Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia

by

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Any views expressed or remaining errors are solely the responsibility of the authors.

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EXECUTIVE SUMMARY

Background

This technical compendium was developed to serve as a reference document for development organizations, researchers, government officials, and cooperating partners working in Zambia. It uses nationally representative survey data to provide descriptive trends and analysis relevant to the agricultural sector. It is also specifically targeted for organizations tasked with implementing programs associated with USAID's Feed the Future (FtF) initiative. As such, a special section is dedicated to Eastern Province, with data disaggregation based on FtF requirements.

Problem Statement

Zambia, like much of the southern Africa region, remains vulnerable to unstable food prices and food insecurity, despite competitive advantages such as abundant agricultural land and a generally favorable climate for food production. The issues around food security and agriculture in southern Africa are dynamic, complex, uncertain and difficult to address. High population growth, rapid urbanization, and stagnant agricultural production are contributing to an emerging structural deficit of food crops in the region. Finding ways of effectively coping with this emerging food deficit is critical for fostering economic growth, reducing poverty, and enhancing food/nutrition security for the people of southern Africa. Addressing this challenge requires placing agriculture- and the associated processes of production, trade, processing, and consumption - at the forefront of any economic development strategy for the region.

Zambia is in a unique position to not only leverage agriculture as an engine for poverty reduction and improved nutrition, but to become the *breadbasket* of southern Africa. The country is endowed with an abundance of fertile land, water, and a generally favorable climate for agricultural production. Zambia's small- and medium-scales farming households have in the past 5 years recorded surplus maize harvests, including consecutive record-breaking harvests, between 2009/10 and 2011/12 agricultural seasons. This has largely been due to favorable weather combined with generous subsidies for maize production and marketing. In addition, the country is experiencing high economic growth which can be largely attributed to high global copper prices and increased investment in construction.

Despite these unique endowments, positive economic growth, and surplus maize production, poverty rates in the country remain high. While the poverty rates in urban areas have reduce to under 30%, poverty in rural Zambia have remained stubbornly high, at 80% of the population, and incidences of stunting, malnutrition, and wasting continue to disproportionately affect rural Zambians. Addressing these issues requires solid empirical evidence to guide investments and identify viable development strategies. The Technical Compendium aims to provide a common foundation of data and analysis to be used by the diverse stakeholders involved in Zambia's agricultural sector.

Data

The data presented in this technical compendium is derived from a variety of sources. Data on household production come primarily from two nationally representative surveys: 1. the

Crop Forecast Survey (CFS) conducted annually by the Ministry of Agriculture and Livestock (MAL); and 2. the Supplemental Survey (SS) to the Post-Harvest Survey (PHS), conducted in 2001, 2004, and 2008 by MAL and the Central Statistics Office (CSO). In 2012 the SS was extended to become the Rural Agricultural Livelihoods Survey (RALS) conducted by the Indaba Agricultural Policy Research Institute (IAPRI) with CSO. The 2001, 2004, and 2008 SS are nationally representative household panel surveys.

Nutritional and health data come from the Living Conditions Monitoring Survey (LCMS) carried out by CSO. Other important data sources include Food and Agricultural Organization Online Statistical Database (FAOSTAT), the CSO PHS, and the Food Security Research Project (FSRP) Urban Consumption Survey.

Key Findings

- Zambia has a high population growth rate and is highly urbanized. About 40% of the country's population lives in urban areas. These, coupled with other factors contribute to increased pressure on Zambia's food, health care, sanitation, and education systems, increasing threats to levels of food insecurity, malnutrition, and poverty, particularly for the poorest and most vulnerable segments of the population.
- The overall poverty rate in Zambia has declined over time. However, poverty rates in rural Zambia have remained very high, with 80% of the rural population living in poverty.
- The country has continued to experience chronic food and nutrition security problems. Stunting rates in Zambia stand at 46%. Stunting remains the most common nutritional disorder affecting under five years children in Zambia, above the Sub-Saharan Africa average of 42%.
- Zambia's economy has grown steadily in real terms since 2001. The Gross Domestic Product (GDP) in Zambia grew by 7.3% in 2012 from the previous year. However the percent contribution of the agricultural sector to GDP has declined from 16% in 2001 to 12.6% in 2012.
- Cropping characteristics: Small-scale farming systems in Zambia are overwhelmingly dominated by a single crop: maize. In 2011/12, 86% of all smallholders grew maize. Cassava cultivation, the second most important staple food crop, is geographic confined to the north and northwestern parts of Zambia. Groundnuts, the second most widely cultivated crop in Zambia and important source of protein in Zambian diets, are frequently intercropped with maize. In Zambia, groundnuts are often considered a *women's crop* due to their importance for home consumption.
- Yields: Yields for all crops in Zambia are well below global averages. National yields are generally low. The top 10% of smallholders achieve yields that are one to nearly four metric tons (mt) more than the average depending on the crop. This suggests the potential for yield improvements in Zambia.
- Input use: While input use has trended upward since 2001, 45% of Zambia farmers still do not use fertilizer on their fields, while more than 40% do not use hybrid maize seeds.
- Land: Despite a relatively low population density, growth in the number of rural households contributes to increasing land fragmentation and shrinking land size holding in Zambia. While the mean land size holding in Zambia is 3.27 hectares, three quarters of the rural population controls on average 2.5 hectares of land or less. This is indicative of significant differentiation within the smallholder sector.

- Despite the high prevalence of maize cultivation in rural Zambia, a considerable proportion of the small- and medium-scale agricultural households are net buyers of maize. In a record maize production year, 28% of rural households remain net buyers of maize. These farmers tend to control smaller farm sizes and tend to be located in more marginal agro-ecological zones.
- Government spending on agriculture to the total government budget rose from 12.2% in 2007 to 13.6% in 2011 which is above the spending goal agreed upon under the 2003 Maputo declaration. However, procurement and distribution of maize through the Food Reserve Agency (FRA) and input subsidies through the Fertilizer Support Program/Farmer Input Support Program (FSP/FISP) account for over 80% of the total agricultural budget.

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ACRONYMS

AU	African Union
CAADP	Comprehensive Africa Agriculture Development Programme
CFS	Crop Forecast Survey
CSO	Central Statistics Office
FAOSTAT	Food and Agricultural Organization Online Statistical Database
FRA	Food Reserve Agency
FSP/FISP	Fertilizer Support Program/Farmer Input Support Program
FSRP	Food Security Research Project
FtF	Feed the Future
GDP	Gross Domestic Product
GHT	Gendered Household Type
GRZ	Government of the Republic of Zambia
HH	House Hold
IAPRI	Indaba Agricultural Policy Research Institute
LCMS	Living Conditions Monitoring Survey
MAL	Ministry of Agriculture and Livestock
MT	Metric Ton
NGO	Non-Governmental Organization
OPV	Open Pollinated Variety
PHS	Post-harvest Survey
PPP	Purchasing Power Parity
PS	Priority Survey
RALS	Rural Agricultural Livelihoods Survey
SID	Simpson Index of Diversity
SS	Supplemental Survey
UN	United Nations
USAID	United States Agency for International Development
US$	U.S. dollars
ZMK	Zambian Kwacha
ZOI	zone of influence

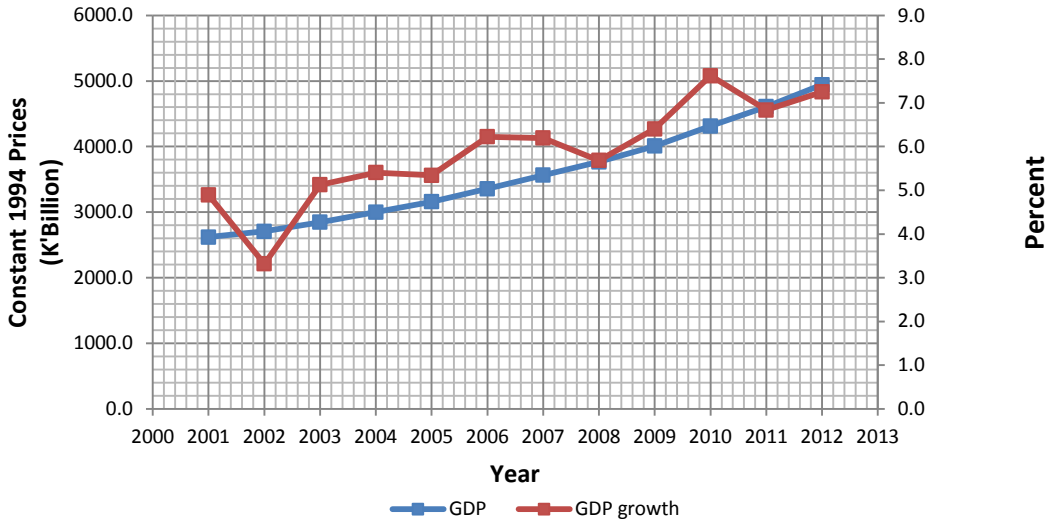
1. MACRO-ECONOMIC TRENDS

1.1. The Economic Indicators

Zambia's economy has grown rapidly over the last decade, due in large measure to an expansion of copper mining industry and foreign investment in retail, construction, and manufacturing sectors. This section presents data on macro-economic trends in Zambia. The aim of this section is to provide an analysis of the broader economic context within which Zambia's agricultural sector is situated.

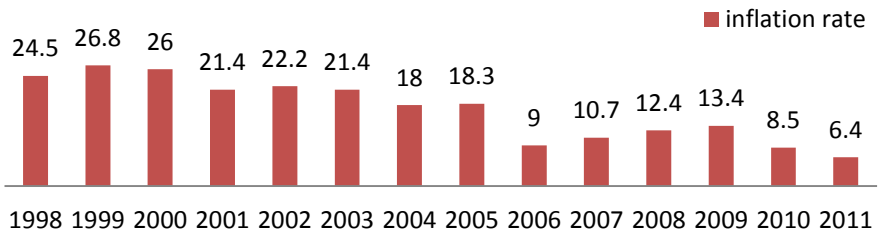
- Figure 1 is a chart with historical data GDP Annual Growth Rate in Zambia. Zambia's economy has grown steadily in real terms since 2001. In 2012 Zambia's GDP grew by 7.30% compared to the previous year, and has remained above 5% for much of the last decade. This tremendous growth makes Zambia one of the fastest growing economies in the world.
- The annual inflation rate in Zambia dropped to 6.4% in 2011, down 8.5% the previous year. Inflation Rate in Zambia is computed and reported by the CSO. The inflation rate reached an all time high of 26.8% in 1999 and a record low of 6.4% in 2011. Figure 2, below, shows the historical trends for annual Inflation Rate in Zambia.

Figure 1. Zambia GDP at Constant 1994 Prices (K'Billion)



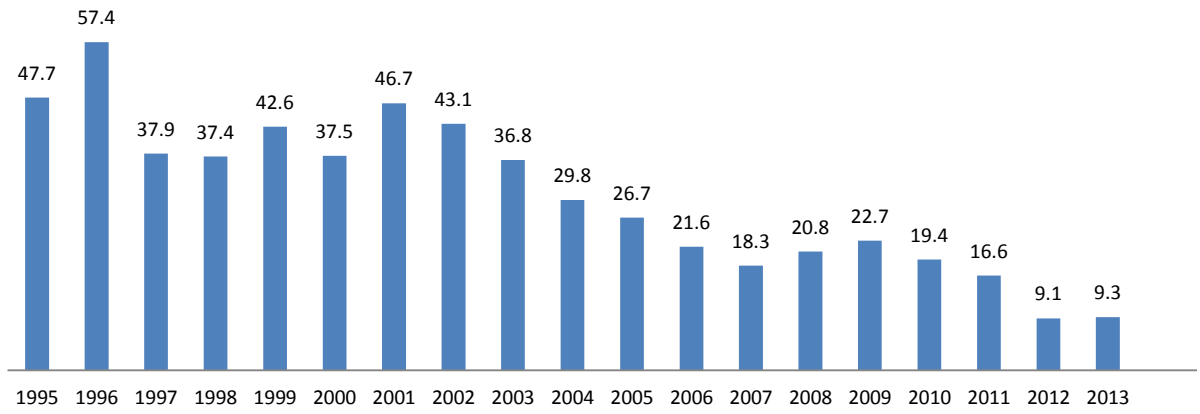
Source: Ministry of Finance and National Planning 2012.

Figure 2. Annual Inflation Rate, Zambia, 1998-2011



Source: World Bank Accessed on March 12, 2013 at http://data.worldbank.org/country/zambia

Figure 3. Commercial Bank Lending Rates (Weighted Lending Base Rate), 1995-2013, Zambia



Source: Bank of Zambia 2013.

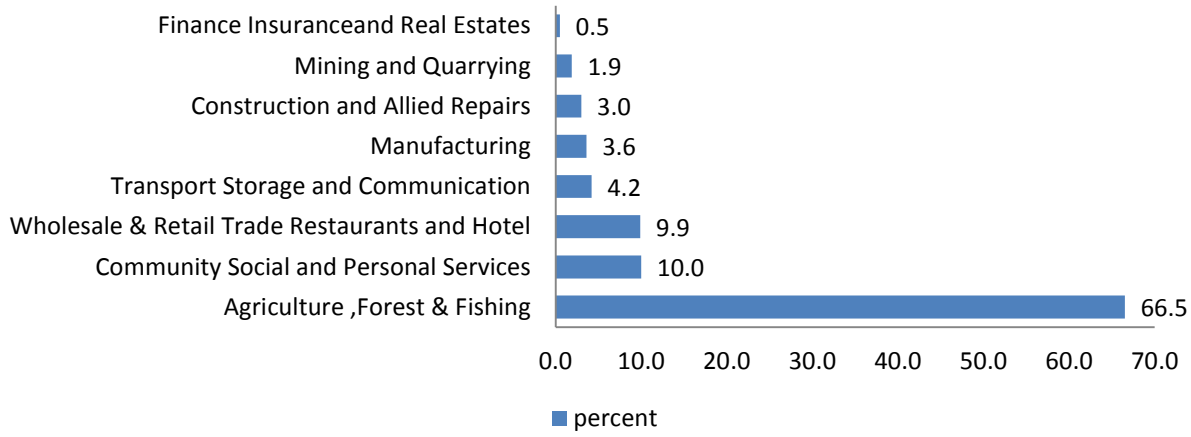
- Figure 3 shows data on commercial bank lending rates from 1995 to 2013. With inflation rates declining from their highs earlier in the decade, commercial lending rates have also gradually declined. However, in January, 2013, the government, through the Bank of Zambia, introduced caps on the maximum effective annual lending rates that licensed commercial banks and non-bank financial institutions can charge their customers. The commercial bank maximum effective annual lending rate stand at 18.25%, while that for micro-finance service providers is 42%. The maximum effective annual lending rate that will be charged by all other non-bank financial institutions shall not exceed 30%. This may have the adverse effect of cutting off potential credit sources for many potential borrowers, including in the agricultural sector.

1.2. Agriculture's Place in Zambia's Economy

While Zambia has experienced positive GDP growth over the last decade, the growth of the agricultural sector has been stagnant to moderate. This has led to a declining share of agriculture to Zambia's overall GDP. Despite this, agriculture remains the primary livelihoods source of Zambians, particularly the poor. Thus, improving the growth conditions for agriculture in Zambia is critical for both improving overall GDP growth and improving the livelihoods conditions of the majority of Zambians.

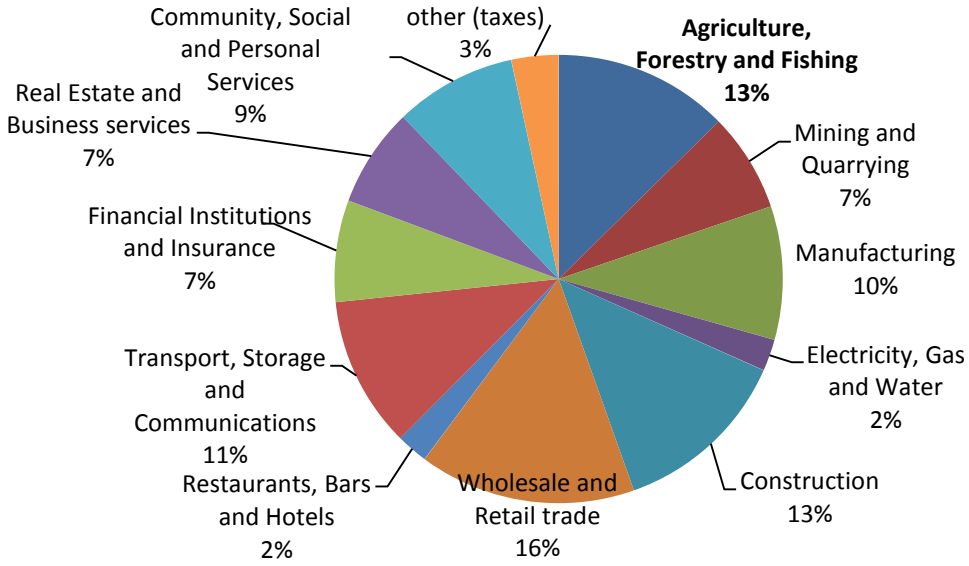
- Agriculture in Zambia supports the livelihoods of over 66% of the population, making it by far the most important source of livelihood and employment in Zambia (Figure 4).
- Yet, despite its importance in terms of employment, the agricultural sector contributes relatively little to the overall GDP. In 2012, agriculture's contribution to GDP was about 13% (Figure 5).

Figure 4. Percentage Distribution of Usually Working Population (12 Years and Older) by Industry, Zambia



Source: 2010 Census of Population National Analytical Report 2013.

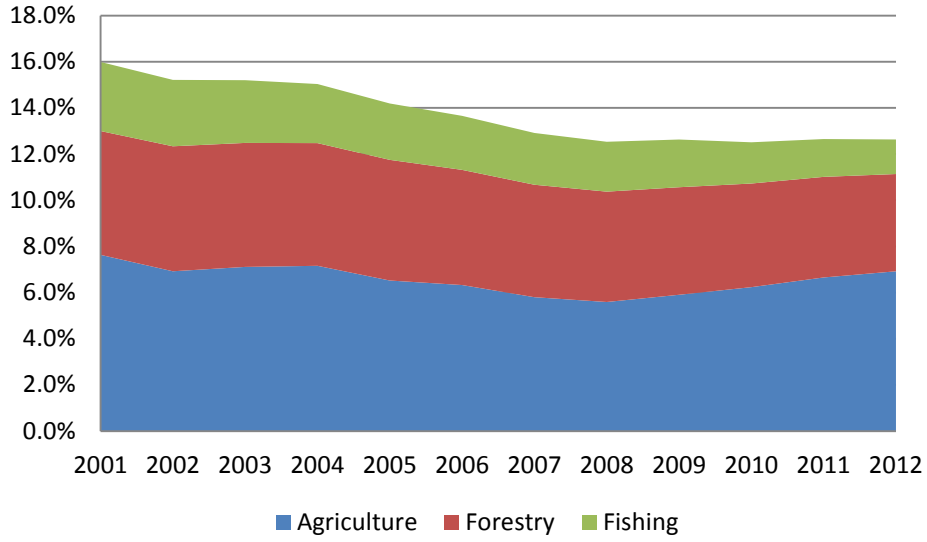
Figure 5. Contribution of Selected Sectors to GDP (%), 2012



Source: Central Statistical Office data 2012.

- Zambia's economy has grown steadily in real terms since 2001. However, the percent contribution of the agricultural sector to GDP has declined from 16% in 2001 to 12.6% in 2012 (Figure 6). This suggests that agricultural growth has not kept pace with growth in other sectors of the economy. This is worrying given the percent of Zambians who depend on agricultural for their livelihoods. Overall GDP growth combined with a declining contribution from agriculture in a primarily agrarian country like Zambia indicates a widening income gap between urban wage earners and the rural poor.

Figure 6. Contribution of Agricultural Sector to GDP, 2012



Source: Central Statistical Office data 2012.

2. DEMOGRAPHY AND EMPLOYMENT

2.1. Population

Zambia, like much of Africa, is experiencing rapid population growth, coupled with massive urbanization. Moreover, like other countries in the region the population is largely young. Thus, a major challenge facing Zambia and the region is identifying strategies to feed a rapidly growing, urban population, while creating employment opportunities for millions of young people entering the job market.

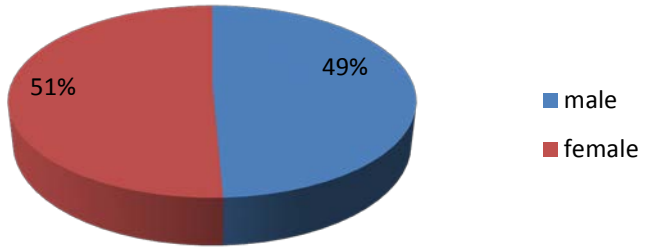
- According to the 2010 Census of Population Zambia's total population was 13 million, the majority of which live in rural areas. Of the total population, 49.3% (6,454,647) were males and 50.7% (6,638,019) were females. (Table 1 and Figure 7).

Table 1. Population by Province, Region, and Sex, Zambia, 2010

Region and Province	Population			%	
	Total	Male	Female	Male	Female
Zambia	13,092,666	6,454,647	6,638,019	49.3	50.7
Rural	7,919,216	3,906,636	4,012,580	49.3	50.7
Urban	5,173,450	2,548,011	2,625,439	49.3	50.7
Central	1,307,111	648,465	658,646	49.6	50.4
Copperbelt	1,972,317	981,887	990,430	49.8	50.2
Eastern	1,592,661	784,680	807,981	49.3	50.7
Luapula	991,927	488,589	503,338	49.3	50.7
Lusaka	2,191,225	1,082,998	1,108,227	49.4	50.6
Muchinga	711,657	349,872	361,785	49.2	50.8
Northern	1,105,824	546,851	558,973	49.5	50.5
North-Western	727,044	358,141	368,903	49.3	50.7
Southern	1,589,926	779,659	810,267	49.0	51.0
Western	902,974	433,505	469,469	48.0	52.0

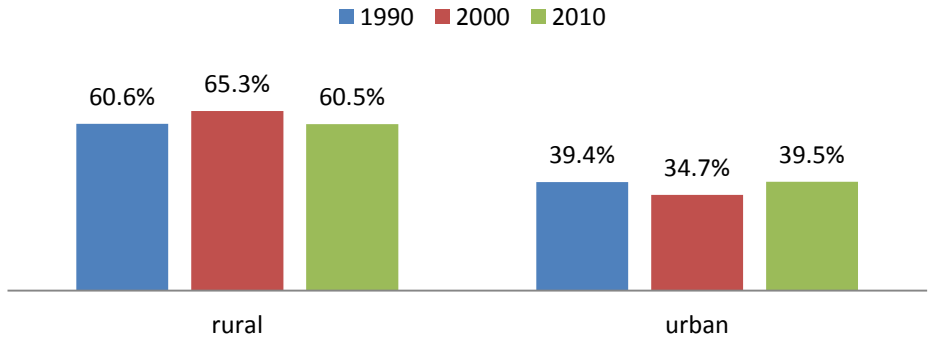
Source: 2010 Census of Population National Analytical Report, Central Statistical Office 2012.

Figure 7. Population Composition by Sex, Zambia, 2010



Source: 2010 Census of Population and Housing, Population Summary Report, CSO 2010

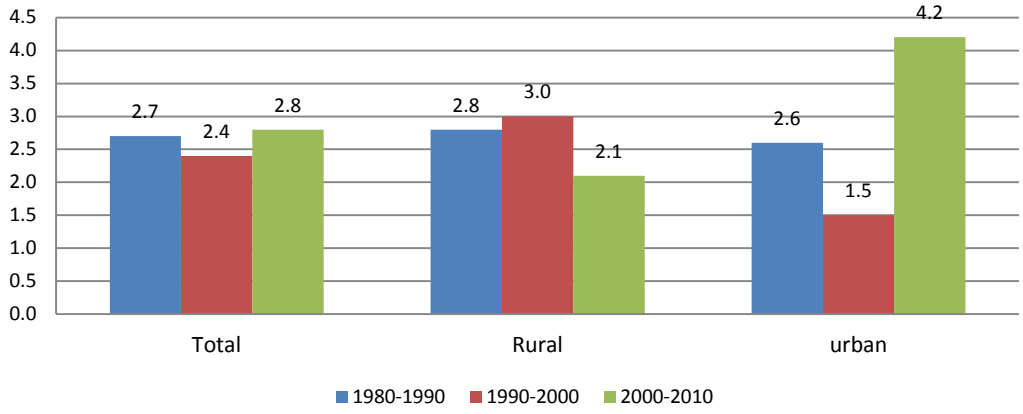
Figure 8. Percentage of Population by Rural/Urban, Zambia 1990-2010



Source: 2010 Census of Population National Analytical Report, Central Statistical Office 2012.

