative in 2002-12, suggesting that rural out-migration was stronger from regions with relatively low land pressure in this last period. Examination of the experience of individual regions may throw light on why this should be. One factor may be the migration of artisanal miners into the rural areas of certain regions, such as Mwanza (which includes the gold-mining area around Geita in our data), Shinyanga and Tabora.
b. Rainfall: We expect better rainfall to moderate rural out-migration. However, in 1978-88 we find the opposite to be the case, suggesting that in this period higher rainfall in a region was associated with higher

[9] Information on soil types and their suitablility for different agricultural regimes does exist, e.g. World Bank (1994), but is difficult to represent as a variable in a regression.

rural out-migration. In 1988-2002, the coefficient has the expected sign but is not significant while in 2002-12 it turns positive again. These results are puzzling[10].

c. Urban Population: This variable is expressed in logs as it is very skewed. The idea is to capture the attraction of a region's own urban areas, with the expectation that, if such urban areas were attractive, it would have a positive effect on rural out-migration. However, the opposite seems to be the case in 1978-88 and 1988-2002. Perhaps their own larger urban areas were not so attractive to rural migrants in these periods? The expected sign appears in 2002-12 but in no period is the coefficient significant.

d. DistDar: This factor turns out to be rather important. The coefficients are significant and negative in all three periods, indicating that rural out-migration is generally weaker in regions more distant from Dar (and the coast). Quantifying the effect at the average distance from Dar of 800km, each 100km extra distance reduces *Prom* by about 6 points in 1978-88, and more in later periods.

As a variant on equation (1), we tried the same relationship but with *Prim* (Propensity for regional in-migration) as the independent variable:

$$Prim = a + b.LandDens + c.Rain + d.\ln(UrbanPop) + e.DistDar \ldots \quad (2)$$

We expect the signs to be opposite those found in **Table 11,** but modified by the inclusion of migrants from outside the region in the *Prim* measure. The results are shown in **Table 12**:

PrimR	**LandDens**	**Rain**	**LnUrbPop**	**DistDar**	**R^2**
1978-1988	-1.12 (0.75)	-12.9* (6.33)	8.12** (2.55)	7.94* (4.02)	0.44
1988-2002	-1.38 (0.80)	0.45 (7.82)	11.4** (3.79)	21.2* (6.40)	0.54
2002-2012	1.90 (2.27)	8.76 (7.49)	9.85** (3.49)	11.9* (6.65)	0.56

Table 12: Regression coefficients for *Prim* using equation (2)

Comparing these results with those in **Table 11**, we see:

a. LandDens: The effect is similar but weaker.

b. Rainfall: There is the same perverse effect in 1978-88, virtually no effect in 1988-2002, but a positive effect in 2002-12. In this last period, it seems, regions with better rainfall were attractive to migrants (perhaps related to the higher incidence of droughts in 2003-05).

c. Urban Population: Here is the most striking difference. Regions with the larger urban populations attract migrants from other regions, providing some evidence for 'urban pull' in these cases. The largest regional capitals by 2002 were Dar es Salaam, Mwanza, Arusha and Mbeya. Back in 1978, Tanga had been among the big four but it suffered a relative decline, probably mainly due to the decline of the sisal industry.

d. Distance from Dar: The effect is again strong and as in **Table 11** (but with the sign reversed as *Prim* measures in-migration whereas *Prom* measures out-migration). Other things equal, regions more distant from Dar attract more in-migration (reinforcing the effect of a large urban population in more distant regions).

It is tempting to propose a relationship like equation (1) but with the propensity for urban in-migration (*Puim*) as the independent variable. However, examination of the history of the regions which have experienced the greatest urban in-migration suggests that in many cases there are particular local reasons contributing to the phenomenon which may not be easy to incorporate in a general model, even if suitable data were available. Instead, we offer a more anecdotal account of why some regions have experienced high in-migration and others have not. To set the scene, **Table13** lists the 5 regions with the highest *Puim* in each period and we then discuss possible explanations for their high ranking.