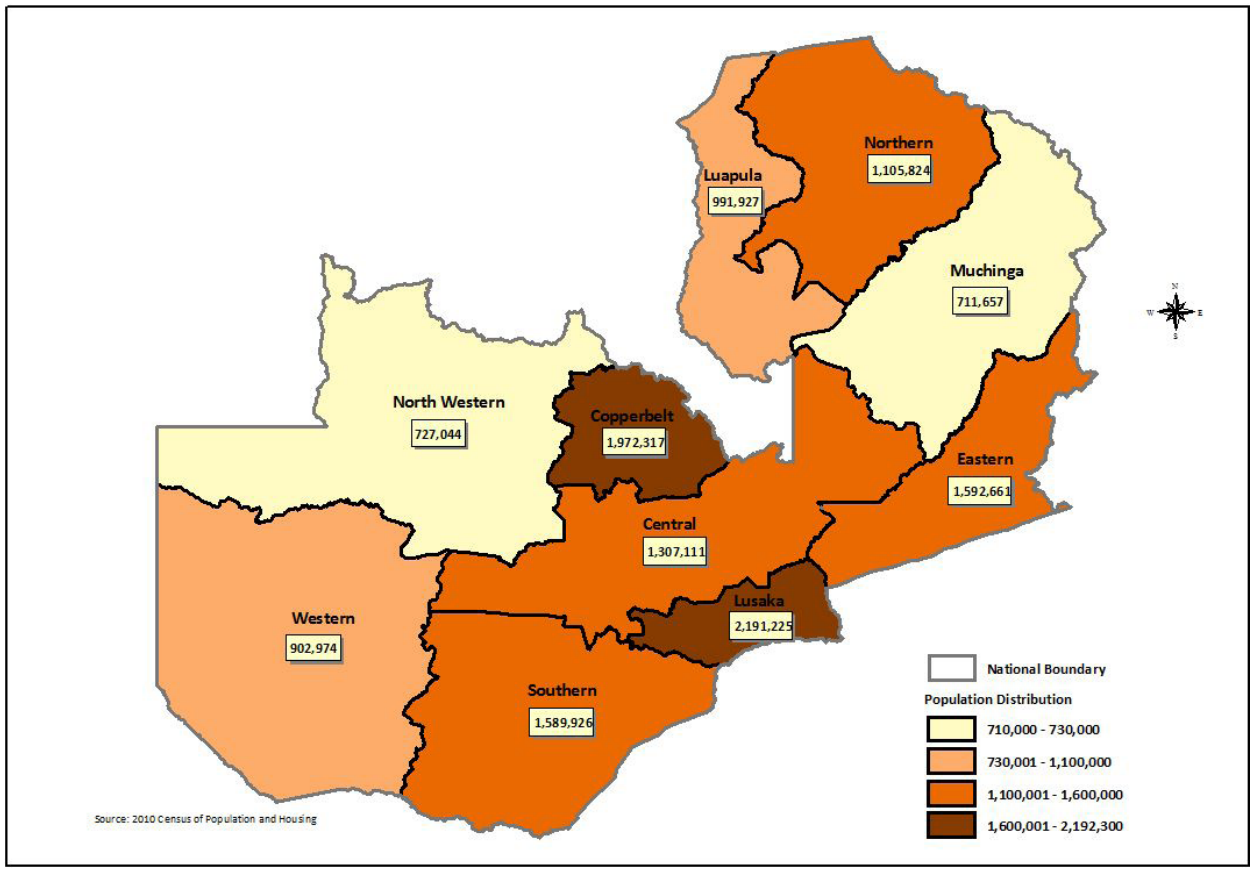
- In Zambia, 60.5% of the population resides in rural areas and 39.5% in urban. Zambia is therefore highly urbanized by regional standards. As shown in Figure 8, Zambia underwent a unique demographic shift in the 1990s, from which it is now recovering. Due to the collapse of the economy in the early 1990s, many urban dwellers returned to rural areas in search of a livelihood. This urban to rural migration caused the percent of rural dwellers to grow between the 1990 to 2000 census. The 2010 census suggests that the trend has reversed, due in part to economic opportunities in urban regions since 2000, coupled with stagnant growth in much of the rural economy.
- Zambia's population grew at a rate of 2.8% per annum during the 2000-2010 period. This was an increase from the annual rate of 2.7% and 2.4% recorded during the 1980-1990 and 1990-2000 periods, respectively (Figure 9). The population growth rate of 2.8% per annum during the 2000-2010 period makes Zambia one of the fastest growing populations in the world (ranked 13th in 2013). As shown in Figure 9, urban Zambia is experiencing a dramatic increase in populations. While this may be partially explained by income opportunities in urban areas, there is a real fear the much of this growth is being driven by *push* factors in rural Zambia, where income opportunities may be declining.

Figure 9. Percent Annual Average Rate of Population Growth by Rural/Urban Zambia 1980-1990, 1990-2000, 2000-2010



Source: 2010 Census of Population and Housing, Population Summary Report, CSO 2010.

Map 1. Total Population by Province, Zambia, 2010



Source: 2010 Census of Population and Housing, Population Summary Report, CSO 2012.

- In Zambia, populations are concentrated along the *line of rail* and the Copperbelt Province, where most of Zambia's industrial activities take place and where the majority of urban centers are located (Map 1). At provincial level, Lusaka Province had the largest percent share of the population at 16.7% (2,191,225) of the total population. Copperbelt Province was second with 15.1% (1,972,317), while Eastern Province was third with 12.2% (1,592,661) of the total population. Muchinga Province had the least percent share of the total population at 5.4% (711,657). Muchinga Province is Zambia's tenth province, created in November 2011. Before then, it was part of the old Northern Province.

2.2. Employment

The 2010 census provides the latest figures on employment and related indicators.
For the census, the working-age population was defined as all persons 12 years and older. This is the population from which measurement of the economic characteristics of the population were based.

Following are other related definitions and concepts.

2.2.1. Labour Force Participation Rate

This is defined as the ratio of the economically active population to the working age population expressed as a percent. The economically active population is one that engages actively in the labour market, either by working or looking for work. The labour force participation rate provides an indication of the relative size of the supply of labour available.

2.2.2. Unemployment Rate

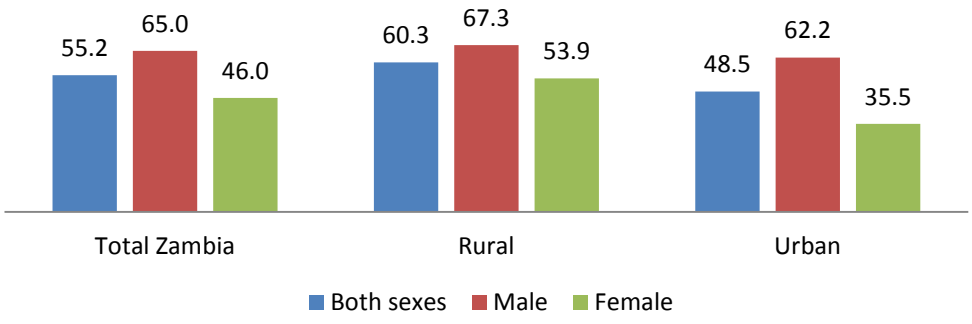
This is the proportion of the labour force who have no jobs, are available for work and are seeking work in a given reference period in the total labour force expressed as a percent. The unemployment rate tells us the proportion of the labour force that does not have a job and is actively looking for work. The employed population includes all persons who had a job and would normally have worked for pay, profit, or return in kind.

2.2.3. Youth Unemployment Rate

This was defined as a proportion of the labour force aged 15-35 years who had no jobs, were available for work and were seeking work in a given reference period in the total youthful labour force expressed as a percent. According to the 2010 census results, the population aged 12 years and older was 7,715,022. Out of these, 56.8% were in rural areas while 43.2% were in urban areas, 48.3% were male and 51.7% female.

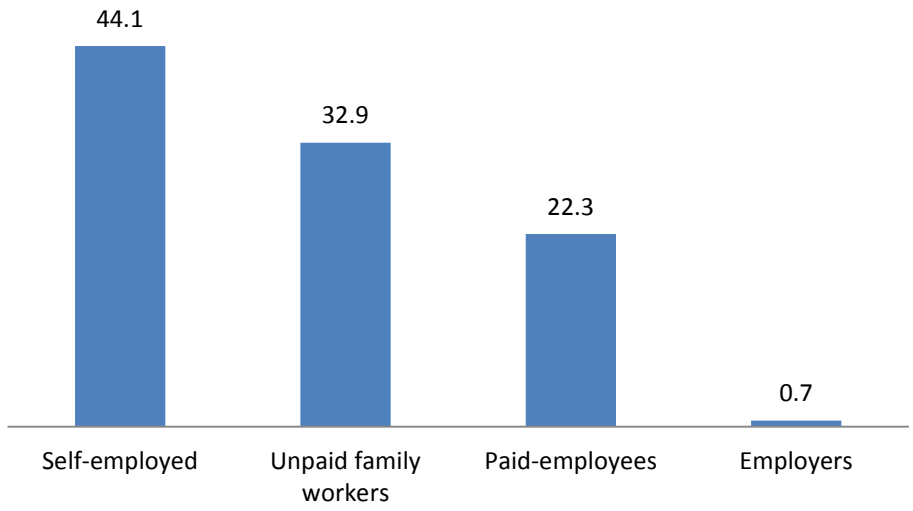
- The overall labour force participation rate was recorded at 55.2%. The labour force participation rate was higher (60.3%) in rural areas, where most of the population is engaged in agriculture, than the urban rate of 48.5%. In the male population, participation rate was 65.0% compared to 46.0% in the female population (Figure 10).
- The majority of the employed population was in self employment (44.1%) followed by unpaid family workers (32.9%) (Figure 11). This suggests that the formal labor market remains under-developed.

Figure 10. Labour Force Participation Rate (12 Years and Older) by Sex and Rural/urban, Zambia, 2010



Source: 2010 Census of Population and Housing, Population Summary Report, CSO 2010.

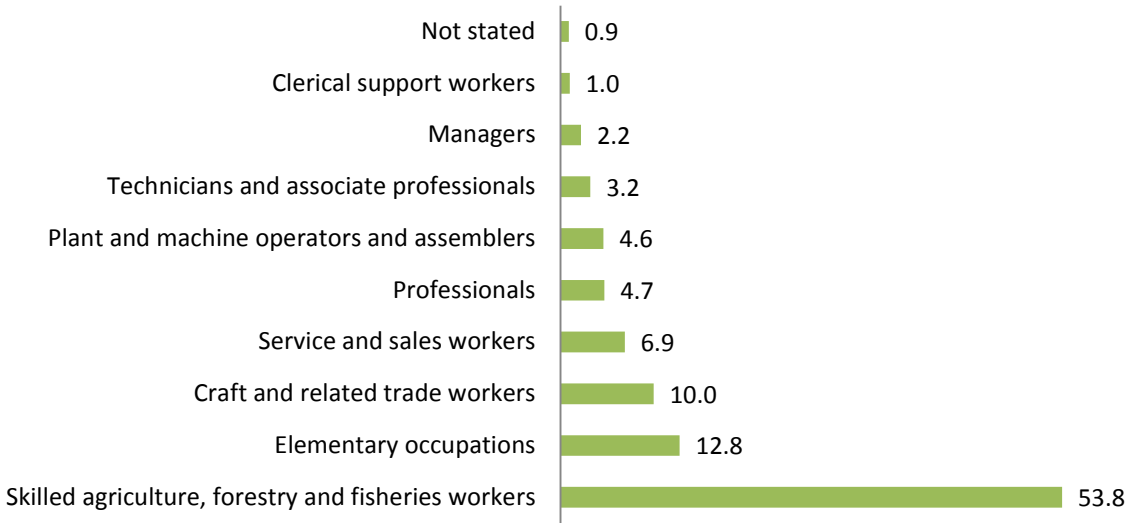
Figure 11. Percentage Distribution of Usually Working Population (12 years and Older) by Employment Status, Zambia, 2010



Source: 2010 Census of Population and Housing, Population Summary Report, CSO 2010.

- The main occupation among the usually working population was in agricultural, forestry and fishing at 53.8%, followed by the elementary occupations at 12.8%. Managers accounted for 0.9% of the total working age population (Figure 12).

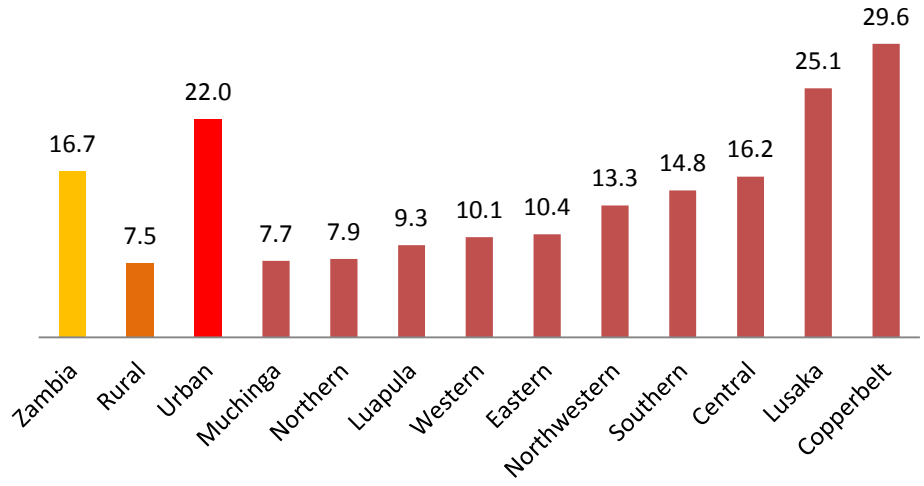
Figure 12. Percentage Distribution of Usually Working Population (12 Years and Older) by Occupation, Zambia, 2010



Source: 2010 Census of Population and Housing, Population Summary Report, CSO 2010.

- The youth unemployment rate was 16.7%, with urban youth unemployment rate being higher (22.0%) than the rural unemployment rate (7.5%). In general, provinces with high urban populations had higher youth unemployment rates. Copperbelt, home to many mines, had the highest youth unemployment of 29.6 while the lowest rate was from Muchinga Province 7.7 (Figure 13). A key contributing factor to youth unemployment, in regions with an established mining industry such as the Copperbelt may be the growing mismatch between the skills that youngsters have and the vacancies that employers want to fill. The government would do well to address the mismatch between skills and jobs by placing a lot of emphasis on high-quality vocational courses, apprenticeships, and links with industry.

Figure 13. Youth Unemployment Rate by Rural/Urban and Province, Zambia, 2010



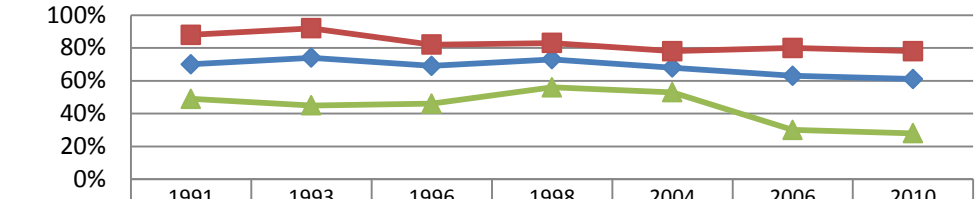
Source: 2010 Census of Population and Housing, Population Summary Report, CSO, 2010.

3. POVERTY AND NUTRITION

Despite strong economic growth in the last decade, Zambia has made little progress in reducing poverty, particularly in rural areas. While the overall poverty rate in Zambia has declined over time, poverty rates particularly in rural Zambia remain stubbornly high, with 78% of the rural population living in poverty, in 2010. This section presents incidence of poverty in Zambia using two measures: the first one is that is used by the CSO that determines poverty by comparing the household's measure of income (consumption expenditure) to an absolute poverty line; the second is an international poverty line of per capita U.S. dollars (US$)1.25/day measured at 2005 purchasing power parity (PPP), used by the World Bank.

- According to the CSO figures, rural poverty rates remain stubbornly high at 78% whilst urban poverty rates are reported to have declined from 49% in 1991 to 28% in 2010 (Figure 14). Redressing such high poverty rates in the rural Zambia has always been the government priority as outlined in the National Development Programs though the solutions have been elusive.
- Provinces located far from the line of rail, have the highest proportions of people living in extreme poverty. These provinces are Luapula Province (64.9%), Western Province (64.0%), and Eastern Province with 58.7% of its population living in extreme poverty (Figure 15).

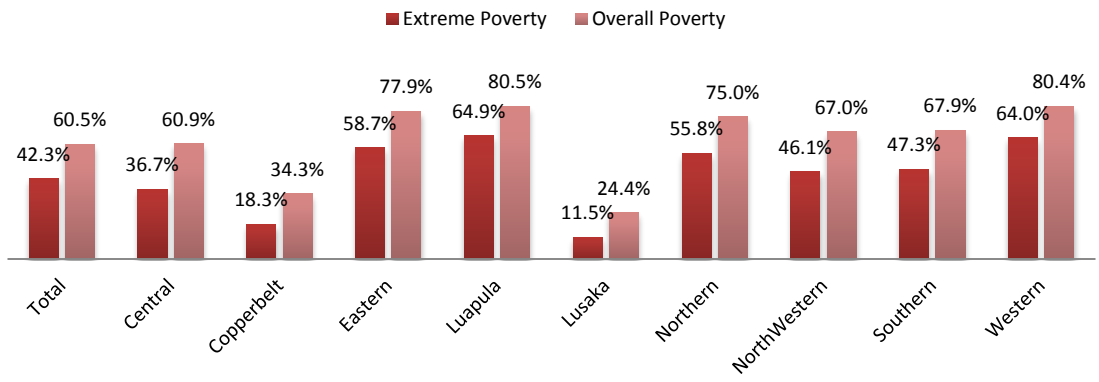
Figure 14. Poverty Levels in Zambia, 1991 to 2010



	1991	1993	1996	1998	2004	2006	2010
Total	70%	74%	69%	73%	68%	63%	61%
rural	88%	92%	82%	83%	78%	80%	78%
urban	49%	45%	46%	56%	53%	30%	28%

Source: PSI Surveys 1991, 1993: LCMS Surveys 1996, 1998, 2004, 2006, 2010, Central Statistical Office.

Figure 15. Poverty Levels, Extreme and Overall by Province, 2010



Source: Living Conditions Monitoring Survey 2010, CSO.

Table 2. Distribution of Per capita Income among Smallholder Households, 2011/12

		Per capita gross household income from sources observed (US$)			
		Mean	Median	Percentile 25	Percentile 75
Province	Central	455.02	223.72	111.48	451.49
	Copperbelt	567.50	223.69	118.44	460.37
	Eastern	389.68	216.72	119.28	388.01
	Luapula	664.01	285.75	159.06	514.26
	Lusaka	1,351.59	319.95	122.40	815.81
	Muchinga	446.62	212.03	110.51	474.00
	Northern	469.45	314.70	184.99	547.98
	NorthWestern	442.45	202.77	115.05	420.61
	Southern	693.99	202.51	109.22	424.06
	Western	301.92	163.34	77.19	319.67
	Zambia	514.49	230.87	120.04	448.81

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

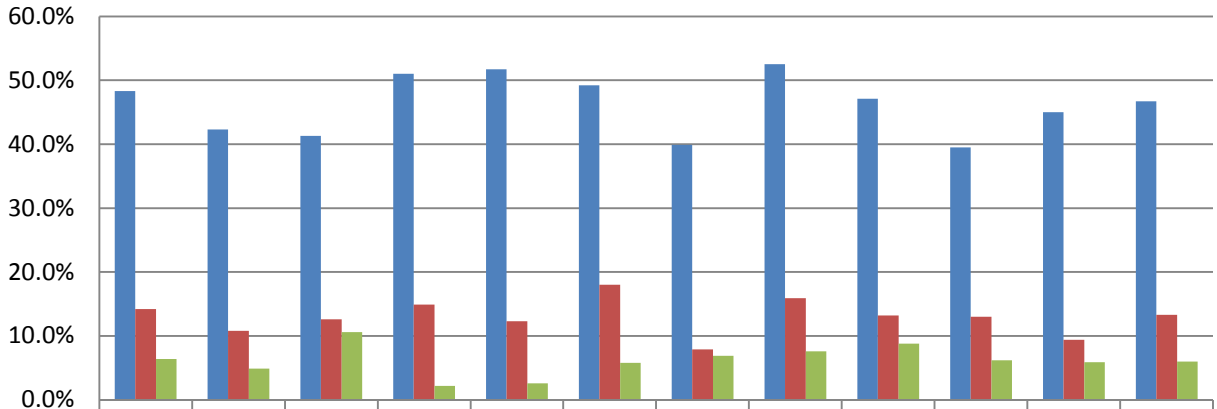
- Table 2 presents the average per capita income, in US$, among smallholder farming households. Incomes are generally low. Lusaka, with an average per capita gross income of US$1,351.59 being the highest. The province with the lowest per capita income is Western, with an average of US$301.92. It is also important to note from Table 2 that in most cases mean income is far larger than the median, suggesting a skewed distribution of incomes, with a small group of relatively high earners pulling the mean income up. This is consistent with a highly differentiated smallholder sector.
- In Table 3 shows the incidence of poverty using the 1.25 US$/day poverty line measured at 2005 PPP. At national level, 75.5% of all rural smallholder households were poor. Lusaka Province had the lowest poverty rate with 59.6% while Western Province had the highest rate of 84.8%.

Table 3. Prevalence of Poverty: Percent of Smallholder Households Living on Per capita Income of Less than $1.25/day (2005 ppp Exchange Rate), Province, 2011

Province	**Poverty rate**
Central	75.5
Copperbelt	74.8
Eastern	80.0
Luapula	70.6
Lusaka	59.6
Muchinga	74.7
Northern	68.0
NorthWestern	76.8
Southern	76.3
Western	84.8
Zambia	**75.5**

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Figure 16. Incidence of Stunting, Underweight, and Wasting of Children (3-59 Months) by Rural/urban and Province, 2010, Zambia



	Rural	Urban	Central	Copperbelt	Eastern	Luapula	Lusaka	Northern	North-Western	Southern	Western	All Zambia
Stunting	48.3%	42.3%	41.3%	51.0%	51.7%	49.2%	39.9%	52.5%	47.1%	39.5%	45.0%	46.7%
Underweight	14.2%	10.8%	12.6%	14.9%	12.3%	18.0%	7.9%	15.9%	13.2%	13.0%	9.4%	13.3%
Wasting	6.4%	4.9%	10.6%	2.2%	2.6%	5.8%	6.9%	7.6%	8.8%	6.2%	5.9%	6.0%

Source: Living Conditions Monitoring Survey 2010, CSO, 2012.

- Incidences of stunting, underweight, and wasted children are higher in rural Zambia than in urban: 48.3% of children exhibiting sign of stunting in rural Zambia compared to 42.3% in urban. Yet, with a national average of 46.7% of fewer than five children exhibiting signs of growth stunting, under-nutrition must be considered a serious problem throughout Zambia (Figure 16).

4. PUBLIC SPENDING AND ALLOCATION TO AGRICULTURE

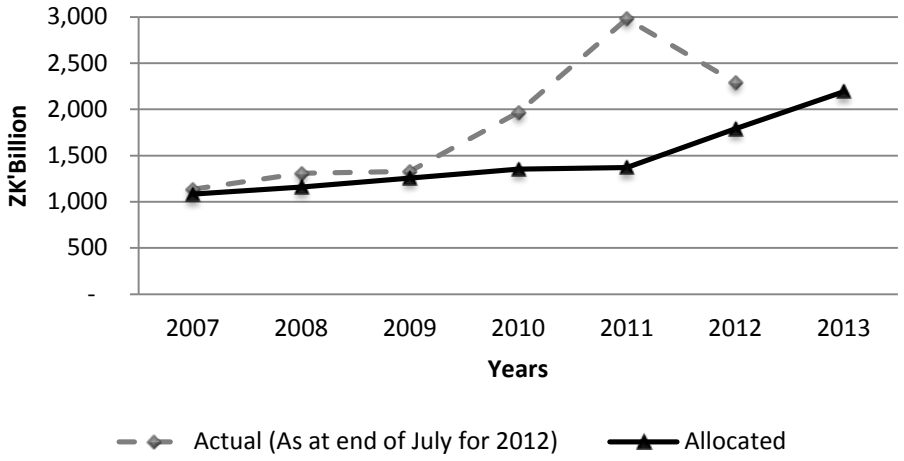
Agriculture is crucial for economic and social development, as the majority of the Zambian population resides in rural areas, and over half the workforce is engaged in agriculture. Growth in agriculture is seen as the most effective strategy for reducing poverty and promoting overall economic growth.

In recognition of the importance of agricultural growth on the continent, the African Union (AU) Heads of State adopted the Comprehensive Africa Agriculture Development Programme (CAADP) in June 2003 at the African Union Summit in Maputo, Mozambique. Through CAADP, African states committed to the achievement of 6% annual agricultural growth as its main goal. To achieve this goal, African governments pledged to increase agricultural spending to at least 10% of total government budgetary resources by 2008. These commitments explicitly place agriculture at the center of national growth and poverty reduction strategies and aim put countries on track towards achieving the first Millennium Development Goal of halving poverty and hunger by 2015.

While CAADP draws significant attention to public spending levels on agriculture, this alone does little to help understand the extent to which spending can be translated into poverty reduction and growth. This section, therefore, examines the trends and composition of Zambia's public spending on agriculture in the context of stagnant rural poverty levels.

- Figure 17 shows the size of the government budget for agriculture in real terms. It shows that from 2007 to 2013 the Zambian treasury allocated in the national budget between Zambian Kwacha (ZMK)1.1 trillion to ZMK2.2 trillion to the sector. However, the actual amount spent on the sector has been consistently higher than what was allocated through the years. In 2011, actual expenditure was at its highest with about ZMK 3 trillion spent against the allocated ZMK1.4 trillion. This difference has been driven primarily by unbudgeted expenditures on the FRA, which were mandated by the government to purchase the entirety of the bumper maize harvests from 2010 to 2012.

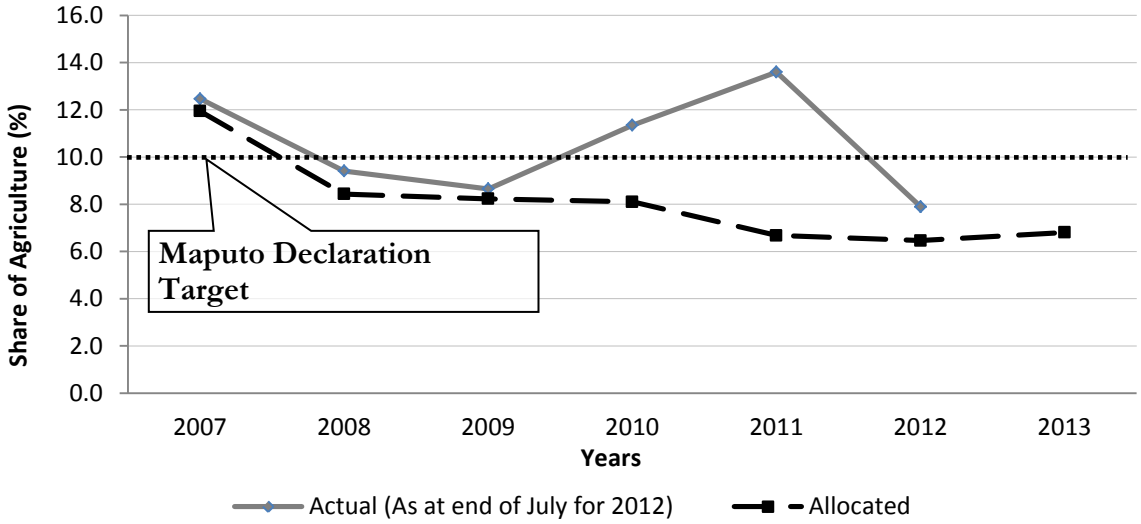
Figure 17. Real Budget Size of the Agriculture Sector from 2007 to 2013



Source: Government of the Republic of Zambia Budgets.

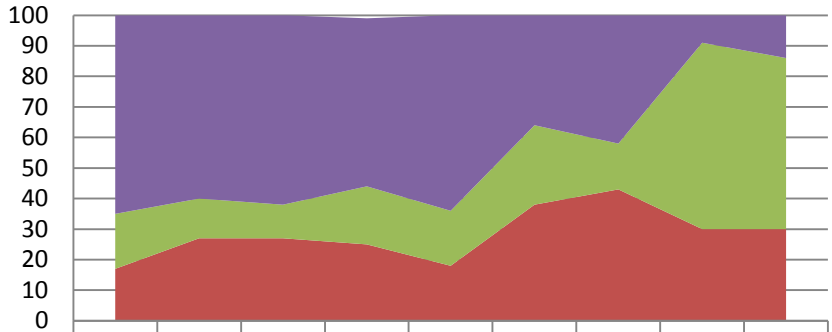
- At the time of signing the Maputo Declaration in 2003, Zambia was committing 6.1% of its national resources towards agriculture. From 2008 onward, budget allocation for the agricultural sector by the treasury have been significantly below the 10% budget target laid out in the Maputo Declaration. However, due to unanticipated spending on FRA, which procured millions of tons of maize from 2010-2012, actual spending on the sector exceeded the 10% threshold (Figure 18). Due to the limited participation of poor smallholders in maize output markets; this spending is unlikely to have had a measurable effect on rural poverty (See section 5.3).
- Figure 19 shows the trend for actual expenditure on agriculture, from 2003 to 2011. The share of actual expenditure on the two components has been growing since 2003. As of 2010, spending on FRA and FISP comprised 91% of the government's actual spending on the agricultural sector. This leaves virtually no other funds for basic research, extension, or other agricultural programs.

Figure 18. Share of Agriculture to GRZ Budget 2007-2013



Source: Government of the Republic of Zambia (GRZ) Budgets.

Figure 19. Percentage Share of FISP/FSP and FRA of the Total MAL Budget, 2003-2011



	2003	2004	2005	2006	2007	2008	2009	2010	2011
Other	65	60	62	55	64	36	43	9	14
FRA	18	13	11	19	18	26	15	61	56
FSP/FISP	17	27	27	25	18	38	43	30	30

Source: Government of the Republic of Zambia Budgets.

- Table 4 presents the distribution of FISP fertilizer and expected maize sales by smallholder household farm size for 2010/11. This table shows that poverty levels are concentrated among the 73% of smallholder households that cultivate less than two hectares of land. However, despite being called Poverty Reduction Programs, the benefits of FISP and FRA are disproportionately concentrated among the households cultivating large land areas, who also tend to be less poor. As shown in Column (D) a higher percentage of households with larger areas under cultivation acquire FISP fertilizer than those with smaller areas under cultivation. They also tend to acquire more fertilizer under the program (Column E). Farmers with larger areas under cultivation also tend to produce a surplus of maize more often than smaller farms (Column G) and produce significantly larger surpluses (Column H). As such, they are much more likely to benefit from the price supports from FRA.

  The ways in which public spending on agriculture appears to be disproportionately directed at larger smallholder households, where poverty tends to be less concentrated (Column C), helps to explain why Zambia has been able to exceed the Maputo Declaration spending goal without having a measurable impact on rural poverty.

Table 4. FISP Fertilizer Received (2010/11 Crop Season) and Expected Maize Sales, 2011, by Farm Size Category

Total area cultivated (maize + all other crops)	Number of farms (A)	% of farms (B)	Poverty Rate (%) (C)	% of farmers receiving FISP fertilizer (D)	kg of FISP fertilizer received per farm household (E)	% of Total FISP fertilizer by land size (F)	% of farmers expecting to sell maize (G)	Expected maize sales (kg/farm household) (H)
0-0.99 ha	596,334	39.6%	81%	14.3%	24.1	12%	22.2	135
1-1.99 ha	499,026	33.1%	81%	30.6%	69.3	30%	47.7	609
2-4.99 ha	354,116	23.5%	66%	45.1%	139.7	43%	64.0	1,729
5-9.99 ha	49,410	3.3%	38%	58.5%	309.7	13%	82.1	6,613
10-20 ha	6,999	0.5%	15%	52.6%	345.6	2%	86.8	15,144
Total	1,505,885	100%	76%	28.6%	77.1	100%	42.7	950

Source: MAL/CSO Crop Forecast Survey, 2010/11. Reproduced from Jayne et al. 2011.

5. AGRICULTURAL TRENDS AND INDICATORS

5.1. Trends in Agricultural Production

Productivity growth is critical to meeting the food needs of the Zambian population. Statistics for most crops show an upward trend over the last six years. These include production, area, and yield. Statistics for the six most widely grown crops in Zambia (maize, rice, groundnuts, seed cotton, mixed beans, cassava, and sweet potato) are presented in Tables 5, 6, 7, and 8.

- Table 5 shows that, in general and for all crops, there has been a slight increase in the proportion of the small and medium-scale farmers are cultivating the various crops. The percent of farmers cultivating cassava has remained about the same.
- The area cultivated under each crop also shows a slight upward trend (Table 6).
- National production figures for most crops have trended upward over the last six years, but remain erratic and highly susceptible to rain-fall variations (Table 7).
- Yields per hectare have improved slightly for most crops since 2006. However, much of this improvement is due to favorable weather conditions. Moreover, yields remain well below global averages (Table 8).

Table 5. Percent Households Planting Crop, Zambia, 2007 to 2012

	Agricultural year					
	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Maize	80.6	82.3	83.3	81.7	84.7	86.0
Rice	3.6	3.4	4.6	4.5	4.3	4.5
Groundnuts	38.2	37.2	43.8	48.6	43.4	39.2
Seed cotton	8.6	9.9	8.5	6.4	10.1	20.0
Mixed beans	11.9	12.7	15.6	15.3	12.6	15.7
Cassava	38.2	37.2	38.1	37.9	36.1	37.5
Sweet potatoes	10.9	12.1	17.8	17.6	11.5	12.7

Source: Crop Forecast Survey, MAL, and CSO 2000-2011.

Table 6. Area Cultivated (ha), Crop, Zambia 2000 to 2012

	Agricultural year					
	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Maize	1,039,045	1,176,221	1,077,950	1,182,217	1,311,295	1,253,664
Rice	23,743	29,671	31,032	35,841	33,988	30,304
Groundnuts	183,967	189,399	215,324	267,578	223,298	181,410
Seed cotton	106,528	148,244	102,784	84,724	131,691	316,175
Mixed beans	71,593	80,577	82,659	83,735	69,923	96,232
Cassava	364,271	389,953	392,933	403,217	386,608	389,250
Sweet potatoes	40,504	42,120	63,970	69,794	45,059	41,526

Source: Crop Forecast Survey, MAL and CSO 2000-2011.

Table 7. Production in Tons, Crop, Zambia 2007 to 2012

	Agricultural year					
	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Maize	1,419,545	1,392,180	1,657,117	2,463,523	2,786,896	2,731,843
Rice	23,582	30,243	41,929	51,656	49,404	43,326
Groundnuts	68,005	98,176	119,872	163,738	138,889	108,784
Seed cotton	64,110	91,588	86,277	72,068	121,392	268,902
Mixed beans	31,740	59,783	46,001	63,909	45,557	59,835
Cassava	1,706,894	986,848	1,244,298	1,248,561	1,097,697	1,227,352
Sweet potatoes	104,911	134,544	199,490	250,347	146,218	158,830

Source: Crop Forecast Survey, MAL and CSO 2000-2011.

Table 8. Total yield (kg/HH), Crop, Zambia 2007 to 2012

	Agricultural year					
	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Maize	1,326	1,292	1,556	2,070	2,133	2,163
Rice	900	1,163	1,474	1,676	1,614	1,604
Groundnuts	401	588	651	727	744	685
Seed cotton	631	784	931	976	1,071	961
Mixed beans	469	1,010	632	963	741	697
Cassava	4,428	2,268	2,800	2,776	2,391	2,792
Sweet potatoes	2,827	4,008	3,772	4,069	4,534	5,024

Source: Crop Forecast Survey, MAL and CSO, 2000-2011.

Zambia's small- and medium-scales farming households have in the past 5 years been recording surplus maize harvests, including consecutive record-breaking harvests, between 2009/10 and 2011/12 agricultural seasons. The aggregate maize production levels in 2011 were more than double the average level from 2006 to 2008. The expansion in maize production over the period corresponds with the scaling up of the Government's maize subsidy programs, combined with good rains during these seasons.

- Table 9 gives a national summary of the estimated number of smallholder agricultural households in Zambia, total and mean per household maize area planted, quantity harvested, and yield between 2000/01 and 2011/12 agricultural seasons. By the 2011/12 season, smallholder maize production levels were about double what the annual production during the 2005/06-2007/08 period. When expressed on a per farm household basis, mean maize production rose from 964 kg to 1,931 kg per farm, a 92% increase. Yet this has coincided with a significant expansion of area under maize cultivation. Moreover, yields remain extremely low, with national yields of only 2.1 tons per hectare in 2011/12. Maize yields in South Africa are about twice the Zambian rate.

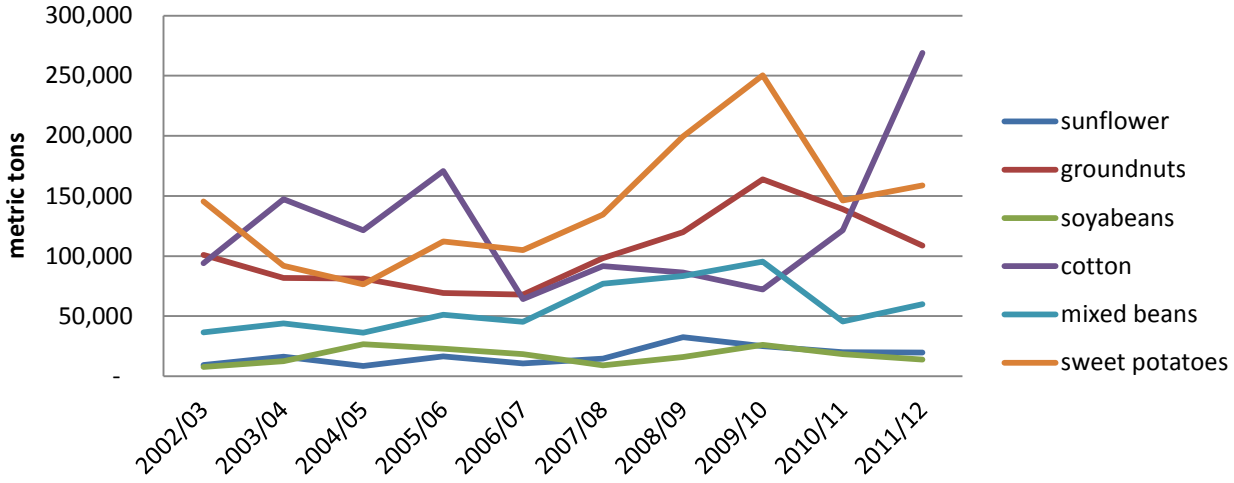
Table 9. Smallholder Agricultural Households and Maize Area Planted, Quantity Harvested, and Yields, 2000/01-2011/12

Agricultural year	Total # of agricultural Households (HH)	Maize area planted (ha)		Maize quantity harvested		National maize yield (kg/ha planted)
		Total	Mean HH	Total (MT)	Mean HH (kg)	
2000/01	1,127,109	748,314	0.66	957,437	849	1,279
2001/02	1,169,525	785,183	0.67	673,673	576	858
2002/03	1,212,079	745,670	0.62	970,317	801	1,301
2003/04	1,275,428	780,768	0.61	1,364,841	1,070	1,748
2004/05	1,326,631	801,976	0.60	652,414	492	814
2005/06	1,373,537	864,970	0.63	1,339,479	975	1,549
2006/07	1,439,086	1,039,350	0.72	1,419,545	986	1,367
2007/08	1,497,045	1,176,221	0.79	1,392,180	930	1,184
2008/09	1,459,694	1,078,192	0.74	1,657,674	1,136	1,537
2009/10	1,483,439	1,182,217	0.80	2,463,523	1,661	2,084
2010/11	1,505,885	1,311,295	0.87	2,786,896	1,851	2,125
2011/12	1,414,536	1,253,664	0.89	2,731,843	1,931	2,163

Source: Crop Forecast Survey, MAL and CSO, 2000-2011.

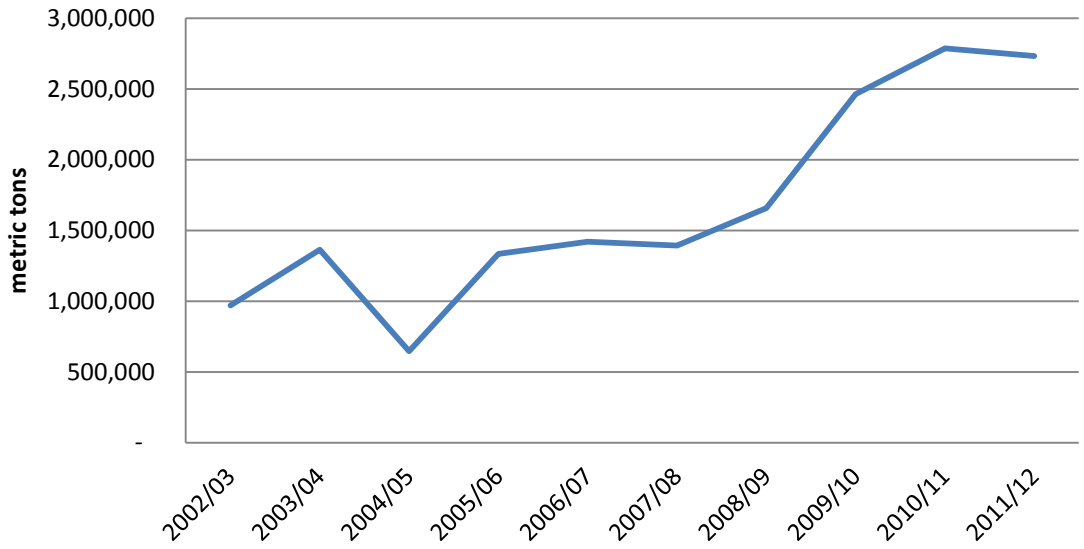
- Production trends for other crops increased from 2002/03 season to 2009/10, after which most crops, except cotton, show a decline (Figure 20). This indicates that some of the maize expansion was coming at the expense of other crops. Figure 21 is showing the increasing production trends for maize.

Figure 20. National Production Trends Small and Medium Scale Farming Households for Selected Crops



Source: Crop Forecast Survey, MAL and CSO 2000-2011.

Figure 21. National Production Trends for Maize



Source: Crop Forecast Survey, MAL and CSO 2000-2011.

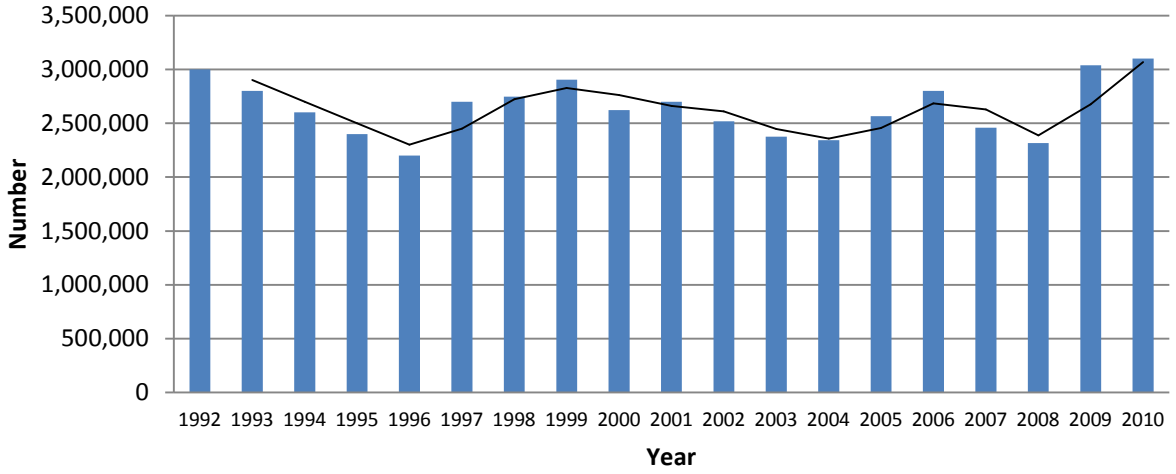
- Table 10 presents the average per household and per capita holding size. This excludes land rented-in or borrowed in. At national level, land holding size per capita and per household show only marginal increase from 2010 and 2011. This is also generally true in all provinces except Central where the land holding size has been decreasing.

Table 10. Holding Size (ha) per Household, Per capita, 2008/09-2011/12, Zambia

	20098/09		2009/10		2010/2011		2011/12	
Province	size / hhd	size /capita	size per hhd	size per capita	size per hhd	size per capita	size per hhd	size per capita
Central	3.9	.7	3.2	.6	3.5	.6	3.3	.6
Copperbelt	2.4	.4	2.1	.4	2.2	.4	3.5	.6
Eastern	2.2	.4	2.1	.4	2.4	.4	2.9	.6
Luapula	2.1	.4	2.4	.5	2.8	.5	3.2	.6
Lusaka	2.0	.3	1.4	.2	1.8	.3	1.6	.3
Northern	3.1	.6	3.9	.7	3.6	.7	4.3	.8
Northwestern	2.5	.4	1.9	.3	2.8	.5	2.8	.5
Southern	2.3	.4	2.6	.4	2.5	.5	3.8	.6
Western	2.1	.4	1.9	.3	2.3	.4	3.0	.5
Zambia	2.5	.4	2.4	.4	2.7	.5	3.2	.6

Source: Crop Forecast Survey, MAL and CSO 2008-2011.

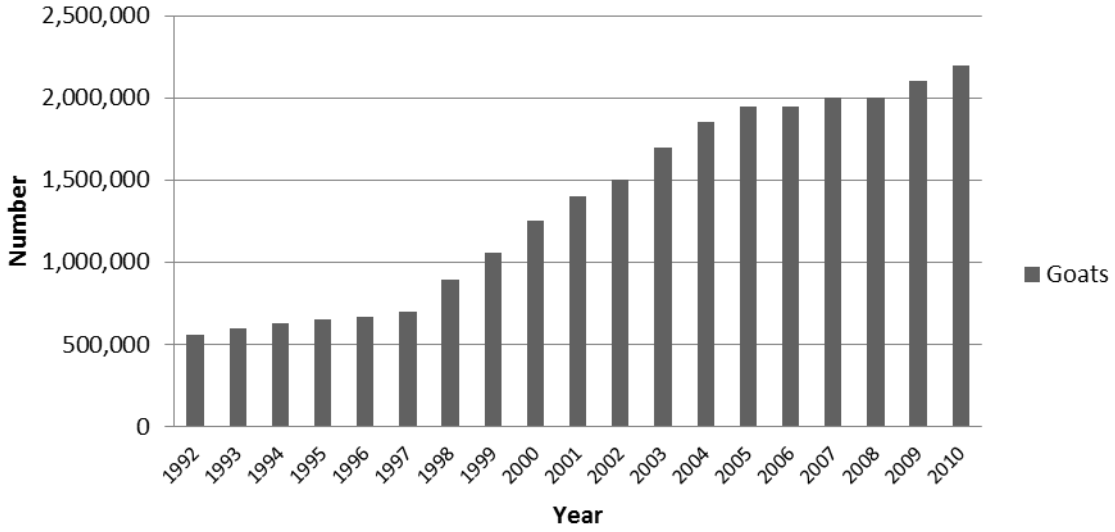
Figure 22. Number of Cattle, 1992-2010, Zambia



Source: FAOSTAT, FAO of the United Nations (UN), Accessed on March 12, 2013. http://faostat3.fao.org/home/index.html#VISUALIZE

- Figure 22 shows the estimated number of cattle in Zambia between 1992 and 2010. The number of cattle 2010 is about the same as it was in 1992, with numbers going down significantly in 1996, 2004 and 2008 due to major disease outbreaks in those years. Significant cattle loses represent a serious economic lose to rural households. Mitigating the effects of disease outbreaks of livestock mortality is therefore an important strategy for stabilizing rural assets.
- The number of goats has been increasing over the years. Zambia is estimated to have had just over 500,000 goats in 1992. The number has increased to 2,200,000 in 2010 (Figure 23).