[10] Particularly as in Tanzania areas with better rainfall (S Highlands and regions bordering Lake Tanganyika) tend to have better soils and a more favourable climate.

1978-88		1988-2002		2002-12	
Region (Capital & its growth rate)	***Puim* [Rank]**	**Region (Capital & its growth rate)**	***Puim* [Rank]**	**Region (Capital & its growth rate)**	***Puim* [Rank]**
Mbeya (Mbeya 5.5%) (OtherUrb 21.1%)	110.2 [1]	Arusha (Arusha 8.8%) (OtherUrb 9.4%)	127.1 [1]	Kagera (Bukoba 8.5%) (OtherUrb 8.0%)	66.5 [1]
Kilimanjaro (Moshi 6.4%) (OtherUrb 16.1%)	87.1 [2]	Mara (Musoma 3.1%) (OtherUrb 11.8%)	72.6 [2]	Mbeya (Mbeya 5.2%) (OtherUrb 10.5%)	61.0 [2]
Mwanza (Mwanza 4.5%) (OtherUrb 16.3%)	75.7 [3]	Shinyanga (Shinyanga 3.3%) (OtherUrb 7.2%)	49.7 [3]	Ruvuma (Songea 7.5%) (OtherUrb 6.7%)	50.8 [3]
Arusha (Arusha 6.4%) (OtherUrb 12.6%)	68.8 [4]	Iringa (Iringa 2.4%) (OtherUrb 9.6%)	49.5 [4]	Rukwa (Sumbawanga 5.2%) (OtherUrb 8.0%)	48.5 [4]
Ruvuma (Songea 11.4%) (OtherUrb 4.1%)	60.3 [5]	Singida (Singida 2.8%) (OtherUrb 8.5%)	47.2 [5]	Pwani/Dar (Dar es Salaam 6.5%) (OtherUrb 6.1%)	41.4 [5]

Table 13: Tanzania – 5 top regions ranked by *Puim*

One surprising feature of **Table 13** is that it is only in the last period that Pwani/Dar makes it into the top 5. Of course, absolute growth of the urban population in this region was very large but as a proportion of the urban population, in-migration was not so great as in many other regions, at least until 2002-12. Some other features of **Table 13** are surprising too. While we might expect to find Mbeya, Mwanza and Arusha in high positions, as they are in 1978-88, only Arusha (in 1988-2002) and Mbeya (in 2002-12) feature later. Even in 1978-88, it is strong growth of smaller towns in these regions that seems to be the driver, although the growth of the regional capitals is also relatively high. In the case of Kilimanjaro, high *Puim* is found despite out-migration from the region also being high, perhaps a further reflection of the pressure of population on land. In the case of Ruvuma on the other hand, it is the growth of the regional capital (Songea) that is the main driver.

In the next period, 1988-2002, the surprise is to find Mara, Shinyanga, Iringa and Singida, traditionally regarded as rather poor regions, featuring strongly. We may note that in these regions it was growth of smaller towns that was the main driver. Top place, however, went to Arusha, where urban growth was fuelled by tourism and international bodies, such as the ICC for Rwanda.

In 2002-12, the surprise is to find Kagera at the top of the list, with Ruvuma (again) and Rukwa also featuring strongly. These observations serve to underline the difficulty of finding general explanations for the pattern of urbanisation in Tanzania. What is needed, we suggest, is more detailed case studies of the development of the regional capitals and other towns to get more direct information about the factors that have driven their growth.

Summary and conclusions

Tanzania, like other African countries is urbanising rapidly. But whereas in Asia (particularly China) urbanisation is a powerful engine of growth, this is rarely the case in Africa. The IGC project on 'Population Growth, Internal Migration and Urbanisation in Tanzania' investigates this issue with a view to better outcomes in future.

In the first phase of the project, data from all 5 post-Independence censuses was used to track the growth and movement of people between rural and urban areas across mainland Tanzania's 20 regions. By comparing actual populations with the populations that would be expected if each area grew at the national rate, the project developed measures to compare the experience of different regions.