Figure 23. Number of Goats, 1992-2010, Zambia



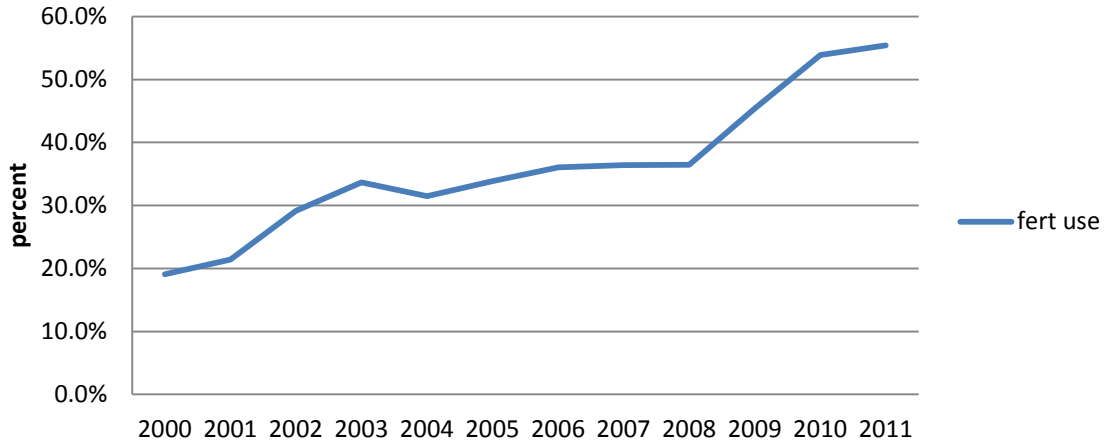
Source: FAOSTAT, FAO of the UN, Accessed on March 12, 2013. http://faostat3.fao.org/home/index.html#VISUALIZE

5.2. Input Use, Access and Farming Practices

One of the primary constraints to yield improvement is limited access to inputs among Zambian smallholders.

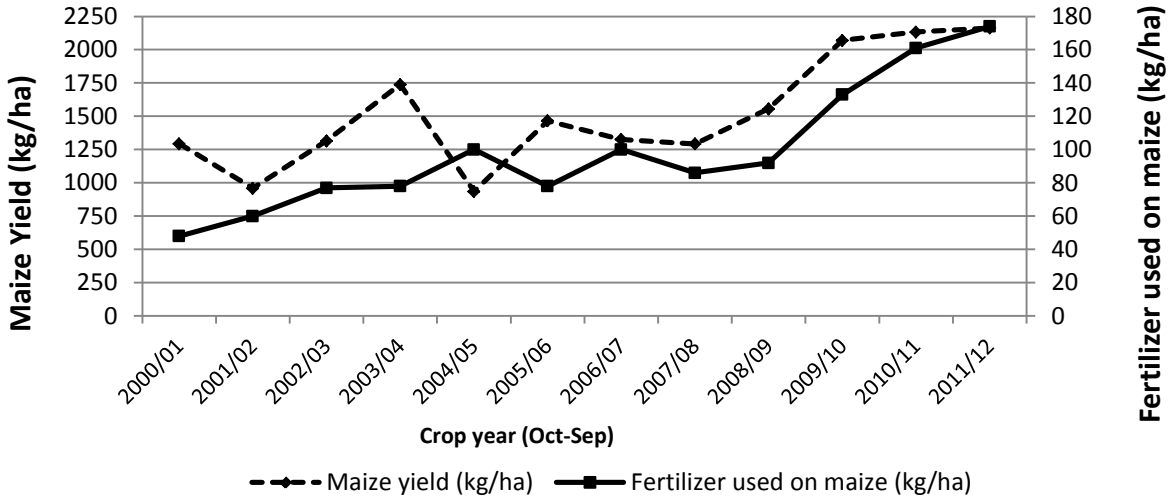
- While input use has trended upward since 2001, only about 55% of Zambia farmers use fertilizer on their fields, with the majority of fertilizer being applied to maize fields (Figure 24).
- Of the farmers using fertilizer, the yield response to fertilizer use is extremely low. In 2012, fertilizer users produced about 2.2 MT of maize per hectare (Figure 25). On average, farmers used just over 170 kg of fertilizer on a hectare of maize, below the recommended 200kg. High level of soil acidity, low soil organic matter, and late or improper fertilizer application methods likely all contribute to low returns to fertilizer. At current average return rates, the use of fertilizer at commercial prices is uneconomical for most smallholders.

Figure 24. Trends in % of Smallholders Using Fertilizer Nationwide



Source: Crop Forecast Survey, MAL and CSO 2000-2011.

Figure 25. Maize Yield and Fertilizer Used on Maize



Source: Crop Forecast Survey, MAL and CSO 2000-2011.

Table 11. Percent Households by Crop Grown, Seed Type, Zambia, 2012

	Local seed	Recycled hybrid	First generation (F1) hybrid	Open pollinated varieties (OPV)	Improved seed	Not stated	households growing
Maize	45.0	3.5	54.8	0.1	0.0	0.0	1,188,504
Sunflower	59.6	9.7	28.9	1.3	0.0	0.5	101,181
Groundnuts	78.4	3.5	17.9	0.2	0.0	0.0	660,962
Soyabeans	76.9	9.7	12.9	0.3	0.0	0.3	58,540
Seed cotton	0.0	0.0	97.1	0.0	0.0	2.9	184,286
Virginia tobacco	0.0	0.0	80.5	0.0	0.0	19.5	4,211
Burley tobacco	0.0	0.0	90.3	0.0	0.0	9.7	11,906
Sweet potato-white/yellow	99.1	0.0	0.0	0.0	0.0	0.9	249,995
Sweet potato-orange	100.0	0.0	0.0	0.0	0.0	0.0	4,959
Other crop	95.3	1.5	1.9	0.0	1.9	1.3	454,662
Cassava	70.6	0.0	0.0	0.0	30.5	0.2	514,470

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

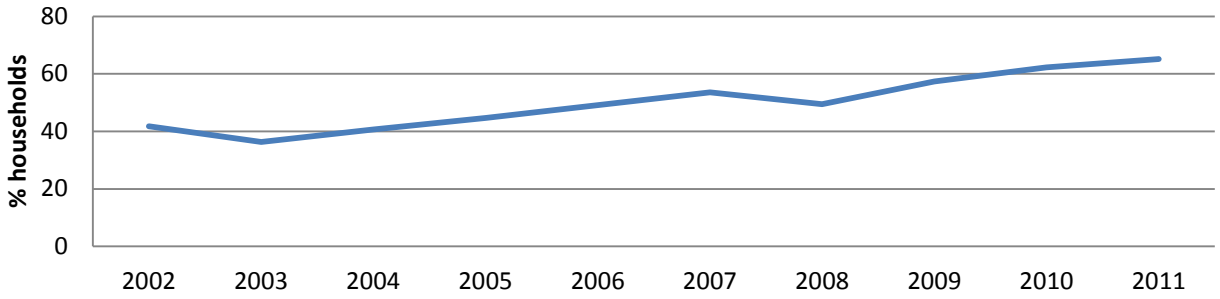
- Table 11 shows that in 2012, about 55% of the small and medium-scale farming households planted first generation hybrid maize seed while 45% planted local varieties or recycled seeds. Households growing tobacco and cotton, which are commercial cash crops grown under outgrower conditions, almost entirely grew first generation hybrid seed. Households growing the rest of the crops almost completely use local seed.
- There is an increasing trend among households growing maize to use first generation hybrid seed (Table 12 and Figure 26). According to Crop Forecast Surveys, the percentage of households using first generation maize seed has increased from 42% in 2001 to 65% in 2011. This is the result of both public investment in FISP, but more importantly the development of a competitive local seed industry in Zambia.

Table 12. Percent Area under Maize by Seed Type and Year, 2002-2011, Zambia

year	local seed	recycled hybrid seed	first generation hybrid seed	open pollinated seed
2002	49.0	9.2	41.8	.0
2003	55.1	8.7	36.3	.0
2004	56.0	3.1	40.7	.2
2005	49.9	4.7	44.7	.7
2006	44.7	5.8	49.1	.4
2007	42.7	3.1	53.6	.6
2008	44.4	5.6	49.5	.5
2009	36.6	5.7	57.3	.4
2010	33.9	3.6	62.3	.2
2011	30.2	4.3	65.1	.3

Source: Crop Forecast Survey, MAL and CSO 2002-2011.

Figure 26. Trends in First Generation Hybrid Maize Seed Use, % of Smallholder Households



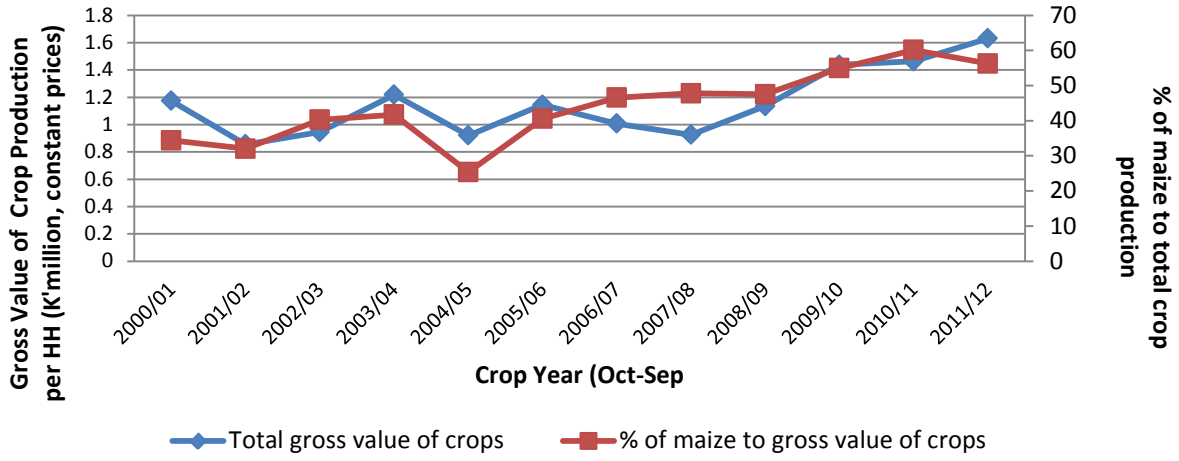
Source: Crop Forecast Survey, MAL and CSO, 2002-2011.

5.3. Value of Production, Sales and Trade Trends

Raising agricultural production and productivity remains crucial for economic growth. In countries such as Zambia where the poor are concentrated in rural areas, it will also contribute significantly to poverty reduction. However, in Zambia the value of agricultural production remains very low.

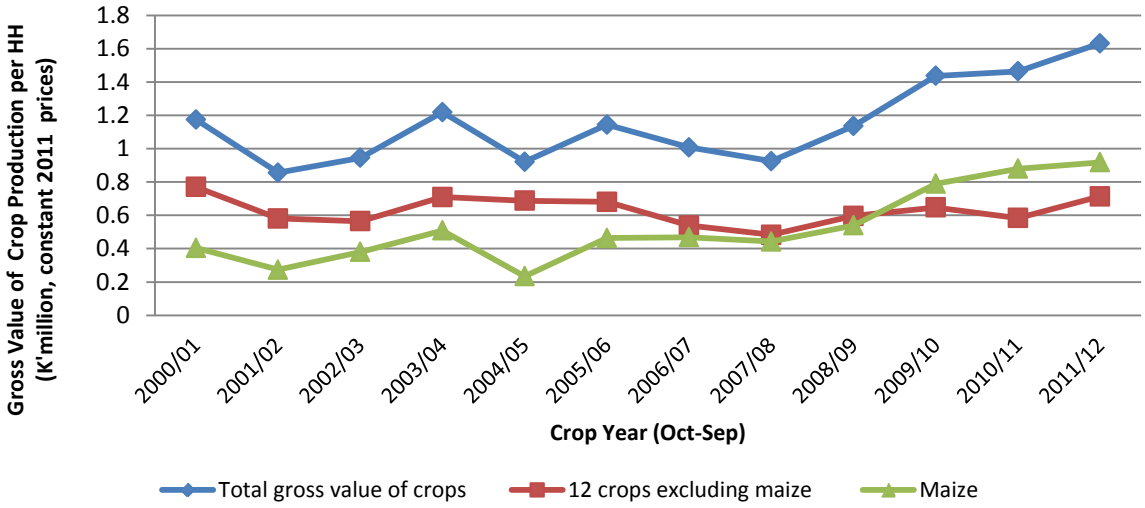
- As shown in Figure 27, the gross value of smallholder crop production has trended upward since 2007/08. There are a number of factors underpinning this growth, the most important of which has been the favorable weather pattern that has predominated over that time. The growth in crop revenue has coincided with an increase in the percent of maize's contribution to the gross value of crop production. Since 2004/05, the percent of maize to the total gross value of crop production has increased from 25% to 56% in 2011/12. This is a result of increased government support for maize production and output markets. The worrying implication of this trend is the loss of household level and national level crop diversification that it implies.

Figure 27. Total Gross Value (Constant 2011 ZMK) of Crops and Share of Maize to Total Gross Value of Crops per Agricultural HH, 2000/01-2011/12



Source: Crop Forecast Survey, MAL and CSO 2000-2011.

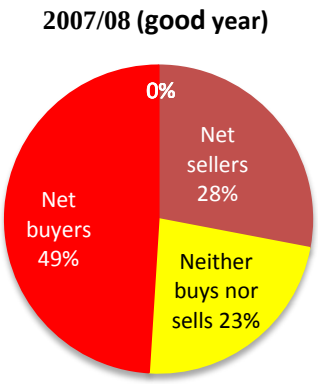
Figure 28. Mean Gross Value (Constant 2011 ZMK) of Expected Production per Small/medium-scale Agricultural Household, 2000/01-2011/12



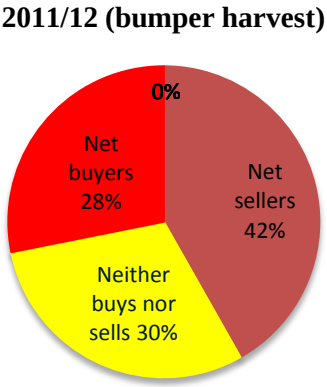
Source: Crop Forecast Survey, MAL and CSO 2000-2011.

- Figure 28 presents the mean gross value (constant 2011 ZMK) of expected production per small/medium-scale agricultural household at constant 2011 prices. The mean value for all crops is less than 2 Million Kwacha. The value for maize is higher than that for all the other crops, due in part to output subsides and the large share of total farm area dedicated to maize. There has been an increasing trend in the value since 2007/08.
- In terms of market participation, a considerable proportion of the small- and medium-scale agricultural households are net buyers, another proportion are neither sell nor buy. As a result, most small- and medium-scale farmers have not able to take advantage of the FRA high maize prices. In a typical good farming season such as 2007/08, 49% of the small and medium scale households were net buyers, 28% were net sellers and 23% were neither sellers nor buyers. In a record harvest year, 2011/12, 28% were net buyers (Figure 29). Within the net seller category, surplus production is highly concentrated, with 50% of the surplus being produced by 3-5% of the smallholder population, depending on the year.

Figure 29. Market Participation, Smallholder Households, 2007, 2012



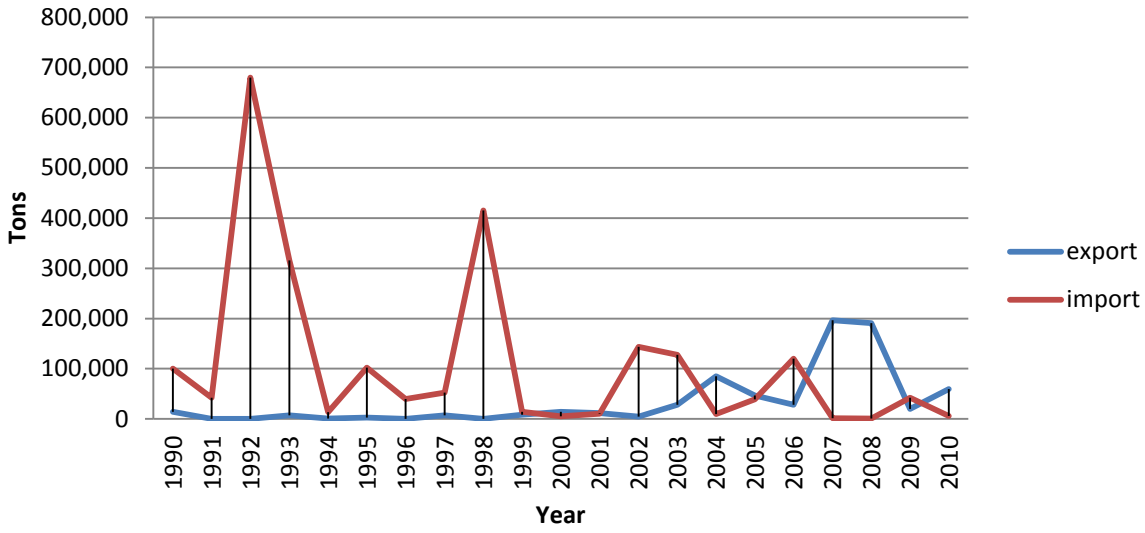
Source: 2008 CSO/MAL/FSRP Supplemental Survey.



Source: 2012 CSO/MAL/IAPRI RALS12.

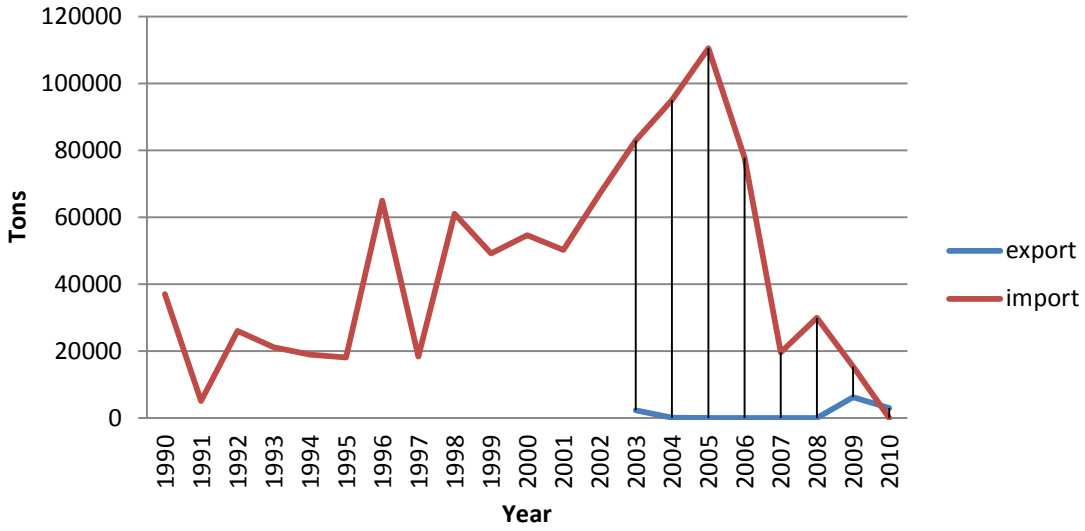
- Zambia's policy on export of grain has at best been unpredictable, characterized by implicit and explicit bans on exports. Data show that the country has only ever exported significant amounts of maize in 2007 and 2008, when quantities of nearly 200,000 MT are reported (Figure 30). Imports of maize have been very low since 2000. Zambia is self sufficient in wheat requirements. Since 2005, imports have been decreasing to nearly zero in 2010 (Figure 31).

Figure 30. Maize Import and Export, in Tons, Zambia, 1990-2010



Source: FAOSTAT, FAO of the UN, Accessed on March 12, 2013. http://faostat3.fao.org/home/index.html#VISUALIZE

Figure 31. Wheat Import and Export in Tons, Zambia, 1990-2010



Source: FAOSTAT, FAO of the UN, Accessed on March 12, 2013. http://faostat3.fao.org/home/index.html#VISUALIZE

5.4. Crop Diversity

The importance of crop diversification cannot be emphasized enough. Dependence on rain fed agriculture is the main cause of the variation in food production. This is amplified by the reliance on maize as the main staple food in a drought prone southern part of the country. Crop diversification comes with it diversified income and nutritional sources as wells reduced risk in the case of crop failure and poor market conditions.

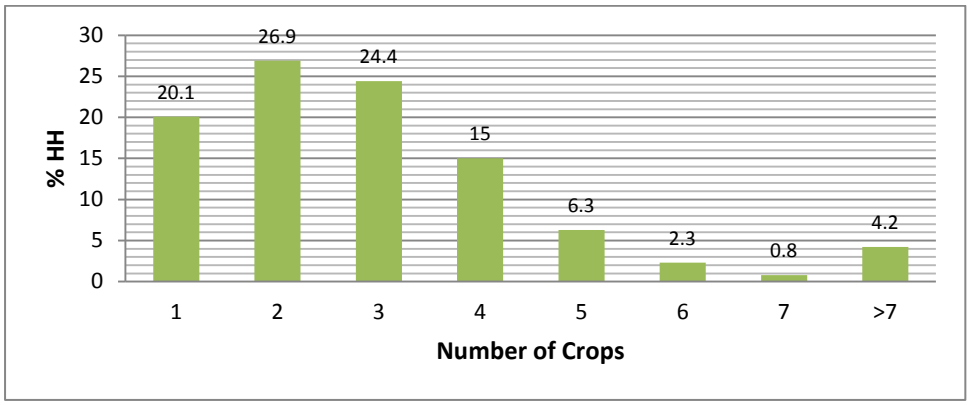
- The Simpson Diversity Index provides a means for measuring household-level crop diversification. It takes into account the proportionate of a household's total area that is dedicated to each crop ranging. It can therefore range from between zero and one. As a household becomes more diversified the index moves towards one. Table 13 shows trends in Simpson Index figures over time by province. It shows that over all crop diversifications remains low throughout the country, with limited variability from 2004 to 2012.
- Most of small- and medium-scale households cultivate one to four crops. The highest proportion cultivates two crops. About 27% of households cultivated two crops only 4% cultivated over seven crops (Figure 32).

Table 13. The Simpsons Index by Province Zambia, 2004 -2012

	Year		
	2004	2008	2012
Central	.44	.33	.38
Copperbelt	.38	.26	.27
Eastern	.46	.44	.45
Luapula	.31	.30	.39
Lusaka	.21	.14	.21
Muchinga	-	-	.52
Northern	.55	.46	.52
NorthWestern	.43	.30	.38
Southern	.30	.27	.30
Western	.40	.30	.38
Zambia	.42	.35	.40

Source: 2012 CSO/MAL/IAPRI RALS12 and 2008 CSO/MAL/FSRP Supplemental Survey

Figure 32. Percent Households by Number of Crops Grown Zambia, 2011



Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 14. Simpson's Crop Diversification Index by Province, Zambia, 2012

	Specialized → Diversified			
	Mean	Percentile 25	Median	Percentile 75
Central	0.41	0.2	0.48	0.61
Copperbelt	0.3	0	0.32	0.5
Eastern	0.47	0.38	0.5	0.63
Luapula	0.43	0.29	0.5	0.62
Lusaka	0.21	0	0.09	0.44
Muchinga	0.54	0.44	0.62	0.7
Northern	0.54	0.46	0.62	0.7
NorthWestern	0.4	0.23	0.46	0.58
Southern	0.31	0.09	0.33	0.5
Western	0.42	0.32	0.49	0.59
Total	0.42	0.24	0.49	0.63

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

- The least diversified provinces are Lusaka and Copperbelt provinces. The most diversified are Muchinga and Northern provinces. Both have an index of 0.54 (Table 14).

5.5. Gross Margins

Gross margins are a simple tool used to describe the returns to different crops, and are calculated as the difference between sales revenue and variable production costs. For these calculations, variable costs included fertilizer and seed costs, for which data were available.

Gross margins are expressed as returns to a unit of land. In this case the gross margins are returns in US$ per hectare ($/ha). The exchange rate of 5020.32 ZMK to 1 US$ was used to convert the values into US$. They provide a useful way of assessing the relative attractiveness of different crops to farmers.

- Table 15 presents estimates of the mean gross margins for the major crops grown in Zambia. Gross margins are low in general with maize averaging $457/ha at national level. The tobacco crops give the highest returns on a hectare of land planted, followed by cotton, mixed beans and maize. Sunflower provides the lowest returns. Farmers in Muchinga Province had the highest return on maize ($538/ha) and burley tobacco ($1,887/ha), on average. Farmers in Western Province, had on average the lowest returns on maize ($276/ha). These low margins are due primarily to low yields, but are also the result of high input costs, transport costs, and market prices.

Table 15. Mean Gross Margins ($/ha) by Crop by Province, Zambia, 2012

	Crop									
	Maize	Sunflower	Groundnuts	Soyabeans	Seed Cotton	Virginia Tobacco	Burley Tobacco	Mixed Beans	Sweet Potato - white or yellow-fleshed	Sweet Potato - orange fleshed
Central	442.4	103.9	259.5	393.2	306.7	1354.4	1234.4	620.9	375.4	219.1
Copperbelt	405.0	159.3	514.0	479.51	84.6	.	.	481.75	577.5	.
Eastern	509.2	243.4	299.3	371.3	640.2	1,307.4	674.6	1,123	194.9	78.28
Luapula	439.0	822.6	436.4	464.9	.	.	.	113.2	322.1	190.1
Lusaka	485.1	182.9	494.5	561.5	814.9	.	.	2,073	361.0	806.9
Muchinga	538.1	196.3	419.7	421.8	.	.	1,887	626.4	222.3	165.7
Northern	446.9	117.9	460.0	311.0	.	.	.	370.5	194.6	27.6
NorthWestern	503.5	125.2	434.8	493.2	.	.	204.1	.	376.3	.
Southern	414.8	214.9	228.7	191.3	1,443	980.8	120.8	.	329.9	80.9
Western	276.5	.	329.2	185.2	.	1,159.2	.	.	401.7	.
Zambia	457.6	226.5	371.4	384.6	687.7	1,229.0	749.6	465.8	356.6	231.24

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

6. EASTERN PROVINCE

Eastern Province, Zambia is one of the most important smallholder agricultural regions of the country. Given its large rural population, improving the conditions of agricultural production in Eastern Province has the potential to have a measurable effect on national level incidences of malnutrition and poverty, while simultaneously contributing the overall agricultural growth rates. It is for these reasons that the Eastern Province was selected in the Zambia Feed the Future strategy to be the focal province for its agricultural development funding under the global Feed the Future (FtF) initiative.

Because of its importance, particularly for the FtF, this Technical Compendium will devote a separate section to Eastern Province, with particular emphasis on the five districts that comprise the FtF zone of influence (ZOI): Chipata, Katete, Patauke, Lundazi, and Nyimba, though data will also be provided for the remaining two districts of Mambwe and Chadiza.

In this section, much of the data will be disaggregated by gendered household type, (GHT). This is a disaggregation utilized in all FtF countries seeking to move beyond the simple dichotomy of male and female headed households, by categorizing households in terms of whether or not there are male and female adults (defined as over 18 years old) present, only male adults, only female adults, or child-headed. Thus, for example, while a household with a widowed woman living with her 18 year old son would be categorized as female headed under the standard household typology, it would be categorized as a male and female adult household type under this typology.

6.1. Population

Using 2010 census data, Table 16 presents the population breakdown for Eastern Province. According to the latest census figures, the population of Eastern Province is 1,523,123, of which 87% live in rural areas. Outside the urban areas and along the line of rail, Eastern Province is the most densely populated region in Zambia.

- Chipata has the largest population in Eastern Province. It is also the most urbanized, with roughly 25% of Chipata district residents living in the urban areas. Mambwe district has the smallest population, mostly due to the area occupied by the South Luangwa Park.

Table 16. Population by Province, District and Sex, Rural/Urban, Eastern Province, 2010

Province/District	Total	Male %	Female %	Rural %	Urban %
Eastern Province	1,525,123	48.8	51.2	87.4	12.6
Chadiza	102,341	49.2	50.8	97.4	2.6
Chipata	436,894	49.0	51.0	74.3	25.7
Katete	234,585	48.8	51.2	91.3	8.7
Lundazi	308,420	48.4	51.6	95.1	4.9
Mambwe	64,672	48.9	51.1	91.3	8.7
Nyimba	81,025	48.9	51.1	91.2	8.8
Petauke	297,186	48.8	51.2	90.4	9.6

Source: 2010 Census of Population, CSO 2013.

Table 17 Percent Households, by Gendered Household Type, and Sex of Head Eastern Province, 2012

		%
By gendered-household type:	Male and female adults	81.2
	Female adult(s) only	15.5
	Male adult(s) only	3.2
	Child-headed	0.1
Sex of head	Male headed	77.8
	Female headed	22.2
Poverty Status	Non poor	20.0
	poor	80.0
	Eastern Province	100.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

- Table 17 presents household population breakdowns based on the USAID/FtF gendered household type typology and the standard male and female-headed household typology. This shows that 81.2% of rural households are categorized the gendered type, male and female adults, while about 78% of all households are male headed. This suggests that a number of households categorized as female headed in the standard typology actually contain adult male residents, Including older sons, uncles, and other relatives.

6.2. Poverty and Nutrition Data

Poverty in Eastern Province remains very high. Poverty levels in the province are higher than the national average, as are stunting rates among 3-59 months old children.

Farming is the primary source of income in the Province. With the high levels of poverty, farming income has failed to guarantee sufficient livelihood for most farming households in the Province. Among the small and medium-scale farming households, non-farm gross income shares are below 30% of the total gross incomes. Households in Mambwe District, have on average, the highest share of non-farm income to total household income. They also have the lowest poverty rate. This is likely due to employment opportunities provided by the tourism sector in South Luangwa Park.

- Farm income constitutes the largest component of small and mediums scale farming households' income. On average, the gross value of crops harvested represents 63.4% of the household's total gross income (Table 18). The combined total contribution of farm income to the total gross income is 78%, on average, in the province. Households in Mambwe District have the highest share of non-farm income (45%), driven primarily
- Within the FTF Zone districts, poor households derive a greater share of their total gross income from crops harvested (49.3 vs. 67.5%). The female adults gendered household types have the lowest share of non-farm income, on average. The share of non-farm income among the female headed households, similarly, is lower than that for the male headed households on average (Table 19). This suggests that non-farm income sources are more available to men than women.

Table 18. Percent Contribution to Total Gross Income, Eastern Province, 2012

	crops harvested	vegetable-fruit production	Livestock sale (ZMK))	Livestock home consumption (ZMK)	livestock products (ZMK)	Off-farm income (ZMK)
Chadiza	69.7	10.8	3.4	1.3	1.1	13.7
Chipata	54.5	10.4	2.5	1.0	1.9	29.7
Katete	65.5	5.9	4.2	1.3	.8	22.3
Lundazi	63.2	15.2	1.9	.3	.8	18.5
Mambwe	44.8	6.7	2.0	.9	.6	45.1
Nyimba	81.2	3.1	1.0	1.6	.8	12.3
Petauke	69.7	8.8	2.7	1.1	.5	17.1
Total	63.4	9.9	2.6	1.0	1.1	22.1

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 19. Percent Contribution to Total Gross Income by GHT, Poverty Sex of Head, FTF Zone, 2011

		crops harvested	vegetable-fruit production	Livestock sale (ZMK)	Livestock home consumption (ZMK)	livestock products (ZMK)	Off-farm income (ZMK)
Gendered household type	Male and female adults	63.2	10.5	2.5	.8	1.1	21.9
	Female adult(s) only	67.5	8.0	3.2	1.4	1.2	18.7
	Male adult(s) only	61.4	8.0	1.7	.7	.3	27.8
	Child-headed	49.3	1.4	.0	12.4	.2	36.6
Poverty	Not Poor	49.3	8.3	1.8	.6	1.6	38.6
	Poor	67.5	10.4	2.8	1.0	1.0	17.3
sex of head	Male headed	62.8	10.6	2.4	.7	1.1	22.5
	Female headed	67.5	7.7	3.4	1.9	1.1	18.3

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey

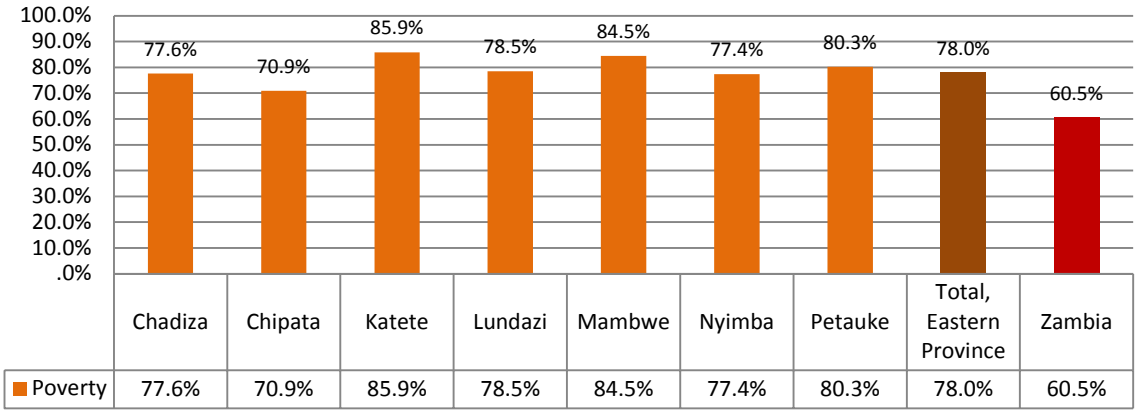
- By disaggregating per capita income into percentile groups and means several important observations emerge. First, per capita income among smallholder households in the FtF zone of influence, at the mean and median, are substantially lower than the national average across all household types (aside from child headed for which few observations are available). Second, at the mean and median, female only households are poorer than those comprised of male and female adults and male adults only households. Finally, the mean per capita income for most household types is similar to, or higher, than income at the 75^{th} percentile. This suggests that means are being substantially skewed by a small number of relatively wealthy households (Table 20).
- The statistics from the Central Statistical Office indicate that 78% of all persons in the province are poor (Figure 33). This is higher than the national rate of 60.5%. Among the districts, Katete has the highest rate where over 85% are poor.

Table 20. Average Per capita Income among Smallholder Households – overall and by GHT for Zambia and the FTF ZI, 2011/12

	Zambia (US$)				FTF ZI (US$)			
	Mean	25th percentile	Median	75th percentile	Mean	25th percentile	Median	75th percentile
By gendered-household type:								
Male and female adults	1,182.05	126.76	238.98	455.10	389.81	127.97	229.54	394.82
Female adult(s) only	413.83	90.69	174.97	362.79	321.10	87.86	151.14	277.27
Male adult(s) only	1,003.07	141.43	448.86	1,135.88	710.18	162.08	332.48	665.36
Child-headed	387.57	196.45	196.45	271.91	271.91	271.91	271.91	271.91
All households	1,041.35	120.04	230.87	448.67	389.45	119.70	217.56	387.64

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Figure 33. Incidence of Poverty (Head Count) by District, Eastern Province, 2010



Source: 2010 LCMS, CSO, 2010 – Graph produced by IAPRI.

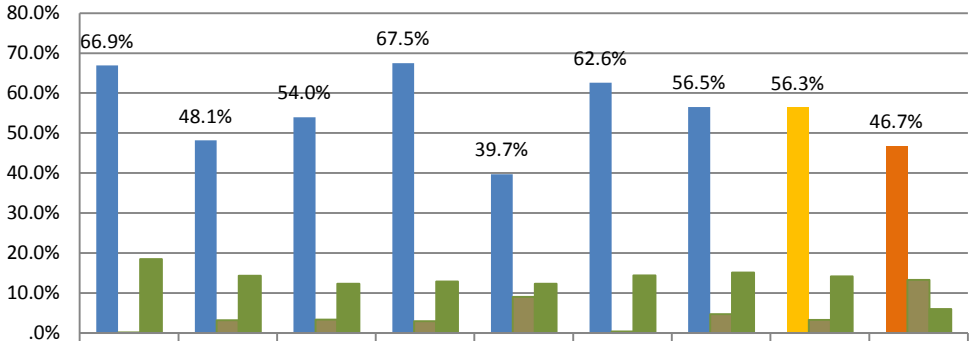
- Table 21 presents the weighted number and percent of rural smallholder households living in poverty, as measured by living on less the US$1.25 per day, by gendered household type. It shows that households comprised of adult females only, and their dependents, have a higher incidence of poverty than those with other household compositions. This table also presents the percent and total population of smallholder households living in poverty, in terms of US$1.25, by district. This disaggregation shows that the highest incidences of poverty are in Nyimba District, where 91.7% of smallholder households live on less than per capita US$1.25.
- Figure 34 presents the incidence of stunting, wasting, and underweight for the seven districts in Eastern Province based on the 2010 Living Conditions Monitoring Survey. Overall, the incidence of stunting and underweight is higher in Eastern Province than the national average, though wasting level are lower. This suggests that a large percentage of children in Eastern suffer from prolonged periods of inadequate access to sufficient calories and to macro and micro nutrient. All districts, except Mambwe District, have higher (worse) child stunting rates than the national rate of 46.7%. Chadiza and Lundazi had the highest rates of about 67%.

Table 21. Prevalence of Poverty: Percent of Smallholder Households Living on Per capita Income of Less than $1.25/day, Eastern Province, 2012

		Percent poor
By gendered-household type:	Male & female adults	79.8
	Female adult(s) only	85.4
	Male adult(s) only	60.5
	Child-headed	100.0
District	Chadiza	87.8
	Chipata	75.6
	Katete	79.4
	Lundazi	76.9
	Mambwe	73.1
	Nyimba	91.7
	Petauke	85.1
	Eastern Province	80.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.
Note: * Poverty rate defined as the proportion of households living below US$1.25/day/capita (using 2005 PPP exchange rate).

Figure 34. Incidence of Stunting, Underweight and Wasting of Children (3-59 Months) by District, Eastern Province, 2010



	chadiza	Chipata	Katete	Lundazi	Mambwe	Nyimba	Petauke	Eastern Province	Zambia
stunted	66.9%	48.1%	54.0%	67.5%	39.7%	62.6%	56.5%	56.3%	46.7%
wasting	.1%	3.2%	3.3%	3.0%	9.0%	.4%	4.7%	3.3%	13.3%
underweight	18.5%	14.3%	12.3%	12.9%	12.3%	14.4%	15.1%	14.1%	6.0%

Source: 2010 LCMS, CSO 2010 – Graph produced by IAPRI.

6.3. Cropping and Production Data

With nearly 90% of the population living in the rural areas, the role of agriculture for poverty reduction is critical. Eastern Province has above national average poverty levels and above national average stunting rates. This is despite the fact that nearly 23% of the maize produced in the country during the 2010/11 season was produced by small and medium scale households from the province.

- Most of reported agricultural land is cultivated followed by land left fallow. The trend is the same at national, provincial, and FTF Zone (Table 22).

Table 22. Land Use by Type, Zambia, Eastern Province, FTF Zone, 2011

	Zambia	Eastern Province	FtF Zone
own cultivated field	73.7	74.6	75.4
garden	5.5	7.2	6.4
fallow natural/improved	10.4	6.0	5.8
virgin land	6.1	7.4	7.4
other specified	4.3	4.7	4.9
Total fields	100.0	100.0	100.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

- Table 23 shows that female only adults have the lowest access to land, on average. Looking at the FtF zone, households have access to 2.56 ha.
- Production levels, at household level of the different crops are generally low. A household in the FtF Zone harvested, on average, 2.42 tons of maize, and less than one ton of each of the other crops listed in Table 24.

Table 23. Average Land Access and Use (ha) by Type, Gendered HH Type and Poverty, FTF Zone, 2011

	Land holding size (all land accessed)	Total land holding size (less rented in, borrowed in)	Landholding size (all cultivated land plus fallow)	own cultivated field (ha)	Land cultivated
Male and female adults	2.71	2.62	2.17	1.99	1.99
Female adult(s) only	1.79	1.71	1.44	1.34	1.36
Male adult(s) only	2.54	2.41	2.04	1.76	1.76
Child-headed	2.19	2.06	1.19	1.06	1.19
Non Poor	3.95	3.74	3.20	2.97	2.96
Poor	2.21	2.15	1.76	1.62	1.61
Total	2.56	2.47	2.05	1.89	1.89

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey

Table 24. Average Production (MT) per Household by Crop, GHT, Poverty, FTF Zone, 2012

	Maize	Sunflower	Groundnuts	Soya beans	Seed Cotton	Sweet potato; white/yellow	Sweet Potato - orange
Male and female adults	2.6	0.21	0.18	0.34	0.83	0.39	0.29
Female adult(s) only	1.45	0.16	0.14	0.32	0.6	0.45	.
Male adult(s) only	2.54	0.3	0.16	0.35	0.77	0.31	0.78
Child-headed	1.03	.	0.05	.	.	.	.
Non poor	5.54	.30	.28	.57	1.27	.47	.54
Poor	1.62	.17	.15	.23	.67	.37	.22
All households	2.42	0.2	0.18	0.34	0.81	0.39	0.3

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

- The low production is partly due to small area cultivated. On average, a household in the FtF Zone cultivated 1.06 ha of maize in 2010/2011 agricultural season. The Female only adults cultivated less land than the other GHT households, for all crops (Table 25).
- As shown in Table 26 households, in the FTF Zone with female adults produce on average a lower yield of all crops, aside from a minor difference in groundnuts, than male and female households.
- Table 27 shows smallholder maize production trends in Eastern Province between 2000/01 and 2011/12. During that time period total area cropped with maize grew by over 100,000 hectares. At the same time maize yields have increased, from 1.3 MT/ha to 2.0 MT/ha. In total maize production has grown from roughly 200,000 MT to over 550,000 MT.

Table 25. Average Area Cultivated (ha) per Household by Crop, GHT, Poverty, FTF Zone, 2012

	Maize	Sunflower	Groundnuts	Soya beans	Seed cotton	Sweet potato; white/yellow	Sweet potato - Orange
Male & female adults	1.11	0.38	0.41	0.44	0.90	0.22	0.17
Female adult(s) only	0.81	0.35	0.35	0.38	0.72	0.29	.
Male adult(s) only	1.15	0.61	0.36	0.60	1.08	0.23	0.20
Child-headed	1.00	.	0.13	.	.	.	.
Non poor	1.73	0.50	0.45	0.67	1.18	0.23	0.21
Poor	0.89	0.34	0.38	0.33	0.80	0.22	0.16
All households	1.06	0.38	0.40	0.44	0.89	0.23	0.17

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 26. Average Yield (MT/ha) by Crop, GHT, Poverty, FTF Zone, 2012

		Maize	Rice	Sun-flower	Ground-nuts	Soy-beans	Seed cotton	Sweet potato - white or yellow	Sweet potato - orange
Gendered household type	Male & female adults	2.40	2.06	.64	.49	.90	1.08	2.07	1.88
	Female adult(s) only	1.93	.99	.41	.45	.79	.94	3.93	.
	Male adult(s) only	1.99	3.03	.56	.44	.74	.90	1.43	3.87
	Child-headed	1.04	.	.	.38	.	.	.	.
Poverty Status*	Not poor	3.18	2.49	.73	.64	1.08	1.37	3.23	2.91
	Poor	2.09	1.92	.57	.44	.80	.98	1.82	1.57
		2.31	2.04	.61	.48	.89	1.06	2.18	1.91

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.
* Per capita income below the $1.25/day poverty line (=1; 2005 PPP exchange rate).

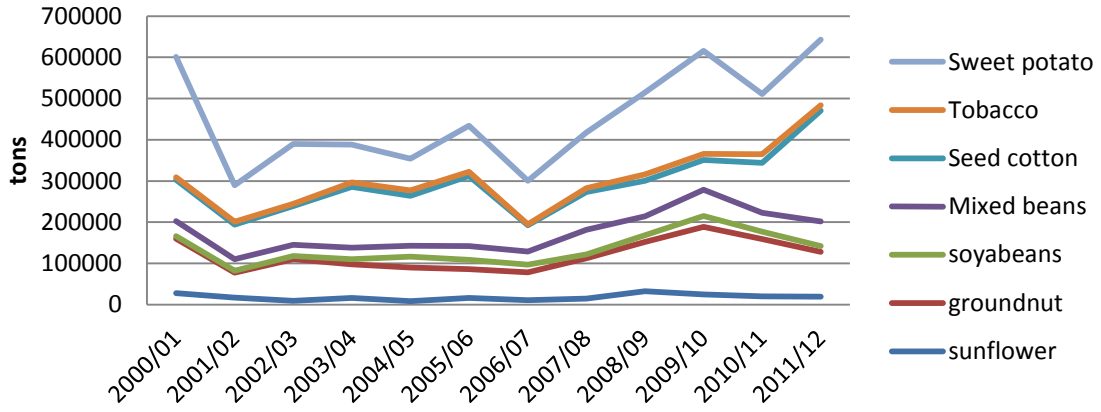
Table 27. Agricultural Households and Maize Area Planted, Quantity Harvested, and Yields, Eastern Province, 2000/01-2011/12

Agricultural year	Total # of agricultural HHs	Maize area planted (ha)		Maize quantity harvested		Provincial maize yield (kg/ha planted)
		Total	Mean HH	Total (MT)	Mean HH (MT)	
2000/01	179,862	162,392	0.90	197,578	1.10	1,316
2001/02	185,924	153,757	0.83	174,720	0.94	1,122
2002/03	190,162	158,001	0.83	201,101	1.06	1,261
2003/04	198,738	147,107	0.74	215,579	1.08	1,506
2004/05	206,719	153,997	0.74	131,966	0.64	929
2005/06	214,137	164,542	0.77	234,432	1.09	1,403
2006/07	227,460	179,355	0.79	195,327	0.86	1,082
2007/08	235,267	192,953	0.82	270,777	1.15	1,327
2008/09	230,681	219,083	0.95	312,019	1.35	1,385
2009/10	225,512	216,975	0.96	413,225	1.83	1,921
2010/11	226,113	229,547	1.02	433,547	1.92	1,846
2011/12	265,755	276,444	1.04	569,407	2.14	2,002

Source: Crop Forecast Survey, MAL and CSO 2000-2011.

- Figure 35 presents production trends for other key crops in the province. Production growth has been particularly pronounced for commercial cash crops grown under out-grower systems, such as cotton and tobacco. Sweet potatoes have also shown steady growth over the same time period. Between 2009/10 and 2011/12 production of mixed beans, groundnuts, soybeans and sunflower show decline. This decline coincides with a ramping up of government spending on maize subsidies. This suggests that some of the maize expansion was coming at the expense of other crops.
- Looking at the FTF Zone, we see that 15% of the fields in households with both male and female adults are controlled by women. This figure is slightly different from the standard definition of headedness, where roughly 8% of fields in male headed households are controlled by women. Overall all, over 70% of the fields are controlled by men (Table 28).

Figure 35. Production Trends of Selected Major Crops, Eastern Province, 2000/01 - 2011/12



Source: Crop Forecast Survey, MAL and CSO, 2000-2011.