In this second phase, we seek to relate this data to developments in the Tanzanian economy, first at national level and then at regional level. At national level, we note that the rural population is now three times as large as it was 50 years ago, greatly increasing the pressure on land and other natural resources such as water. At regional level, although the evidence is not good enough to support strong conclusions, we find indications that 'Rural Push' (as measured by density of rural population to cultivated land) was important in 1978-88 and 1988-2002; being distant from Dar es Salaam however reduces rural out-migration. There are also indications that regions with large urban populations attracted more in-migration (Dar es Salaam, Mwanza, Arusha and Mbeya), suggestive of 'Urban Pull' – despite burgeoning informal settlements and limited opportunities for formal employment. There is an urgent need for more case studies of Tanzania's larger towns to flesh out this finding, as there has been very little research on towns other than Dar es Salaam (which is currently the subject of an ambitious World Bank study of 6 African cities, supported by IGC).

Another pertinent question is the relative importance of economic fundamentals (such as those considered above) and institutional factors (such as government policies and local administrative structures). It seems clear that the latter cannot be ignored in Tanzania's case. The project finds evidence that villagisation (early 1970s) and state agricultural marketing (Late 1970s and early 1980s) impacted adversely on rural areas, while over the same period policies for local government made it more difficult for urban areas to respond to the influx of migrants. In fact, local government was abolished between 1972 and 1982 and has only gradually been restored since. While the Local Government Reform Programme has now put a coherent framework in place for the administration of urban areas, urban authorities still face difficulties due to lengthy procedures and inadequate resources.

Here then are some thoughts on lessons learned from this project and issues raised by it:

- Research in Africa is often hampered by lack of data. Census data is more often used for demographic than economic analysis but this project has shown how useful it can be.
- Cross country studies in Africa are now quite common (despite reservations about the comparability of data), regional studies much less so. Yet, in large countries like Tanzania, conditions can vary widely between regions and this regional variation may be more helpful in illuminating research questions than national aggregates. National aggregates hide much important local detail.
- On the role of economic fundamentals, there can be little doubt that poor internal communications (particularly roads), the small size of the domestic market and difficulties accessing potential international markets (including port capacity) have all impeded economic growth in Tanzania. This shows up particularly in the relative weakness of the urban economy; it also points to areas that policy needs to address if the urban economy is to be strengthened.
- It would have been good, if suitable data had been available, to harness the insights of New Economic Geography to better understand the role of transport costs and agglomeration economies in the urbanisation process. As more data becomes available, this would be a promising avenue for future research.
- While rapid population growth is sometimes seen as a positive factor because it boosts the working age population, this view needs to be balanced by noting the downsides: In Tanzania, about half the population is under 17 years of age; and despite rapid urbanisation, the rural population has increased threefold. The pressure of population on land and other natural resources is creating severe strains in rural areas; at the same time urban areas have been overwhelmed by the increase in population for which urban authorities simply do not have the capabilities and resources to provide even basic services. This suggests a role for a more active population policy in Tanzania.
- Turning to local government, district administration has historically assumed a primarily rural context and given priority to rural development. However, as settlements increase in size and existing urban areas attract more people, the problems that need to be addressed are increasingly urban in character. Government officials in Tanzania recognise this and have adopted policies aimed at an orderly progression up the urban hierarchy. However, making these policies work well in practice is not easy, with particular difficulties being

encountered in relation to land use change, procedural challenges and lack of resources to enable newly established urban councils to discharge their responsibilities – weak property taxation being a particular problem. These issues arise in many other African countries, suggesting scope for pooling experience to identify the best ways to resolve these problems.

Strengthening the role of Africa's urban areas as engines of growth remains a major challenge; while research can make a contribution, the focus needs increasingly to be on appropriate policies and the mobilisation of resources in support of those policies.