Table 28. Land Use by Sex of Decision Maker, GHT, FTF Zone, 2011

		sex of who decided use of field		
		Male	Female	Male and Female
Gendered household type	Male and female adults	81.9	14.9	3.2
	Female adult(s) only	1.5	98.5	0.0
	Male adult(s) only	91.5	0.5	8.1
sex of head	Male	88.0	8.3	3.6
	Female	3.2	96.8	0.0
Poverty status	Non poor	75.8	19.4	4.8
	Poor	69.4	28.2	2.4
	FtF Zone	70.8	26.4	2.9

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Tables 29 to 33 present results from the RALS regarding intra-household decision making by sex within Male and Female Gender Household Type.

- Table 29 shows an important finding that the women in the FtF zone appear to exercise less decision making autonomy over field use in different types of fields in male/female adult HHs.
- A similar pattern emerges when looking at sale of crops. However, within a HH with both male and female adults, women exercise relatively more decision making control over the sale of groundnuts, and soyabeans. In 26% of the cases, women decided whether or not to sell soyabeans as well as groundnuts in the FtF Zone. The women have greater control than the men over the sale of orange fleshed sweet potatoes (Table 30).

Table 29. Intra-household Decision Making by Sex within Male and Female Gender Household Type: Percent Distribution of Land Use by Gendered HH Type, Sex of Decision Maker, FtF Zone, 2011

	sex of who decided use of field		
	Male	Female	Male and Female
own cultivated field	85.4	12.1	2.5
garden	91.6	4.5	4.0
fallow natural/improved	89.3	7.5	3.2
virgin land	90.0	7.2	2.8
Other specified	80.7	11.4	7.8
All fields, FtF Zone	86.2	10.9	2.9

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 30. Intra-household Decision Making by Sex within Male and Female Gender Household Type: Percent Distribution of Decision to Sell by Sex of Decision Maker for Male and Female GHT, FtF Zone, 2011

	sex of who decided sale of crop		
	Male	Female	Male and Female
Maize	80.6	14.2	5.3
Sunflower	74.4	20.3	5.3
Groundnuts	69.8	26.5	3.7
Soyabeans	67.2	26.2	6.6
Sweet Potato - white or yellow-fleshed	74.2	13.6	12.2
Sweet Potato - orange fleshed	42.1	57.9	.0
FtF Zone, FtF Crops	75.6	19.4	5.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

- Table 31 shows that within the male and female adult households, men have more control over the sale of livestock, making more than 80% of the decision for all livestock. However, for chickens, women fair much better, making 32% of all decisions.
- Table 32 shows that in cases where women decide to sell cattle, they are likely to sell more than men. With the other livestock, men are likely to sell slightly more than women.
- Women have decision over larger incomes realized from the sale of livestock (Table 33).
- Figure 36 shows the contribution of Eastern Province production to national production of key crops. In total, Eastern accounted for 22.9% of total maize produced during the 2010/11 agricultural season. Eighty-seven percent of all Burley Tobacco was produced by households in Eastern Province, 75% of sunflower, 27% of groundnuts, and 23% of sweet potatoes.

Table 31. Intra-household Decision Making by Sex within Male and Female Gender Household Type: Percent Distribution of Decision Maker by Livestock, FtF Zone, 2011

	sex of who decided sale of livestock		
	Male	Female	Male and Female
Cattle	88.9	7.3	3.7
Goats	82.9	13.4	3.7
Pigs	84.6	12.0	3.3
Sheep	88.2	5.9	5.9
Village chickens	64.0	32.3	3.6

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 32. Intra-household Decision Making by Sex within Male and Female Gender Household Type: Average Number Sold by Decision Maker by Livestock, FtF Zone, 2011

	sex of who decided sale of livestock		
	Male	Female	Male and Female
Cattle	1.9	4.3	1.3
Goats	2.7	2.6	1.6
Pigs	3.1	2.5	2.6
Sheep	2.3	.	.
Village chickens	6.2	5.8	4.9

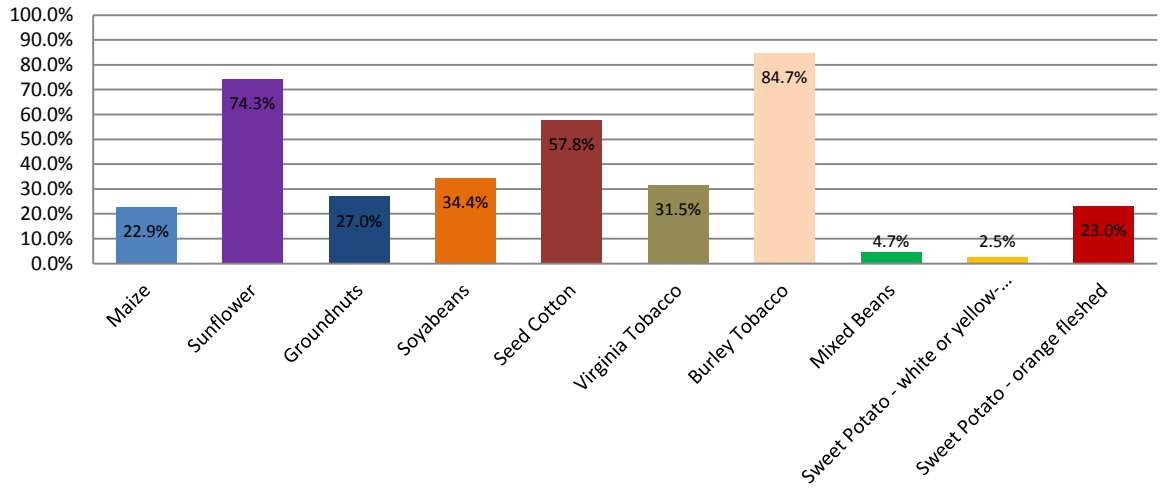
Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 33. Intra-household Decision Making by Sex within Male and Female Gender Household Type: Average Income from Sales (ZMK) by Revenue Use Decision Maker by Livestock, FtF Zone, 2011

	sex of who decided use of revenue from sale of livestock		
	Male	Female	Male and Female
Cattle	2,452,542	2,693,846	2,675,000
Goats	276,149	341,091	233,333
Pigs	459,282	433,462	323,500
Sheep	140,000	400,000	.
Village chickens	85,469	84,549	78,938

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Figure 36. Production in Eastern Province as a Percentage of the Total Production in Zambia, 2011



Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

6.4. Tillage Methods

Smallholder farmers practice a variety of land preparation practices, which differ by income status, gendered household type, and crop.

- Table 34 shows that the majority of households in the FtF Zone use conventional hand hoeing as a method of tillage. About 35% of households growing maize use hand hoeing as the main tillage method. The row percentages may add to more than 100% because of

possible use of more than one tillage method for a crop by a household. Yet ox drawn ploughing is also widespread in the Province.

- Ripping, a key conservation farming practice is not widely adopted in the province. Katete District shows the level of ripping adoption (Table 35)
- Table 36 presents tillage method by gendered household type and poverty status. It shows that poor households are more likely to use hand hoeing than non-poor households. Female only households are more reliant on hand hoeing than households with male and female adults.

Table 34. Percent Households Using Tillage Method by Crop, FTF Zone (Minus Chadiza, Mambwe), Eastern Province, 2011

	conventional hand hoeing	zero tillage	ploughing	ripping	ridging before planting	bunding	mounding
Maize	34.9	3.2	31.4	0.7	29.9	0.0	0.4
Sunflower	26.5	1.0	37.4	0.8	33.8	0.0	0.5
Groundnuts	30.4	0.8	36.4	0.5	31.2	0.0	0.7
Soyabeans	20.1	0.2	11.5	1.8	66.1	0.0	0.3
Seed cotton	31.6	1.8	30.0	0.8	35.6	0.0	0.3
Sweet potato – white/yellow	36.0	0.0	14.2	1.3	19.0	18.0	11.5
Sweet potato – orange	56.1	0.0	0.0	0.0	43.9	0.0	0.0
other	38.2	2.4	14.9	0.0	32.9	7.4	3.9

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 35. Percent Households Using Tillage Method by District, Eastern Province, 2012

	conventional hand hoeing	zero tillage	ploughing	ripping	ridging before planting	bunding	mounding
Chadiza	2.1	0.1	27.3	0.1	73.1	2.7	0.0
Chipata	54.1	0.4	17.9	0.5	36.8	0.4	0.3
Katete	36.2	4.8	51.6	1.3	20.1	1.2	0.6
Lundazi	29.2	3.1	12.4	1.2	70.3	2.4	2.7
Mambwe	82.7	8.3	15.5	0.0	5.6	0.0	0.0
Nyimba	54.6	2.5	46.0	0.1	3.7	0.1	1.6
Petauke	30.1	7.2	56.7	0.8	13.1	0.1	0.5
Eastern	38.3	3.5	32.0	0.8	36.4	1.1	1.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 36. Percent of Households by Gendered Type and Poverty by Tillage Method, FTF Zone, 2012

	conventional hand hoeing	zero tillage	ploughing	ripping	ridging before planting	bunding	mounding
Male & female adults	37.2	3.8	34.7	1.0	36.2	1.1	1.1
Female adult(s) only	46.3	3.3	26.1	0.4	30.0	0.0	1.4
Male adult(s) only	50.7	0.0	29.0	0.2	27.3	1.6	0.0
Child-headed	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Not Poor	29.3	3.0	38.8	1.4	39.3	1.3	0.5
Poor	41.5	3.7	31.7	0.8	33.9	0.9	1.3
Eastern Province	39.0	3.6	33.2	0.9	35.0	1.0	1.1

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 37. Percent of Households by Gendered Type and Poverty by Tillage Method, FTF Zone, 2012

		conventional tilling method	Conservation tilling method
Gendered household type	Male & female adults	95.2	4.8
	Female adult(s) only	96.2	3.8
	Male adult(s) only	99.8	0.2
	Child-headed	100.0	0.0
Poverty Status	Not Poor	95.6	4.4
	Poor	95.5	4.5
	FTF Zone	95.5	4.5

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

- Table 37 shows that adoption of conservation farming is not widespread, but a higher percentage of male and female headed households uses conversation farming techniques than other gendered HH types.

6.5. Input Use and Access

Agricultural activities provide households with food and revenue. More intensive and efficient use of agricultural inputs -including better technologies and farmer know-how are the future of smallholder farming and national food security. But extremely limited access to and use of improved seeds and fertilizers, and other inputs continue to predominate in smallholder agriculture.

- Table 38 shows that, for major food crops, the majority of smallholder households in Eastern Province use local or recycled hybrid seeds. Despite major investments in maize input subsidies, only 38% of households used hybrid maize seeds. The use of improved seed varieties is most common for commercial cash crops, for which input loans are available through out-grower schemes.

Table 38. Percent Households by Crop by Seed Type, Eastern Province, 2010/11

	local seed	recycled hybrid seed	first generation hybrid seed	open pollinated seed	improved seed	Not stated
Maize	65.9	3.6	38.0	.0	.0	.0
Sunflower	63.4	4.9	30.0	.8	.0	.8
Groundnuts	49.6	2.7	47.5	.2	.0	.0
Soyabeans	64.9	18.8	16.3	.0	.0	.0
Seed cotton	.0	.0	95.3	.0	.0	4.7
Virginia tobacco	.0	.0	92.3	.0	.0	7.7
Burley tobacco	.0	.0	84.4	.0	.0	15.6
Sweet potato-white/yellow	96.7	.0	.0	.0	.0	3.3
Sweet potato-orange	100.0	.0	.0	.0	.0	.0
Other crop	80.7	.0	.8	.0	6.5	13.8
Cassava	34.8	.0	.0	.0	65.2	.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 39. Percent Households that Planted Maize by Seed Type, Year, Eastern Province 2002-2011

	Seed type			
Year	local	Recycled hybrid	hybrid	OPV
2006	75.8%	6.5%	17.2%	.5%
2007	78.3%	3.7%	17.6%	.5%
2008	75.5%	6.1%	17.7%	.7%
2009	69.9%	3.2%	26.4%	.5%
2010	63.9%	3.3%	32.6%	.2%
2011	58.0%	3.7%	37.2%	1.0%

Source: Crop Forecast Survey, MAL and CSO, 2000-2011.

- Table 39 presents the trends in seed type for maize between 2006 and 2011. It shows that although hybrid seed use at a household level is still low, it has increased substantially over time, from 14% to 37%.
- At the district-level hybrid maize seed use is highest in Chipata District, at 51%, and lowest in Mambwe (Table 40).
- Table 41 shows that female only households are less likely to use hybrid maize seed than those with male and female adults. Within household with male and female adults, males are more likely to use hybrid or improved seeds on their fields than females.
- Table 42 shows the source of seed by seed type. It shows that for maize seed, which is heavily subsidized by the government, private retailers are still a more important source of seed than the government.

Table 40. Percent Households by Maize Seed Type, Districts, Eastern Province, 2010/11

	Local seed	Recycled hybrid	First generation (F1) hybrid	Open poll. varieties (OPV)	Improved seed	Not stated
Chadiza	76.9	.0	46.4	.0	.0	.0
Chipata	54.0	3.5	51.4	.1	.0	.0
Katete	74.7	3.3	34.0	.0	.0	.0
Lundazi	58.4	5.1	37.7	.0	.0	.0
Mambwe	70.6	1.7	28.8	.0	.0	.0
Nyimba	57.9	7.6	36.3	.0	.0	.0
Petauke	68.9	3.8	31.8	.0	.0	.0
Total Province	65.9	3.6	38.0	.0	.0	.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 41. Seed Use by Type, Crop, Sex of Decision Maker, FtF Zone, 2011

		local/recycled			Hybrid/OPV/Improved		
		Male	Female	Male and Female	Male	Female	Male and Female
Maize	Male and female adults	81.6	14.9	3.5	86.5	10.1	3.4
	Female adult(s) only	.8	99.2	.0	4.6	95.4	.0
Sunflower	Male and female adults	80.2	17.0	2.8	85.4	11.5	3.1
	Female adult(s) only	.0	100.0	.0	.0	100.0	.0
Groundnuts	Male and female adults	78.1	19.6	2.3	79.1	18.2	2.7
	Female adult(s) only	.0	100.0	.0	2.6	97.4	.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 42. Number of Households Reporting Source of Seed by Crop, FTF Zone

	Private retailer	Own harvest	Gov't FSP/Food Pack	Friends/ Relatives	NGO *	Research organizations	Other
Maize	21.4	36.7	15.0	14.0	0.4	0.2	16.5
Sunflower	10.3	56.2	0.3	27.7	0.2	0.5	4.8
Groundnut	7.1	65.0	0.2	24.7	0.4	0.3	2.3
Soyabean	7.1	56.1	0.3	27.1	1.0	0.7	7.7
Sweet potato – w/y	0.8	55.2	0.1	40.3	0.3	0.3	3.2
Sweet potato - orange	3.0	35.9	0.0	56.7	0.0	4.4	0.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey. *Non-governmental Organization.

Table 43. Percent Households that Used Fertilizer for Maize, GHT, Poverty, FtF Zone, District, 2012

District	GHT				Poverty Status		All households
	Male and female adults	Female adult(s) only	Male adult(s) only	Child-headed	Non poor	Poor	
Chadiza	85.3	57.8	54	0	86	79.9	80.6
Chipata	82.1	87.5	53.1	0	93.7	78	81.9
Katete	56.8	49.8	21.1	0	84.4	46.3	54.2
Lundazi	55.5	33.1	41.1	0	76.1	45	52.2
Mambwe	29.8	8.5	0	0	42.2	19.3	25.4
Nyimba	39.3	24.6	12.9	100	76.8	33.7	37.3
Petauke	31.2	29.1	7.3	0	69.4	23.1	30.0
FtF Zone	**56.5**	**50.4**	**29.6**	**100**	**82.4**	**47.6**	**54.8**
Eastern	57.6	48.9	30.1	100	80.4	49.2	55.4

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

- Looking at Eastern Province and the FtF Zone, fertilizer application on maize is low. Only 55.4% of all households that planted maize applied some fertilizer. The Male adults only gendered HH type show the lowest use of fertilizer (Table 43).
- Table 44 shows that throughout the FTF Zone, households with only female adults apply considerably less fertilizer than male and female adult households for maize. These figures are below the national average.

Table 44. Mean Total Fertilizer Use per Household (kg/HH), by Gendered hhd Status, Poverty and Sex of Head, FTF Zone, Eastern Province, 2012

		Main crop or use of this field in the 2010/11 season					
		Maize	Soyabeans	Seed cotton	Virginia tobacco	Burley tobacco	Mixed beans
Gendered household type	Male & female adults	443.71	28.33	130.56	175.00	323.51	100.00
	Female adult(s) only	277.77	50.00	.	.	300.00	.
	Male adult(s) only	576.09	.	.	200.00	400.00	.
	Child-headed	100.00	.	.	.	.	.
Poverty	Non-poor	681.31	25.00	153.57	150.00	522.22	116.67
	Poor	255.81	36.67	50.00	225.00	215.30	50.00
sex of head	Male headed	455.87	28.33	130.56	180.00	324.57	100.00
	Female headed	285.59	50.00	.	.	312.50	.
	Total	427.75	33.75	130.56	180.00	323.63	100.00

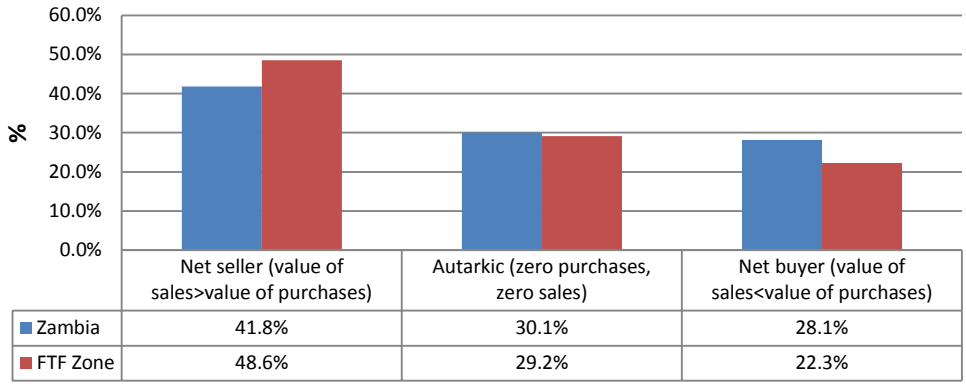
Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.
Note: Fertilizer was not applied to groundnuts, sunflower, or sweet potato.

6.6. Crop Sales Data

This section examines sales patterns in Eastern Province by crop type. Nearly 60% of all households that planted maize in Zambia in 2010/11 agricultural season sold some of their harvest. Over half (51.1%) in Eastern Province and 53% in the FtF ZOI reported selling some of the maize they produced. A high proportion of small and medium-scale farmers are net buyers of the staple food, maize. Net buyers are a category of households that spend more on purchases than they earned on the sale of maize.

- Figure 37 shows that in 2011, 28.1% of all small and medium scale farming households were net buyers of maize. In the FtF Zone in Eastern Zambia, 22.3% of the farming households were net buyers.
- Table 45 shows that percent of all maize grain harvested by small and medium-scale farming HH is retained for own purposes in the FtF Zone. The highest percentage of retention (76.2%) is among the female adults only household type. Female headed households retain a higher percentage of the grain than male-headed ones and so are poor households against non-poor households.

Figure 37. Household Marketing Position of Maize, Zambia FTF Zone, 2011



Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 45. Average Retention Rate of Maize Harvested by GHT, Sex of Head, Poverty Status, FtF Zone, 2011

	Gendered household type				Sex of head		Poverty status	
	Male & female adults	Female adult(s) only	Male adult(s) only	Child-headed	Male headed	Female headed	Non Poor	Poor
Chipata	66.4	80.1	73.0	.	66.2	79.0	60.5	71.4
Katete	58.1	72.1	66.7	.	57.4	71.2	39.4	66.6
Lundazi	62.8	74.2	59.8	.	62.3	72.9	45.8	69.8
Nyimba	64.8	75.4	68.1	60.5	62.8	77.8	38.8	68.8
Petauke	65.2	78.1	62.2	.	64.6	75.0	39.1	71.9
FtF Zone	63.6	76.2	66.1	60.5	63.1	74.9	48.2	70.1

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 46. Percent Distribution of Buyers by Crop, Eastern Province, 2011

	Small-scale trader	Large-scale trader/ wholesaler	Retailer/ marketer	Other hhd (for consumption)	Direct sale to FRA	Sale to FRA through coop	Out grower	Other buyers
Maize	18.9	2.0	2.2	13.1	62.3	3.3	0.7	0.6
Sunflower	65.4	6.0	5.0	19.9	0.0	0.0	2.7	1.1
Groundnuts	60.6	7.4	8.8	16.5	0.0	0.0	1.9	4.7
Soyabeans	59.5	15.3	11.6	6.8	0.0	0.0	3.6	3.3
Sweet potato - white or yellow-fleshed	49.3	0.0	14.1	31.9	0.0	0.0	0.0	4.7
Sweet potato - orange-fleshed	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

- Different crops are bought by different buyers. Most of the maize, in 2011, was sold directly to FRA (62.3%), most of the sunflower, groundnuts and soyabeans grown are sold to small-scale traders. Nearly all cotton and most of the tobacco crop are sold to out-grower (Table 46).
- Table 47 presents the portion of crops controlled by males and females, both within and without the HH. This is determined by the question "who primarily decided whether or not to sell X crop?" This table shows that the male head of the hh is the primarily person to decide on crop sales for all crops, aside from orange flesh sweet potatoes. Despite this, the table does show that females exercise great decision-making autonomy over groundnuts, soyabeans, sweet potato, sunflower, and mixed beans than for other crops.

Table 47. Percent Households by Crop and Decision Maker (whether or not to sell), FTF Zone Eastern Province, 2012

	Gendered crop sales hhd type (who decided whether or not to sell)						
	Male head of hh	Female head of hh	Both head and spouse	Other male hh member	Other female hh member	Non-hh member	Not stated
Maize	68.1	20.1	4.3	0.4	5.9	0.2	1.0
Rice	70.3	26.0	0.3	0.0	3.4	0.0	0.0
Sunflower	62.6	16.8	4.4	0.6	12.6	0.0	2.9
Groundnuts	57.8	21.9	3.0	0.2	15.0	0.3	1.9
Soyabeans	58.4	15.4	5.7	1.0	17.3	0.0	2.2
Seed Cotton	77.7	13.3	4.4	0.8	2.9	0.2	0.8
Sweet Potato – w/ y	66.1	9.6	10.2	0.0	6.9	0.0	7.2
Sweet Potato - orange	42.9	22.4	0.0	0.0	34.7	0.0	0.0
All crops above	66.5	18.4	4.1	0.4	8.8	0.2	1.6

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

6.7. Gross Margins

Gross margins are used to describe the returns to different crops, and are calculated as the difference between sales revenue and variable production costs. Variable costs included only fertilizer and seed costs, for which data were available. Even without other variable costs, the margin levels are very low.

Gross margins are expressed as returns to a unit of land. In this case the gross margins are returns in US$ per hectare ($/ha). They provide a useful way of assessing the relative attractiveness of different crops to farmers.

- Table 48 presents estimates of the mean gross margins for the major crops grown in Eastern Province. Gross margins are low in general with maize averaging $509/ha at Provincial level and 510.1 in the FTF Zone. The tobacco crops give the highest returns on a hectare of land planted, followed by cotton, mixed beans and maize. Sunflower provides the lowest returns. Farmers in Mambwe District had the highest return on maize ($786.6/ha) and burley tobacco ($1,887/ha), on average. Farmers in Chadiza, had on average the lowest returns on maize ($417/ha) (Table 48).
- Male headed households had higher returns than female headed ones. The poor households had poorer returns for all crops. Among the gendered household type, the male and female adults household had the highest gross margins on all crops and maize in particular (Table 49).

Table 48. Gross Margins ($/ha) by Crop by District, Eastern Province, 2012

	Maize	Sunflower	Ground-nuts	Soybeans	Mixed Beans	Sweet Potato –w/y	Sweet Potato - orange
Chadiza	417.8	116.2	236.3	302.5	211.49	220.3	.
Chipata	457.5	352.3	312.6	429.5	798.54	197.7	259.4
Katete	498.2	248.3	346.3	183.0	1,593	328.9	.
Lundazi	577.0	199.8	291.9	389.2	1,519	139.7	.
Mambwe	786.6	337.8	417.1	.	.	-.44	.
Nyimba	510.3	685.3	247.4	.	.	323.7	.
Petauke	514.6	264.9	278.4	186.4	.	52.5	219.1
Total	509.1	243.3	299.2	371.3	1,123	194.9	78.2

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 49. Gross Margins by Crop by Gendered Household Type, Poverty Status, and Sex of Head, FTF Zone, Eastern Province, 2012 (US$/ha)

		Maize	Sunflower	Ground-nuts	Soybeans	Mixed Beans	Sweet Potato – w/y	Sweet Potato orange
Gendered household type	Male and female adults	524.3	278.5	305.4	378.6	1,218.1	208.05	78.28
	Female adult(s) only	403.7	178.5	280.6	382.5	.	183.26	.
	Male adult(s) only	489.4	213.7	276.8	1160.5	.	122.04	.
	Child-headed	153.4	.	.	.	.	.	.
sex of head	Male headed	518.6	269.9	311.6	398.5	1,218.1	196.95	20.31
	Female headed	467.6	239.2	266.4	291.5	.	183.26	560.68
Poverty Status	Not Poor	662.8	354.3	396.7	508.2	920.0	202.42	370.48
	Poor	437.4	226.1	273.7	319.8	1,593.5	191.70	3.22
	FTF Zone	510.1	265.1	301.2	382.7	1,218.1	195.29	78.28

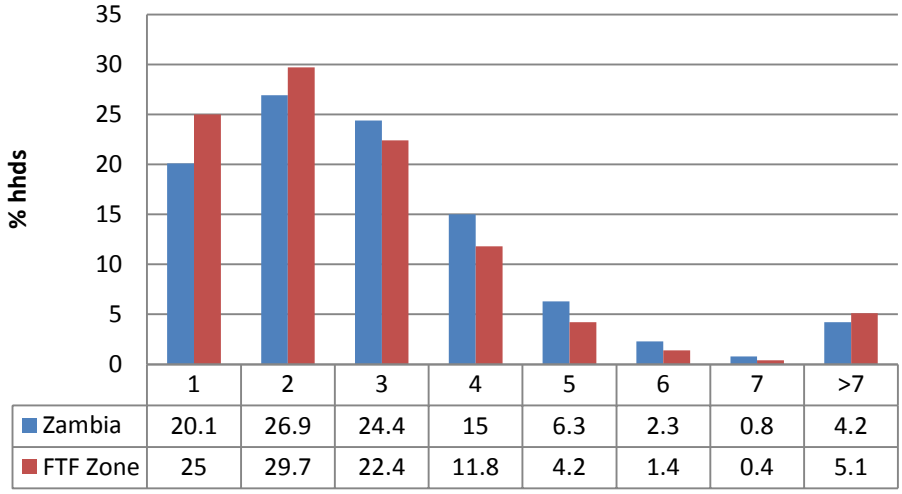
Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey

6.8. Crop Diversification

Crop diversification is important in ensuring food security, income diversification, and enhanced nutritional sources for producers. Diversification also reduces risk in the case of crop failure and poor market.

- Most of small- and medium-scale households in the FTF Zone, cultivate one to four crops. The highest proportion cultivates two crops. About 30% of households cultivated two crops only five cultivated over seven crops (Figure 38).
- Table 50 shows the common combination of the FTF crops in Eastern Province. Overall, 35% of all households grow a combination of maize and groundnuts. Maize is grown by 29.1% of all households as the only crop; about 18% grow a combination of maize, sunflower, and groundnuts.

Figure 38. Percent Households by Number of Crops Grown Zambia and FTF Zone, 2012



Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 50. Percent Distribution of Households by FTF Crops by District, Eastern Province, 2012

	crop combination						
District	Maize only	Maize and groundnuts	Maize, sunflower & groundnuts	Maize and sunflower	Maize, groundnuts, soyabeans	Maize, sunflower, groundnuts, soyabeans	Other combinations
Chadiza	19.6	28.5	22.5	10.4	1.1	8.0	9.9
Chipata	24.8	41.4	22.9	3.0	1.0	2.3	4.6
Katete	32.1	36.2	18.0	7.4	1.3	1.0	3.9
Lundazi	27.4	25.5	12.5	3.4	6.4	6.1	18.9
Mambwe	37.0	46.9	4.3	2.2	.0	.2	9.5
Nyimba	30.5	39.3	16.5	3.6	.0	.0	10.1
Petauke	35.0	37.0	18.8	6.7	.1	.3	2.2
Eastern	29.1	35.3	17.7	5.1	2.0	2.8	8.1

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

The analysis of crop diversity used the Simpson Index of Diversity (SID). The SID takes into account proportionate area of each crop and ranges between zero and one. If there is just one crop the SID=0. As the number of crops increases the SID approaches one. The closer SID is to zero, the more the specialization, and the further it is from zero, implies the more the diversification.

- Eastern Province has a diversification index of .45, indicating it is not very diversified. The least diversified district is Nyimba. The most diversified is Lundazi with an index of 0.51 (Table 51).
- Among the gendered household type, the most diversified are the male and female adults, while the male only households are the least diversified. Poverty status and sex of head do not seem to influence diversity (Table 52).

Table 51. The Simpsons Index by District, Eastern Province, 2012

District	Simpsons Index			
Chadiza	.49	.42	.54	.65
Chipata	.46	.38	.50	.63
Katete	.46	.38	.50	.61
Lundazi	.51	.44	.54	.66
Mambwe	.43	.29	.49	.61
Nyimba	.34	.17	.41	.50
Petauke	.36	.00	.44	.50
Total	.45	.36	.50	.63

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 52. The Simpsons Index by Gendered Type, Poverty Status, Sex of Head, FTF Zone, 2012

		Simpsons Index			
		Mean	Percentile 25	Median	Percentile 75
gendered household type	Male & female adults	.45	.38	.50	.63
	Female adult(s) only	.42	.36	.48	.58
	Male adult(s) only	.30	.00	.36	.50
	Child-headed	.28	.28	.28	.28
poverty status	Non Poor	.47	.38	.50	.63
	Poor	.44	.36	.49	.61
sex of head of household	Male headed	.45	.36	.50	.63
	Female headed	.42	.36	.47	.59
	FTF Zone	.44	.36	.50	.62

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

APPENDICES

APPENDIX I. EASTERN PROVINCE

Table 1. Mean Total Fertilizer Use per Household (Kg/HH), by Crop, District, Eastern Province, 2012

	Maize	Soyabeans	Seed cotton	Virginia tobacco	Burley tobacco	Mixed beans
Chadiza	400.33	0.	250.00	311.75	260.00	50.00
Chipata	319.33	37.50	50.00	100.00	342.80	100.00
Katete	431.60	30.00	81.25	183.33	0.	50.00
Lundazi	429.13	0	250.00	0	216.67	150.00
Mambwe	358.75	0	0	0	400.00	0
Nyimba	510.00	0	0	0	0.	0
Petauke	627.04	0	0	250.00	500.00	0
Total	421.53	33.75	152.27	285.40	304.54	90.00

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.
Note: Fertilizer was not applied to groundnuts, sunflower, or sweet potato.

Table 2. Mean Total Fertilizer Use per Household (Kg/HH), by Gendered HHd Status, Poverty and Sex of Head, Eastern Province, 2012

		Main crop or use of this field in the 2010/11 ag season					
		Maize	Soyabeans	Seed cotton	Virginia tobacco	Burley tobacco	Mixed beans
Gendered household type	Male & female adults	435.08	28.33	152.27	297.05	306.36	90.00
	Female adult(s) only	285.24	50.00	.	200.00	287.50	.
	Male adult(s) only	550.00	.	.	200.00	275.00	.
	Child-headed	100.00	.	.	.	.	.
Poverty	Non-poor	684.77	25.00	153.57	460.00	482.14	100.00
	Poor	257.59	36.67	150.00	169.00	200.94	50.00
Headed	Male headed	446.39	28.33	152.27	237.95	307.79	90.00
	Female headed	296.30	50.00	.	633.33	266.67	.
	Total	421.53	33.75	152.27	285.40	304.54	90.00

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.
Note: Fertilizer was not applied to groundnuts, sunflower, or sweet potato.

Table 3. Average Yield (MT/Ha) by Crop, District Eastern Province, 2012

	Maize	Rice	Sunflower	Groundnuts	Soyabean	Seed cotton	Sweet potato - white or yellow fleshed	Sweet potato - orange fleshed
Chadiza	1.64	.71	.41	.40	.85	1.02	1.58	.85
Chipata	2.15	.76	.54	.54	.93	1.02	2.80	2.94
Katete	1.84	.45	.56	.48	.63	1.18	2.36	1.25
Lundazi	2.61	2.59	.62	.44	.91	.92	2.03	1.66
Mambwe	1.71	1.43	.66	.62	1.21	1.43	2.15	.
Nyimba	2.30	.65	.57	.48	.39	1.22	2.51	1.46
Petauke	2.57	.52	.73	.45	.39	1.18	1.04	1.05
Total	2.24	1.76	.59	.48	.88	1.08	2.12	1.81

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 4. Area Cultivated (ha), Percentage by Crop, District Eastern Province, 2012

	Total Land cultivated (ha)	Maize	Sunflower	Groundnuts	Soya bean	Sweet potato – y/w	Sweet potato - orange	Seed cotton	Tobacco	Mixed beans	Other crops
Chadiza	41,658	57.8	9.9	10.4	3.0	0.6	0.1	12.9	3.6	0.7	1.0
Chipata	116,149	53.2	5.2	15.2	0.5	0.3	0.1	20.3	3.5	0.9	0.9
Katete	87,128	58.8	6.0	9.3	0.4	0.4	0.0	23.9	0.3	0.5	0.4
Lundazi	122,572	45.6	6.2	12.2	5.5	0.8	0.1	25.0	0.7	1.3	2.5
Mambwe	15,190	50.8	1.5	10.0	0.0	0.3		28.4	0.2	0.3	8.5
Nyimba	24,027	71.1	5.5	14.5	0.0	0.7	0.2	7.1		0.0	0.8
Petauke	86,742	66.1	6.2	14.0	0.0	0.2	0.0	12.5	0.0	0.4	0.4
Eastern	493,466	55.8	6.0	12.6	1.8	0.5	0.1	19.8	1.4	0.8	1.3

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 5. Average Area Cultivated (Ha) by Crop, District Eastern Province, 2012

	Total Land holding size	Total Land cultivated (ha)	Maize	Sun flower	Ground nuts	Soybean	Sweet potato - white or yellow	Sweet potato - orange	Seed cotton	Tobacco (Virginia & Burley)	Mixed beans
Chadiza	3.50	2.19	1.27	.47	.37	.43	.25	.20	.72	.48	.25
Chipata	2.34	1.84	.98	.31	.39	.24	.20	.15	.96	.63	.23
Katete	2.73	2.05	1.20	.43	.32	.31	.24	.25	.78	.46	.28
Lundazi	2.90	2.07	.97	.41	.46	.49	.25	.18	1.01	.59	.36
Mambwe	2.18	1.31	.72	.29	.24	.20	.16	.	.79	.61	.41
Nyimba	2.47	1.73	1.24	.41	.41	.13	.18	.15	.48	.	.19
Petauke	1.95	1.66	1.10	.39	.41	.16	.19	.25	.81	.81	.22
Eastern	2.54	1.88	1.06	.39	.39	.44	.23	.18	.87	.57	.28

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 6. Quantity Harvested (MT) by Crop, District Eastern Province, 2012

	Maize	Sunflower	Groundnuts	Soyabeans	Seed Cotton	Virginia Tobacco	Burley Tobacco	Mixed Beans	Sweet Potato - white or yellow-fleshed	Sweet Potato - orange fleshed
Chadiza	42,608.48	1,425.33	1,624.7	1,078.4	4,977.7	574.8	1,478.2	189.8	421.4	28.5
Chipata	135,434.5	3,113.10	9,115.6	438.3	19,790.8	260.7	4,474.1	643.8	557.7	203.3
Katete	102,711.3	2,439.07	3,910.0	237.4	22,949.0	293.5		132.1	760.8	31.5
Lundazi	139,779.6	4,066.21	5,483.6	5,319.7	23,471.6		949.11	875.5	1,665.0	146.7
Mambwe	14,703.3	113.78	933.8	4.3	5,493.4		32.46	22.9	91.2	
Nyimba	34,375.8	664.94	1,457.0	0.7	1,802.8			8.9	301.1	68.0
Petauke	142,987.8	3,191.25	4,854.7	7.1	11,723.6	16.9	60.38	55.6	179.7	38.6
Eastern	612,600.7	15,013.70	27,379.4	7,085.9	90,209.2	1,146.0	6,994.3	1,929	3,977.0	516.5

Source: Rural Agriculture and Livelihoods Survey, IAPRI 2012.

Table 7. Average Quantity Harvested (MT) By A Household by Crop, Eastern Province, 2012

	Maize	*Sunflower*	*Groundnuts*	*Soyabeans*	*Seed Cotton*	*Virginia Tobacco*	*Burley Tobacco*	*Mixed Beans*	*Sweet Potato - white yellow*	*Sweet Potato - orange*
Chadiza	2.24	.16	.14	.37	.67	.41	.83	.17	.43	.17
Chipata	2.16	.16	.20	.18	.81	.93	.72	.15	.34	.43
Katete	2.41	.20	.16	.21	.86	.59	.	.09	.51	.31
Lundazi	2.43	.22	.17	.38	.77	.	.62	.19	.43	.26
Mambwe	1.37	.14	.15	.25	1.00	.	.64	.22	.34	.
Nyimba	2.49	.21	.17	.05	.50	.	.	.18	.33	.19
Petauke	2.74	.23	.16	.04	.88	.89	3.16	.04	.20	.26
Eastern	2.37	.20	.17	.34	.81	.52	.73	.15	.40	.29

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 8. Percent of Households by District by Tillage Method, 2012

	conventional tilling method	Conservation tilling method
Chadiza	99.7	0.3
Chipata	99.0	1.0
Katete	93.9	6.1
Lundazi	95.7	4.3
Mambwe	91.7	8.3
Nyimba	97.4	2.6
Petauke	91.9	8.1
Total	95.7	4.3

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 9. Percent Households That Sold by Crop, Zambia, Eastern Province and Ftf Zone, 2011

	Zambia	Eastern Province	FtF Zone
Maize	59.6	51.1	53.0
Sunflower	38.3	36.2	35.4
Groundnuts	51.3	46.9	48.4
Sweet potato - white or yellow-fleshed	49.4	30.9	28.8
Sweet potato - orange-fleshed	50.0	31.3	38.5

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 10. Percent Households that Sold Maize, by Gendered Type, Poverty Status, and Sex of Head, Ftf Zone, 2011

		Zambia	Eastern Province	FtF Zone
Gendered household type	Male & female adults	61.9	53.5	55.5
	Female adult(s) only	45.9	35.6	36.5
	Male adult(s) only	53.8	51.6	52.0
	Child-headed	100.0	100.0	100.0
Poverty status	Not Poor	77.3	74.4	77.9
	Poor	50.8	42.0	43.0
sex of head	Male headed	62.4	53.7	55.6
	Female headed	47.3	40.3	42.2
	Total	59.6	51.1	53.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 11. Average HH Value of Sales (ZMK), Actual Price, of Various Crops by District, Eastern Province, 2010/11

	Value of maize sales actual price	Value of sunfl sales actual price	Value of gnuts sales actual price	Value of soyab sales actual price	Value of cotton sales actual price	Value of tobacco sales actual price	Value of mbeans sales actual price
Chadiza	1,045,199	58,239	68,419	77,415	829,753	337,232	9,743
Chipata	908,246	25,988	160,862	9,203	975,235	324,222	23,032
Katete	1,352,400	38,174	82,543	4,777	1,665,014	49,628	8,601
Lundazi	1,200,896	56,648	92,715	145,098	1,247,455	58,639	32,247
Mambwe	454,639	9,049	58,775	-	1,440,557	6,825	10,800
Nyimba	1,276,189	28,132	109,026	-	405,481	-	-
Petauke	1,486,324	34,411	91,893	58	698,820	6,284	42
Eastern Province	1,171,564	38,220	105,037	41,101	1,071,624	125,855	15,389

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 12. Average Value of Sales (ZMK), Actual Price, of Various Crops by Gendered HH Type and Poverty Status, Eastern Province, 2012

		Value of maize sales actual price	Value of sunfl sales actual price	Value of gnuts sales actual price	Value of soyab sales actual price	Value of cotton sales actual price	Value of tobacco sales actual price	Value of mbeans sales actual price	Value of sweet pot yel sales actual price	Value of sweet pot orange sales actual price
Gendered household type	Male & female adults	1,348,433	40,354	119,863	44,613	1,195,080	129,024	18,061	2,655	542
	Female adult(s) only	433,186	30,734	74,745	21,314	515,404	26,556	5,316	1,359	-
	Male adult(s) only	1,720,784	16,088	43,301	20,492	704,724	173,240	18,434	5,978	-
	Child-headed	455,000	-	92,000	-	-	-	-	-	-
Poverty Status	Not Poor	4,061,099	83,370	181,342	121,404	1,926,527	222,462	38,098	5,268	1,297
	Poor	496,238	26,535	92,357	19,566	856,215	87,067	10,496	1,872	223
	Eastern Province	1,218,030	38,043	110,374	40,186	1,072,925	114,481	16,084	2,559	440

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 13. Percent Distribution of Land Use by Gendered HH Type, Sex of Decision Maker, Eastern Province, 2011

		sex of who decided use of field		
		Male	Female	Male and Female
own cultivated field	Male & female adults	85.0	12.4	2.6
	Female adult(s) only	1.0	99.0	.0
	Male adult(s) only	90.8	.2	8.9
garden	Male & female adults	90.1	6.4	3.4
	Female adult(s) only	.0	100.0	.0
	Male adult(s) only	76.5	.0	23.5
fallow natural/improved	Male & female adults	88.7	7.9	3.5
	Female adult(s) only	.0	100.0	.0
	Male adult(s) only	94.8	.0	5.2
virgin land	Male & female adults	88.8	8.3	2.9
	Female adult(s) only	.2	99.8	.0
	Male adult(s) only	87.1	1.5	11.4
Other specified	Male & female adults	80.7	12.1	7.2
	Female adult(s) only	3.6	96.4	.0
	Male adult(s) only	100.0	.0	.0
All fields, Eastern Province	Male & female adults	85.7	11.4	2.9
	Female adult(s) only	1.0	99.0	.0
	Male adult(s) only	90.7	.3	9.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 14. Percent Distribution of Land Use by Gendered HH Type, Sex of Decision Maker, FtF Zone, 2011

		sex of who decided use of field		
		Male	Female	Male and Female
own cultivated field	Male & female adults	85.4	12.1	2.5
	Female adult(s) only	1.1	98.9	.0
	Male adult(s) only	89.2	.2	10.6
garden	Male & female adults	91.6	4.5	4.0
	Female adult(s) only	.0	100.0	.0
	Male adult(s) only	70.1	.0	29.9
fallow natural/improved	Male & female adults	89.3	7.5	3.2
	Female adult(s) only	.0	100.0	.0
	Male adult(s) only	93.4	.0	6.6
virgin land	Male & female adults	90.0	7.2	2.8
	Female adult(s) only	.3	99.7	.0
	Male adult(s) only	85.7	1.6	12.7
Other specified	Male & female adults	80.7	11.4	7.8
	Female adult(s) only	4.0	96.0	.0
	Male adult(s) only	100.0	.0	.0
All fields, FtF Zone	Male & female adults	86.2	10.9	2.9
	Female adult(s) only	1.1	98.9	.0
	Male adult(s) only	89.1	.3	10.6

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 15. Percent Distribution of Seed Type by Crop, Sex of Decision Maker, Gendered HH Type, Eastern Province, 2011

		local/recycled			Hybrid/OPV/Improved		
		Male	Female	Male and Female	Male	Female	Male and Female
Maize	Male & female adults	80.9%	15.7%	3.4%	86.6%	10.1%	3.3%
	Female adult(s) only	.7%	99.3%	.0%	4.6%	95.4%	.0%
Sunflower	Male & female adults	80.4%	17.0%	2.5%	86.0%	11.4%	2.6%
	Female adult(s) only	.0%	100.0%	.0%	.0%	100.0%	.0%
Groundnuts	Male & female adults	78.4%	19.4%	2.2%	77.4%	19.1%	3.5%
	Female adult(s) only	.0%	100.0%	.0%	2.1%	97.9%	.0%

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 16. Percent Distribution of Decision to Sell by Sex of Decision Maker, Gendered HH Type, Eastern Province, 2011

		sex of who decided sale of crop		
		Male	Female	Male and Female
Maize	Male & female adults	80.4	14.4	5.2
	Female adult(s) only	2.1	97.9	.0
Sunflower	Male & female adults	75.8	19.5	4.7
	Female adult(s) only	.2	99.8	.0
Groundnuts	Male & female adults	69.9	26.2	3.9
	Female adult(s) only	1.6	98.4	.0
Soyabeans	Male & female adults	69.2	24.8	5.9
	Female adult(s) only	1.0	99.0	.0
Sweet Potato - white or yellow-fleshed	Male & female adults	72.7	16.8	10.4
	Female adult(s) only	.0	100.0	.0
Sweet Potato - orange fleshed	Male & female adults	46.9	53.1	.0
	Female adult(s) only	.0	.0	.0
Eastern Province, FtF crops	Male & female adults	75.8	19.3	4.8
	Female adult(s) only	1.7	98.3	.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 17. Percent Distribution of Decision to Sell by Sex of Decision Maker, Gendered HH Type, FtF Zone, 2011

		sex of who decided sale of crop		
		Male	Female	Male and Female
Maize	Male & female adults	80.6	14.2	5.3
	Female adult(s) only	2.3	97.7	.0
Sunflower	Male & female adults	74.4	20.3	5.3
	Female adult(s) only	.3	99.7	.0
Groundnuts	Male & female adults	69.8	26.5	3.7
	Female adult(s) only	1.8	98.2	.0
Soyabeans	Male & female adults	67.2	26.2	6.6
	Female adult(s) only	1.2	98.8	.0
Sweet Potato - white or yellow-fleshed	Male & female adults	74.2	13.6	12.2
	Female adult(s) only	.0	100.0	.0
Sweet Potato - orange fleshed	Male & female adults	42.1	57.9	.0
	Female adult(s) only	.0	.0	.0
FtF Zone, FtF Crops	Male & female adults	75.6	19.4	5.0
	Female adult(s) only	1.8	98.2	.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 18. Average Values of Actual Sales by Crop, Gender Of Decision Maker, FtF Zone, 2011

		sex of who decided sale of crop		
		Male	Female	Male and Female
Maize	Male & female adults	1,543,310.1	608,451.7	1,085,194.6
	Female adult(s) only	.0	487,893.2	.
Sunflower	Male & female adults	137,110.9	48,684.3	122,785.2
	Female adult(s) only	.	106,735.5	.
Groundnuts	Male & female adults	229,133.4	149,648.2	209,110.7
	Female adult(s) only	.0	122,116.2	.
Soyabeans	Male & female adults	233,388.3	248,395.7	100,832.7
	Female adult(s) only	.	142,519.7	.
Seed Cotton	Male & female adults	2,710,750.9	2,621,286.9	2,976,082.6
	Female adult(s) only	4,549,494.9	1,800,841.3	.
Tobacco	Male & female adults	3,091,037.3	668,500.0	15,800,000.0
	Female adult(s) only	.	1,396,855.8	.
Mixed Beans	Male & female adults	269,828.7	188,026.3	1,350,000.0
	Female adult(s) only	.	237,650.1	.
Sweet Potato - white or yellow-fleshed	Male & female adults	189,974.7	174,575.6	42,852.4
	Female adult(s) only	.	206,294.8	.
Sweet Potato - orange fleshed	Male & female adults	118,919.7	55,814.7	.
	Female adult(s) only	.	.	.