References

Adam C, D Bevan & D Gollin (2014) "Rural-Urban Linkages, Public Investment and Transport Costs" (Mimeo, on IGC website)

Bigsten A & A Danielson (2001) "Tanzania: Is the Ugly Duckling finally growing up?" Nordiska Afrikainstitutet, Research Report No. 120

Block S (2010) "The decline and rise of agricultural productivity in SSA since 1961" *NBER Working Paper 16481*

Brennan JR (2012) *Taifa: Making Nation and Race in Urban Tanzania* Ohio University Press

Bryceson DF (2006) *African Urban Economies: Searching for sources of sustainability* in Bryceson DF & D Potts, Eds (2006) *African Urban Economies: Viability, Vitality or Vitiation of Major Cities in East and Southern Africa*I Palgrave Macmillan

Bryceson DF, JB Jonsson, C Kinabo & M Shand (2012) "Unearthing Treasure and Trouble: Mining as an impetus to Urbanisation in Tanzania" *Journal of Contemporary African Studies* 30(4)

Collier P, S Radwan & S Wangwe (with A Wagner) (1986) *Labour and Poverty in Rural Tanzania* Clarendon Press

Coulson A (2013) *Tanzania: A Political Economy (2nd Ed)* Oxford University Press

Couttenier M & R Soubeyran (2014) "Drought and Civil War in sub-Saharan Africa" *Economic Journal* Vol. 124, No. 575 pp. 201-244

Dai A, KE Trenberth & T Qian (2004) "A global data set of Palmer Drought Severity Index for 1870-2002: Relationship with soil moisture and effects of surface warming" *Journal of Hydrometeorology* 5(6):1117-30

Davis M (2007) *Planet of Slums* Verso

Havnevik KJ (1993) "Tanzania: The limits to development from above" Nordiska Afrikainstitutet, Sweden

Jerven M (2013) *Poor Numbers* Cornell University Press

NBS (2003) 2002 Census Report

NBS (2013) 2012 Census General Report

NBS (various years) Agriculture Basic Facts

NBS (various years) Employment & Earnings Surveys

URT (PMO-RALG) (2000?) "History of Local Government in Tanzania"

Wenban-Smith HB (2014) *Urbanisation in Tanzania* (www.theigc.org/publications/workingpaper/urbanisation-tanzania)

World Bank (2009) *World Development Report 2009: Reshaping Economic Geography*

World Bank (1994) *Tanzania: Agriculture*

Annex A

The Palmer Drought Severity Index

The Palmer Drought Severity Index (PDSI) data for Tanzania used in this paper were kindly provided by Mathieu Couttenier, co-author of Couttenier M & R Soubeyran (2014) "Drought and Civil War in sub-Saharan Africa" *Economic Journal* Vol. 124, No. 575 pp. 201-244. As they explain: "We use the monthly grid cell data from Dai *et al* (2004). This database covers the world time series from 1870 to 2005; it is geolocalised and available at a resolution of 2.5^0 x 2.5^0 (about 250 km at the equator)." In the original, the index is scaled from -0.1 (<-0.04 = extremely wet) to +0.1 (>0.04 = extremely dry), with 0 as 'normal' but Couttenier & Soubeyran have re-scaled it to run from 0 to 30, with 15 = normal. In our use of the annual average data for Tanzania, we have taken values less than 12 to indicate an unusually wet year, and values over 18 to indicate an unusually dry year. The resolution gives eleven 2.5^0 squares in Tanzania and we have assigned regions to the square in which most of the region lies.

Couttenier & Soubeyran (p.203) explain the advantages of the PDSI as:
"It is the most prominent meteorological drought index. This drought severity index is a function of the duration and magnitude of abnormal moisture deficiency. The PDSI captures meteorological conditions on the ground and combines contemporaneous and lagged values of temperature and rainfall data in a non-linear model (with thresholds). First, the index captures important interactions that were missing in previous studies. For instance, low rainfall is more important in hot months because evapotranspiration is significant and there is in turn less moisture recharge (or more loss if the layers are full). Indeed, high temperatures can prevent abundant rainfall from recharging soil. Second, the index depends both on the limited capacity of moisture accumulation of the soil and on the local characteristics of the soil. As a consequence, abundant precipitation that reaches the accumulation capacity of the soil will run off (and will not be captured by the ground). Third, the PDSI takes the heterogeneity in local conditions and the differences in local climate history into account."

Note: The PDSI measures conditions relative to a long term average for the region or country being observed so is not suitable to compare how drought-prone one region or country is compared to another. It does show whether a particular region or country is getting more or less drought-prone over time.

Annex B

Tanzania: Populations of CCs, MCs and TCs in 2012

PMO-RALG has drawn our attention to Urban Planning Act No. 8 of 2007, whose 5th Schedule, Section 7(2) contains "Criteria for classification Human Settlements" including Minor Settlements (Trading Centre), Township, Town, Municipality, City and Mega City, based on minimum population, economic base, self sustenance, social services and symbolic importance. The 2012 status and populations of Tanzania's mainland urban areas classified as City Councils (CCs), Municipal Councils (MCs) or Town Councils (TCs) is set out in **Table 1**. In addition, settlements with population greater than 10,000 may be designated Township Authorities (TAs). 90 such townships were gazetted through Government Notice No. 353 of 2004: Of these, seven have subsequently been upgraded to Town Council status; of the remainder, 47 TAs are currently operational while 36 have yet to become so. TAs remain under the supervision of their parent District Council, whereas CCs, MCs and TCs have greater autonomy.

Starting then with the largest towns and cities, **Table B1** shows the 2012 census populations for the mainland urban areas which have CCs, MCs or TCs.

Region	Urban Area	2012 Census Population		
		Urban	Rural	Total
Dodoma	Dodoma MC	213,636	197,320	410,956
Arusha	Arusha CC	?	?	416,442‡
Kilimanjaro	Moshi MC	184,292		184,292
Tanga	Tanga CC	221,127	52,205	273,332
	Korogwe TC	56,282	12,026	68,308
	Handeni TC*	79,056		79,056
Morogoro	Morogoro MC	305,840	10,026	315,866
Pwani	Kibaha TC	128,488		128,488
Dar es Salaam	Dar es Salaam CC	(4,364,541)		(4,364,541)
	Kinondoni MC	1,775,049		1,775,049
	Ilala MC	1,220,611		1,220,611
	Temeke MC	1,368,881		1,368,881
Lindi	Lindi MC	78,841		78,841
Mtwara	Mtwara-Mikindani MC	100,626	7673	108,299
	Masasi TC	58,314	44,382	102,696
Ruvuma	Songea MC	203,309		203,309
Iringa	Iringa MC	151,345		151,345
	Mafinga TC	51,902		51,902
Mbeya	Mbeya CC	385,279		385,279
	Tunduma TC*	97,562		97,562
Singida	Singida MC	85,242	65,137	150,379
Tabora	Tabora MC	160,608	66,391	226,999
	Nzega TC*	34,744	53,116	87,860
Rukwa	Sumbawanga MC	124,204	85,589	209,793
Kigoma	Kigoma-Ujiji MC	215,459		215,458
	Kasulu TC*	67,704	140,540	208,244
Shinyanga	Shinyanga MC	103,795	57,596	161,391
	Kahama TC	95,087	147,121	242,208
Kagera	Bukoba MC	128,796		128,796
Mwanza	Mwanza CC (Nyamagana)	363,452		363,452
	Ilemela MC	343,001		343,001
Mara	Musoma MC	134,327		134,327
Manyara	Babati TC	57,909	35,199	93,108

Njombe	Njombe TC	64,122	66,101	130,223
	Makambako TC	57,288	36,539	93,827
Katavi	Mpanda TC	81,540	21,360	102,900
Simiyu	Bariadi TC	?	?	155,620†
Geita	Geita TC	99,795	92,912	192,707

Notes: * These TCs are not yet fully operational but are expected to become so in 2015.

‡ This is the figure given by both NBS and PMO-RALG but exceeds the total population of Arusha Mjini District (328,098 urban + 37,892 rural = 365,990), leaving about 50,000 to be found elsewhere.

† This is the figure given by PMO-RALG but exceeds the total 2012 population of Bariadi District (51,203 urban + 85,877 rural = 137,620).

Table B1: Tanzania mainland, 2012 populations of urban areas with Councils

A number of observations on **Table B1** can be made:

a. In the case of Arusha CC, the official population figure is hard to reconcile with the census ward level data. A similar problem affected the 2002 figure for Arusha. A possible explanation is that the CC boundary extends beyond the Arusha Mjini District boundary.

b. Dar es Salaam CC stands above the three MCs making up the Dar region. For other CCs, responsibility is not shared in this way.

c. PMO-RALG advise that Mwanza CC's area of responsibility is the same as Nyamagana District, whereas previously Mwanza was considered to be Nyamagana and Ilemela Districts combined. For comparability with previous data, the combined population is used in this paper.

d. It will be noticed that for some urban areas, the whole population is classified as urban, whereas for others there is a mixture of urban and rural. PMO-RALG policy is that the whole population within a council boundary should be considered urban – the rationale no doubt being that this is the population for which the council is responsible. This seems to have been followed in the former cases, as some wards in (for example) Moshi MC and even Temeke MC have very low densities but are still classified 'urban' because within the council boundary. However, in other cases, wards within the council boundary which are rural in character have been classified rural in the census. One may speculate that this could be due to the council boundary having been extended since the last census. In this paper, for consistency with previous data, only populations classified as 'urban' in the census report are used (with perhaps a risk that growth of some urban areas may be overstated if some rural areas have been re-classified as 'urban' without any real change in their character).

Annex C

The Regions of Mainland Tanzania, 2002 and 2012 (NBS numbering)

2012 Regions	2002 Regions	Including in 2002
1. Dodoma (DOD)	**1. Dodoma (DOD)**	
2. Arusha (ARU)	**2. Arusha (ARU/MAY)**	All **21. Manyara**.
3. Kilimanjaro (KIL)	**3. Kilimanjaro (KIL)**	
4. Tanga (TAN)	**4. Tanga (TAN)**	
5. Morogoro (MOR)	**5. Morogoro (MOR)**	
6. Pwani (PWA)	**6. Pwani (PWA)**	
7. Dar es Salaam (DAR)	**7. Dar es Salaam (DAR)**	
8. Lindi (LIN)	**8. Lindi (LIN)**	
9. Mtwara (MTW)	**9. Mtwara (MTW)**	
10. Ruvuma (RUV)	**10. Ruvuma (RUV)**	
11. Iringa (IRI)	**11. Iringa (IRI/NJO)**	All **22. Njombe**.
12. Mbeya (MBE)	**12. Mbeya (MBE)**	
13. Singida (SIN)	**13. Singida (SIN)**	
14. Tabora (TAB)	**14. Tabora (TAB)**	
15. Rukwa (RUK)	**15. Rukwa (RUK/KAT)**	All **23. Katavi**
16. Kigoma (KIG)	**16. Kigoma (KIG)**	
17. Shinyanga (SHI)	**17. Shinyanga (SHI/GEI/SIM)**	Maswa, Meatu, Itilima & Bariadi Districts from **24. Simiyu**; Bukombe & Mbogwe Districts from **25. Geita**.
18. Kagera (KAG)	**18. Kagera (KAG/GEI)**	Chato District from **25. Geita**.
19. Mwanza (MWA)	**19. Mwanza (MWA/GEI/SIM)**	Geita & Nyang'hwale Districts from **25. Geita**; Busega District from **24. Simiyu**.
20. Mara (MAR)	**20. Mara (MAR)**	
21. Manyara (MAY)		
22. Njombe (NJO)		
23. Katavi (KAT)		
24. Simiyu (SIM)		
25. Geita (GEI)		

Annex D

Table D1: Rural and Urban Populations, and derived Propensities, Tanzania 1978-88

Region	RurPop78	RurPop88	UrbPop78	UrbPop88	Prom	Puim	Prim
DOD	886828	1104115	85177	131162	4.91	17.61	-2.94
ARU/MAY	852588	1187495	73635	162730	-6.37	68.78	11.34
KIL	834838	938449	67599	165619	14.15	87.12	-6.56
TAN	891803	1054350	145964	225912	9.71	18.21	-5.78
MOR	803959	1011130	135305	268801	3.95	51.73	4.07
PWA/DAR	552949	680636	806727	1300664	5.99	23.13	11.29
LIN	474434	545247	53190	97117	12.23	39.45	-7.02
MTW	679463	761117	92355	127765	14.45	5.66	-12.04
RUV	518152	688747	43423	91121	-1.52	60.27	6.06
IRI	840968	1076464	84076	116376	2.24	5.71	-1.52
MBE	983241	1210205	96623	266012	6.00	110.26	4.41
SIN	555939	725351	58010	68536	0.35	-9.77	-1.24
TAB	710408	891774	107499	148848	4.13	5.75	-2.83
RUK	398805	504003	53092	99047	3.48	42.48	1.92
KIG	584503	746396	64438	104867	2.47	24.29	0.18
SHI	1267580	1647870	55955	116090	0.71	58.45	1.79
KAG	975506	1144182	34261	69457	10.42	54.83	-8.21
MWA	1295607	1536781	147772	339995	9.41	75.72	-0.69
MAR	671007	852853	52820	99763	2.93	44.25	0.51
Mainland Tz	**14778578**	**18307165**	**2257921**	**3999882**	**5.39**	**35.29**	**0.00**

Notes

1. The rural populations of RUK and KAG have been reduced by 100,000 each in 1988 to make an approximate adjustment for refugees.
2. The national rate of population growth used to calculate *Prom*, *Puim* and *Prim* for the 10 year period 1978-88 is 2.732% p.a.

Annex D

Table D2: Rural and Urban Populations, and derived Propensities, Tanzania 1988-2002

Region	RurPop88	RurPop02	UrbPop88	UrbPop02	Prom	Puim	Prim
DOD	1104115	1478782	131162	213243	9.09	10.36	-7.02
ARU/MAY	1187495	1781377	162730	544316	-1.83	127.05	16.92
KIL	938449	1088611	165619	288091	21.26	18.08	-15.36
TAN	1054350	1335084	225912	301196	14.05	-9.50	-13.24
MOR	1011130	1279513	268801	473849	14.10	19.66	-7.01
PWA/DAR	680636	850041	1300664	2522916	15.23	31.67	15.56
LIN	545247	661228	97117	126396	17.68	-11.66	-16.77
MTW	761117	895942	127765	228539	20.10	21.42	-14.13
RUV	688747	944045	91121	169670	6.96	26.39	-3.06
IRI	1076464	1234560	116376	256332	22.15	49.51	-15.16
MBE	1210205	1642183	266012	421145	7.89	7.47	-5.12
SIN	725351	938081	68536	148667	12.21	47.24	-7.08
TAB	891774	1490581	148848	219884	-13.46	0.27	11.57
RUK	504003	836232	99047	200122	-12.63	37.15	16.65
KIG	746396	1071240	104867	202807	2.58	31.28	1.59
SHI	1647870	2540578	116090	256052	-4.65	49.72	7.62
KAG	1144182	1801407	69457	126750	-6.87	23.87	7.84
MWA	1536781	2328387	339995	601257	-2.85	20.04	5.96
MAR	852853	1109791	99763	253606	11.67	72.56	-2.85
Mainland Tz	**18307165**	**25307663**	**3999882**	**7554838**	**6.16**	**28.21**	**0.00**

Notes

1. The rural populations of RUK and KAG have been reduced by 100,000 each in 1988 to make an approximate adjustment for refugees; the same adjustment was made for RUK and KAG for 2002. In addition, the rural population of KIG was reduced by 400,000 to adjust for the new refugees there.
2. The national rate of population growth used to calculate *Prom*, *Puim* and *Prim* for the 14 year period 1988-2002 is 2.806 % p.a.

Annex D

Table D3: Rural and Urban Populations, and derived Propensities, Tanzania 2002-12

Region	RurPop02	RurPop12	UrbPop02	UrbPop12	Prom	Puim	Prim
DOD	1478782	1762394	213243	321194	10.02	13.72	-7.03
ARU/MAY	1781377	2367101	544316	752340	-0.33	4.36	1.27
KIL	1088611	1242712	288091	397375	13.81	4.14	-10.05
TAN	1335084	1604297	301196	440908	9.27	10.52	-5.63
MOR	1279513	1582434	473849	636058	6.62	1.35	-4.47
PWA/DAR	850041	738297	2522916	4724912	34.42	41.40	22.29
LIN	661228	702603	126396	162049	19.77	-3.20	-17.11
MTW	895942	979350	228539	291504	17.47	-3.70	-14.67
RUV	944045	1038071	169670	338820	16.98	50.77	-6.66
IRI	1234560	1221079	256332	422256	25.32	24.37	-16.78
MBE	1642183	1809298	421145	898112	16.81	61.01	-0.93
SIN	938081	1199936	148667	170701	3.42	-13.31	-4.78
TAB	1490581	2004114	219884	287509	-1.51	-1.28	1.15
RUK	836232	1175534	200122	393609	-6.14	48.50	14.32
KIG	1071240	1662669	202807	365261	-17.19	35.98	20.18
SHI	2540578	2931269	256052	402563	12.89	18.70	-10.00
KAG	1801407	2543717	126750	279433	-6.61	66.45	10.55
MWA	2328387	2818823	601257	1113222	8.60	39.79	1.34
MAR	1109791	1440418	253606	303412	2.00	-9.67	-3.43
Mainland Tz	**25307663**	**30824116**	**7554838**	**12701238**	**8.04**	**26.93**	**0.00**

Notes

1. The rural populations of RUK and KAG have been reduced by 100,000 each in 2002 to make an approximate adjustment for refugees; in addition, the rural population of KIG in 2002 was reduced by 400,000 to adjust for the new refugees there. In 2012, only the rural population of KIG has been reduced by 100,000 to make an approximate adjustment for refugees remaining there. Refugees in other regions seem to have been repatriated by this date.
2. The national rate of population growth used to calculate *Prom*, *Puim* and *Prim* for the 10 year period 2002-12 is 2.850 % p.a.

Annex D

Table D4: Rural and Urban Populations, and derived Propensities, Tanzania 1978-2012

Region	RurPop78	RurPop12	UrbPop78	UrbPop12	Prom	Puim	Prim
DOD	886828	1762394	85177	321194	22.29	47.46	-16.17
ARU/MAY	852588	2367101	73635	752340	-8.57	299.54	31.70
KIL	834838	1242712	67599	397375	41.79	129.88	-28.93
TAN	891803	1604297	145964	440908	29.65	18.12	-22.93
MOR	803959	1582434	135305	636058	23.03	83.83	-7.64
PWA/DAR	552949	738297	806727	4724912	47.79	129.03	57.13
LIN	474434	702603	53190	162049	42.09	19.14	-35.92
MTW	679463	979350	92355	291504	43.64	23.43	-35.61
RUV	518152	1038071	43423	338820	21.66	205.13	-4.12
IRI	840968	1221079	84076	422256	43.22	96.40	-30.53
MBE	983241	1809298	96623	898112	28.04	263.48	-1.96
SIN	555939	1199936	58010	170701	15.60	15.07	-12.70
TAB	710408	2004114	107499	287509	-10.32	4.59	9.57
RUK	398805	1175534	53092	393609	-15.27	189.91	35.79
KIG	584503	1662669	64438	365261	-11.24	121.66	22.20
SHI	1267580	2931269	55955	402563	9.57	181.34	-1.50
KAG	975506	2543717	34261	279433	-1.97	218.94	9.33
MWA	1295607	2818823	147772	1113222	14.92	194.59	6.53
MAR	671007	1440418	52820	303412	16.05	124.63	-5.79
Mainland Tz	**14778578**	**30824116**	**2257921**	**12701238**	**18.44**	**119.97**	**-0.09**

Notes

1. In 2012, the rural population of KIG has been reduced by 100,000 to make an approximate adjustment for refugees remaining there. Refugees in other regions seem to have been repatriated by this date.
2. The national rate of population growth used to calculate *Prom*, *Puim* and *Prim* for the 34 year period 1978-2012 is 2.800 % p.a.

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