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 19. Average Number of Livestock Owned by Female Members, Ftf Zone, 2011

		Owned by household	owned by female members of this hh?
Cattle	Male & female adults	5	0
	Female adult(s) only	5	3
Goats	Male & female adults	5	1
	Female adult(s) only	3	3
Pigs	Male & female adults	5	1
	Female adult(s) only	5	4
Sheep	Male & female adults	4	1
	Female adult(s) only	1	3
Donkeys	Male & female adults	2	0
	Female adult(s) only	.	.
Village chickens	Male & female adults	10	4
	Female adult(s) only	8	7
Guinea fowls	Male & female adults	4	1
	Female adult(s) only	20	0
Ducks & geese	Male & female adults	5	1
	Female adult(s) only	3	3
Rabbits	Male & female adults	13	12
	Female adult(s) only	4	4

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 20. Percent Distribution of Decision Maker by livestock, Eastern Province, 2011

		sex of who decided sale of livestock		
		Male	Female	Male and Female
Cattle	Male & female adults	89.3	7.5	3.2
	Female adult(s) only	3.6	96.4	.0
Goats	Male & female adults	85.2	11.8	3.1
	Female adult(s) only	.0	100.0	.0
Pigs	Male & female adults	85.8	11.5	2.7
	Female adult(s) only	.0	100.0	.0
Sheep	Male & female adults	85.7	9.5	4.8
	Female adult(s) only	.0	100.0	.0
Village chickens	Male & female adults	66.3	30.1	3.6
	Female adult(s) only	2.2	97.8	.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 21. Percent Distribution of Decision Maker by Livestock, FtF Zone, 2011

		sex of who decided sale of livestock		
		Male	Female	Male and Female
Cattle	Male & female adults	88.9%	7.3%	3.7%
	Female adult(s) only	4.3%	95.7%	.0%
Goats	Male & female adults	82.9%	13.4%	3.7%
	Female adult(s) only	.0%	100.0%	.0%
Pigs	Male & female adults	84.6%	12.0%	3.3%
	Female adult(s) only	.0%	100.0%	.0%
Sheep	Male & female adults	88.2%	5.9%	5.9%
	Female adult(s) only	.0%	100.0%	.0%
Village chickens	Male & female adults	64.0%	32.3%	3.6%
	Female adult(s) only	2.1%	97.9%	.0%

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 22. Average Number Sold by Decision Maker by Livestock, Eastern Province, 2011

		sex of who decided whether or not to sell of livestock		
		Male	Female	Male and Female
Cattle	Male & female adults	1.9	4.1	1.3
	Female adult(s) only	3.0	5.0	.
Goats	Male & female adults	3.0	2.6	1.6
	Female adult(s) only	.	4.3	.
Pigs	Male & female adults	3.1	2.4	2.6
	Female adult(s) only	.	5.9	.
Sheep	Male & female adults	2.0	.	.
	Female adult(s) only	.	2.0	.
Village chickens	Male & female adults	6.0	5.8	9.5
	Female adult(s) only	5.3	7.1	.

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 23. Average Number Sold by Decision Maker by livestock, FtF Zone, 2011

		sex of who decided sale of livestock		
		Male	Female	Male and Female
Cattle	Male & female adults	1.9	4.3	1.3
	Female adult(s) only	3.0	5.0	.
Goats	Male & female adults	2.7	2.6	1.6
	Female adult(s) only	.	4.6	.
Pigs	Male & female adults	3.1	2.5	2.6
	Female adult(s) only	.	3.1	.
Sheep	Male & female adults	2.3	.	.
	Female adult(s) only	.	2.0	.
Village chickens	Male & female adults	6.2	5.8	4.9
	Female adult(s) only	4.5	7.2	.

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 24. Average Income from Sales (ZMK) by Revenue Use Decision Maker, Eastern Province, 2011

		sex of who decided use of revenue from sale of livestock		
		Male	Female	Male and Female
Cattle	Male & female adults	2,455,000	2,693,846	2,675,000
	Female adult(s) only	.	5,100,000	.
Goats	Male & female adults	292,411	333,652	233,333
	Female adult(s) only	.	417,000	.
Pigs	Male & female adults	458,518	445,758	350,455
	Female adult(s) only	625,000	1,159,091	.
Sheep	Male & female adults	247,500	400,000	.
	Female adult(s) only	.	240,000	.
Village chickens	Male & female adults	96,571	85,625	94,150
	Female adult(s) only	36,667	199,458	.

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 25. Primary Source of Labor for Key Agricultural Activities for Maize by GHT, FTF Zone, 2011

		Primary source of labour for largest maize field					
		Female adults	Male adults	Male and female adults	Children	Mechanical Power	Animal draught power
Land preparation / planting	Male & female adults	11.8%	14.1%	39.0%	.0%	.0%	35.1%
	Female adult(s) only	54.6%	5.5%	17.8%	.1%	.2%	21.8%
Weeding	Male & female adults	12.9%	19.3%	63.6%	.0%	.0%	4.1%
	Female adult(s) only	59.5%	9.8%	28.1%	.0%	.0%	2.6%
Harvesting	Male & female adults	15.6%	13.7%	70.4%	.0%	.0%	.3%
	Female adult(s) only	63.8%	6.6%	29.6%	.0%	.0%	.0%

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 26. Primary Source of Labor for Key Agricultural Activities for Largest Groundnut Field by GHT, FTF Zone, 2011

		source of most of labour groundnuts					
		Female adults	Male adults	Male and female adults	Children	Mechanical Power	Animal draught power
Land preparation / planting	Male & female adults	15.5%	9.2%	38.2%	.1%	.0%	37.1%
	Female adult(s) only	54.5%	3.5%	16.4%	.0%	.0%	25.7%
Weeding	Male & female adults	19.5%	14.5%	62.2%	.0%	.0%	3.8%
	Female adult(s) only	66.3%	3.3%	27.7%	.0%	.0%	2.8%
Harvesting	Male & female adults	19.3%	13.7%	66.8%	.0%	.0%	.3%
	Female adult(s) only	64.4%	5.3%	30.3%	.0%	.0%	.0%

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 27. Primary Source of Labor for Key Agricultural Activities for Largest Sunflower Field by GHT, FTF Zone, 2011

		source of most of labour for largest sun flower field					
		Female adults	Male adults	Male and female adults	Children	Mechanical Power	Animal draught power
Land preparation / planting	Male & female adults	9.1%	10.2%	41.1%	.0%	.0%	39.6%
	Female adult(s) only	45.3%	3.7%	29.3%	.0%	.0%	21.7%
Weeding	Male & female adults	12.3%	14.3%	67.7%	.0%	.0%	5.8%
	Female adult(s) only	47.5%	3.0%	48.9%	.0%	.0%	.6%
Harvesting	Male & female adults	16.2%	13.4%	69.8%	.0%	.0%	.7%
	Female adult(s) only	46.3%	5.2%	48.5%	.0%	.0%	.0%

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 28. Primary Source of Labor for Key Agricultural Activities for Largest Cassava Field by GHT, FTF Zone, 2011

		Primary source of labour for largest cassava field					
		Female adults	Male adults	Male and female adults	Children	Mechanical Power	Animal draught power
Land preparation / planting	Male & female adults	2.3%	49.3%	41.6%	.0%	.0%	6.8%
	Female adult(s) only	.0%	.0%	.0%	.0%	.0%	.0%
Weeding	Male & female adults	24.8%	30.1%	43.2%	.0%	.0%	1.9%
	Female adult(s) only	.0%	.0%	.0%	.0%	.0%	.0%
Harvesting	Male & female adults	16.4%	33.7%	49.9%	.0%	.0%	.0%
	Female adult(s) only	.0%	.0%	.0%	.0%	.0%	.0%

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 29. Percent of Source of Most Labour for Groundnuts by Activity, and GHT, FtF Zone, 2011

			source of most of labour – largest groundnut field					
			Female adults	Male adults	Male and female adults	Children	Mechanical Power	Animal draught power
Land preparation / planting	Gendered household type	Male & female adults	15.5	9.2	38.2	.1	.0	37.1
		Female adult(s) only	54.5	3.5	16.4	.0	.0	25.7
		Male adult(s) only	5.4	20.5	24.7	.0	.0	49.5
	sex of head	Male	14.6	10.1	37.5	.1	.0	37.6
		Female	44.9	3.1	24.0	.0	.0	28.0
Weeding	Gendered household type	Male & female adults	19.5	14.5	62.2	.0	.0	3.8
		Female adult(s) only	66.3	3.3	27.7	.0	.0	2.8
		Male adult(s) only	1.4	21.6	57.7	.0	.0	19.4
	sex of head	Male	18.3	15.1	63.1	.0	.0	3.6
		Female	55.0	5.1	34.7	.0	.0	5.1
Harvesting	Gendered household type	Male & female adults	19.3	13.7	66.8	.0	.0	.3
		Female adult(s) only	64.4	5.3	30.3	.0	.0	.0
		Male adult(s) only	11.1	24.2	64.7	.0	.0	.0
	sex of head	Male	17.9	14.2	67.6	.0	.0	.3
		Female	54.9	6.8	38.2	.0	.0	.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

Table 30. Percent of Source of Most Labour for Sunflower by Activity, and GHT, FtF Zone, 2011

			source of most of labour – largest sunflower field					
			Female adults	Male adults	Male and female adults	Children	Mechanical Power	Animal draught power
Land preparation / planting	Gendered household type	Male & female adults	9.1	10.2	41.1	.0	.0	39.6
		Female adult(s) only	45.3	3.7	29.3	.0	.0	21.7
		Male adult(s) only	.0	.0	21.1	.0	.0	78.9
	sex of head	Male	8.8	10.8	40.0	.0	.0	40.4
		Female	35.2	2.5	37.0	.0	.0	25.3
Weeding	Gendered household type	Male & female adults	12.3	14.3	67.7	.0	.0	5.8
		Female adult(s) only	47.5	3.0	48.9	.0	.0	.6
		Male adult(s) only	.0	5.8	94.2	.0	.0	.0
	sex of head	Male	11.5	15.1	68.5	.0	.0	4.9
		Female	39.3	2.5	52.1	.0	.0	6.1
Harvesting	Gendered household type	Male & female adults	16.2	13.4	69.8	.0	.0	.7
		Female adult(s) only	46.3	5.2	48.5	.0	.0	.0
		Male adult(s) only	.0	35.3	64.7	.0	.0	.0
	sex of head	Male	15.9	14.5	68.9	.0	.0	.7
		Female	37.6	3.6	58.9	.0	.0	.0

Source: 2012 CSO/MAL/IAPRI Rural Agricultural Livelihoods Survey.

APPENDIX II. ZAMBIA

Percent of Small and Medium Scale Farmers Growing Maize by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	93.79	92.56	96.16	95.70	94.81	96.05	93.70	95.11	96.61	95.12
Copperbelt	96.93	94.74	96.41	98.64	92.41	92.47	93.15	94.59	95.72	96.60
Eastern	98.81	97.93	98.40	96.95	97.96	97.76	98.20	98.49	98.96	96.85
Luapula	40.72	43.02	34.23	36.65	42.09	43.62	53.80	46.75	54.70	62.59
Lusaka	100.00	96.20	99.11	99.47	94.30	96.03	94.99	98.72	95.27	93.76
Muchinga										84.17
Northern	55.91	58.01	57.47	57.70	60.45	63.27	66.86	64.46	74.13	69.77
NorthWestern	72.47	83.62	83.96	81.22	78.31	77.20	81.68	81.60	84.08	78.30
Southern	97.14	90.01	93.55	91.83	89.09	94.77	89.33	87.58	87.89	95.93
Western	86.35	87.80	86.66	79.19	89.66	91.77	87.88	84.07	83.21	86.63
National	80.29	80.54	80.49	79.42	80.66	82.34	83.32	81.72	85.62	85.97

Percent of Small and Medium Scale Farmers Growing Sorghum by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	11.83	9.84	10.66	6.52	5.84	4.28	5.54	3.36	2.99	1.30
Copperbelt	9.60	9.40	9.98	4.08	5.32	2.78	5.26	2.57	3.45	2.36
Eastern	2.90	3.70	2.74	3.27	4.13	2.91	2.76	2.84	1.98	.02
Luapula	2.76	3.38	2.43	2.00	1.71	1.20	2.48	2.05	1.95	.68
Lusaka	2.66	3.47	6.28	2.84	2.40	2.77	1.83	.81	1.24	3.05
Muchinga										8.41
Northern	7.01	6.78	2.52	2.75	.63	1.27	.94	2.92	1.30	.60
NorthWestern	14.33	13.45	14.33	11.18	7.34	7.81	5.72	6.25	4.13	2.75
Southern	16.10	14.99	12.97	12.98	7.75	7.48	10.71	9.29	7.11	5.76
Western	13.12	21.84	26.20	20.82	11.65	7.10	9.78	8.51	4.74	5.94
National	8.65	9.39	8.85	7.20	4.98	4.01	4.87	4.41	3.19	2.74

Percent of Small and Medium Scale Farmers Growing Rice by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	.26	1.23	1.43	.00	.73	.10	.87	.42	0.39	.02
Copperbelt	.04	.02	.03	.08	.03	.06	.11	.07	0.10	.09
Eastern	.76	5.85	5.49	5.48	4.62	3.67	3.35	4.77	3.14	2.21
Luapula	2.21	1.92	2.01	2.21	2.98	2.97	3.30	2.14	2.88	3.79
Lusaka	.00	.00	.11	.10	1.86	.47	.73	.65	0.75	.39
Muchinga										11.32
Northern	5.64	7.09	6.05	4.29	6.55	6.53	10.82	10.03	9.87	6.95
NorthWestern	.00	.66	.28	.27	.31	1.19	2.04	.53	2.31	.53
Southern	.00	.00	.00	.02	.00	.00	.03	.00	0.00	.07
Western	5.67	4.33	9.77	3.48	9.59	9.97	14.17	15.14	13.95	18.16
National	2.06	3.31	3.64	2.49	3.59	3.41	4.61	4.49	4.27	4.45

Percent of Small and Medium Scale Farmers Growing Millet by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	10.48	6.55	5.42	7.67	5.02	6.16	8.07	5.00	4.21	2.99
Copperbelt	1.10	.34	.84	1.64	.79	.61	1.72	1.48	1.08	.54
Eastern	2.35	2.41	2.55	2.93	4.29	1.82	1.85	1.94	1.48	.28
Luapula	7.59	6.13	6.63	4.20	5.86	3.64	3.04	3.94	1.26	4.35
Lusaka	.50	1.19	.00	.41	.03	.11	.85	.16	0.30	.92
Muchinga										22.57
Northern	48.24	42.36	38.94	38.04	34.64	32.42	40.94	35.04	28.68	19.63
NorthWestern	4.15	5.10	2.58	2.69	2.12	1.72	2.40	2.01	2.31	1.56
Southern	4.44	7.37	8.99	10.30	4.99	3.71	3.64	3.60	1.33	3.42
Western	19.09	22.98	19.75	23.15	19.30	13.41	12.31	16.17	10.96	10.67
National	14.07	13.43	12.41	12.88	11.23	9.42	10.74	9.92	7.58	6.80

Percent of Small and Medium Scale Farmers Growing Sunflower by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	3.27	6.85	4.28	5.06	3.07	2.03	3.39	2.65	1.42	1.95
Copperbelt	.02	.60	.78	.20	.09	.14	.47	.21	0.43	.50
Eastern	12.07	19.07	19.90	27.06	17.92	22.16	35.50	27.74	21.52	25.53
Luapula	.24	.52	.24	.22	.08	.07	.21	.11	0.05	.17
Lusaka	.00	1.19	.31	1.39	.67	.42	.68	1.21	0.38	1.06
Muchinga										2.52
Northern	3.67	4.90	5.79	4.94	3.76	3.03	3.61	6.27	4.02	3.94
NorthWestern	.06	.29	1.06	.55	.24	.13	.32	.21	0.14	.16
Southern	4.59	5.69	4.67	4.37	2.76	1.90	5.24	4.34	4.43	5.33
Western	.00	.00	.04	.00	.01	.08	.04	.08	0.07	.18
National	4.02	6.22	6.14	7.37	4.83	5.25	8.85	7.30	5.63	6.60

Percent of Small and Medium Scale Farmers Growing Groundnuts by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	32.53	14.41	24.09	20.41	34.76	32.71	44.75	44.56	38.43	30.31
Copperbelt	32.72	19.87	35.12	28.63	27.05	28.19	42.64	48.53	32.05	36.53
Eastern	62.17	53.83	69.81	46.62	52.29	56.05	63.95	69.40	62.70	53.50
Luapula	53.95	40.78	48.68	46.78	47.45	45.45	50.77	53.51	46.55	46.83
Lusaka	25.54	20.25	31.72	23.66	23.63	26.49	24.52	27.54	23.46	20.87
Muchinga										52.40
Northern	66.42	59.58	61.74	63.09	51.88	46.32	56.42	59.61	57.98	59.23
NorthWestern	17.94	17.58	21.02	19.66	17.53	18.73	18.40	18.85	20.61	21.19
Southern	17.72	24.93	31.74	42.78	38.65	32.43	33.37	45.91	38.14	27.60
Western	12.46	12.76	10.18	7.51	11.13	13.36	12.31	19.54	18.98	12.00
National	41.46	35.06	42.54	37.90	38.25	37.19	43.75	48.58	43.43	39.17

Percent of Small and Medium Scale Farmers Growing Soyabean by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	4.43	11.66	14.72	7.60	7.62	2.31	4.81	6.30	6.04	3.72
Copperbelt	2.06	2.70	3.30	1.68	2.12	1.04	2.36	4.34	1.63	2.45
Eastern	4.15	6.35	10.25	9.10	7.56	4.69	7.50	7.13	5.63	6.15
Luapula	.42	1.12	.68	1.06	1.62	.97	1.65	1.02	0.57	.89
Lusaka	1.25	2.25	9.49	1.94	.87	.49	1.09	.60	0.59	1.11
Muchinga										5.51
Northern	5.63	5.86	9.72	9.90	5.76	4.18	4.98	8.20	5.02	3.69
NorthWestern	.49	.57	1.20	1.03	1.15	1.36	2.03	2.24	1.60	1.43
Southern	.99	1.08	.39	.21	.23	.54	.60	.39	0.63	.34
Western	.00	.04	.00	.18	.06	.07	.04	.18	0.21	.39
National	2.68	4.14	6.11	4.83	3.83	2.28	3.50	4.21	3.05	2.89

Percent of Small and Medium Scale Farmers Growing Cotton by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	17.52	20.69	25.42	26.85	8.94	11.97	8.76	8.00	15.28	32.71
Copperbelt	.00	.05	.11	.03	.09	.06	.02	.03	0.05	.70
Eastern	35.23	41.49	52.31	45.41	35.77	40.12	33.10	26.96	39.58	63.99
Luapula	.00	.00	.00	.00	.00	.00	.00	.00	0.00	.00
Lusaka	1.30	3.40	7.72	5.00	3.54	1.72	1.03	.83	1.74	5.00
Muchinga										16.19
Northern	.00	.00	.06	.00	.12	.12	.12	.01	0.00	.00
NorthWestern	.00	.27	.00	.13	.01	.00	.00	.00	0.03	.00
Southern	5.45	15.45	19.49	17.08	4.58	6.93	6.41	2.26	6.46	19.50
Western	.13	.61	.71	1.01	.20	.18	.08	.07	0.15	.67
National	9.73	12.47	15.70	14.25	8.55	9.93	8.49	6.36	10.11	13.87

Percent of Small and Medium Scale Farmers Growing Irish Potatoes by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	.00	.00	.02	.04	.03	.22	.30	.28	0.04	.22
Copperbelt	.00	.00	.69	.80	.29	.31	.19	.64	0.73	.27
Eastern	.00	.00	.67	.43	.01	.40	.14	.25	0.30	.22
Luapula	.00	.00	.00	.00	.00	.04	.01	.02	0.05	.06
Lusaka	.00	.00	.74	.00	.06	.79	.17	.03	0.27	.03
Muchinga										.15
Northern	.00	.00	.10	.10	.14	.07	.15	.14	0.11	.13
NorthWestern	.00	.00	.06	.95	1.35	.70	.65	.92	1.68	2.45
Southern	.00	.00	.00	.02	.01	.17	.25	.09	0.09	.04
Western	.00	.00	.00	.04	.00	.00	.00	.03	0.01	.00
National	.00	.00	.22	.24	.16	.24	.19	.24	0.28	.36

Percent of Small and Medium Scale Farmers Growing Tobacco by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	.14	.73	2.43	.87	.60	1.35	2.18	2.22	3.42	1.08
Copperbelt	.00	.00	.00	.00	.00	.03	.02	.32	0.03	.00
Eastern	3.90	7.97	9.63	4.12	.94	2.26	4.66	4.33	5.93	2.03
Luapula	.00	.00	.00	.00	.00	.00	.02	.06	0.00	.00
Lusaka	.00	.00	.10	.00	.00	.00	.58	.00	0.04	.00
Muchinga										.16
Northern	.00	.30	.13	.08	.00	.48	.51	.91	0.56	.00
NorthWestern	.00	.00	.47	.00	.00	.00	.00	.00	0.25	.04
Southern	.73	.32	.75	.62	.13	.00	.60	.85	1.22	1.00
Western	.00	.48	1.04	1.38	.61	1.33	1.81	1.08	1.47	.40
National	.89	1.78	2.41	1.14	.33	.82	1.54	1.49	1.92	.47

Percent of Small and Medium Scale Farmers Growing Beans by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	14.59	7.45	9.60	13.78	10.78	8.54	14.50	12.37	6.93	10.23
Copperbelt	12.45	8.42	12.49	11.89	7.30	7.73	17.76	14.28	10.48	13.86
Eastern	3.26	3.15	3.78	3.66	1.79	2.23	4.97	3.20	2.90	5.60
Luapula	6.67	13.09	13.03	8.68	11.21	11.21	15.12	13.51	11.18	14.01
Lusaka	6.20	6.16	7.49	6.38	5.17	5.65	3.79	7.97	5.80	6.97
Muchinga										36.32
Northern	39.28	35.87	36.90	38.77	40.61	42.66	46.61	47.96	43.33	53.79
NorthWestern	14.22	28.31	18.47	28.73	9.52	17.70	21.98	19.92	14.54	15.24
Southern	8.90	6.86	2.55	2.03	2.30	1.01	1.70	2.38	0.55	2.51
Western	.70	6.07	2.35	.04	.91	.94	1.12	2.26	1.88	1.14
National	13.16	13.89	13.00	13.76	11.92	12.69	15.57	15.34	12.63	15.97

Percent of Small and Medium Scale Farmers Growing Cowpeas by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	3.00	.54	1.25	2.93	1.47	1.77	2.47	1.79	0.40	1.08
Copperbelt	2.73	.04	.56	.35	.08	.09	1.50	.50	0.39	.27
Eastern	.03	.65	.03	.44	.58	.61	.48	.65	0.15	.20
Luapula	.14	.35	.00	.10	.08	.04	.54	.43	0.09	.28
Lusaka	.09	2.45	2.39	5.19	2.14	.80	3.14	.19	0.91	.71
Muchinga										.90
Northern	.65	5.81	.48	.26	1.17	.51	1.13	.57	0.69	.17
NorthWestern	.48	.89	1.76	.30	.05	.69	.33	.09	0.02	.00
Southern	8.82	12.12	10.28	13.10	3.42	4.33	12.97	6.16	1.37	3.26
Western	1.63	2.34	1.60	1.60	1.52	.89	1.57	2.47	0.89	5.42
National	1.91	3.14	1.90	2.44	1.15	1.13	2.77	1.59	0.55	1.23

Percent of Small and Medium Scale Farmers Growing Velvet Beans by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	.00	.00	.19	.00	.00	.00	.02	.02	0.03	.00
Copperbelt	.00	.00	.14	.00	.00	.00	.00	.00	0.00	.00
Eastern	.00	.00	.00	.00	.01	.00	.01	.00	0.02	.00
Luapula	.00	.00	.00	.00	.00	.09	.01	.00	0.01	.00
Lusaka	.00	.00	.04	.15	.00	.00	.00	1.11	0.00	.04
Muchinga										.00
Northern	.00	.00	.00	.50	.00	.00	.00	.06	0.01	.00
NorthWestern	.00	.00	.00	.00	.04	.00	.00	.00	0.00	.02
Southern	.00	.00	.02	.00	.00	.00	.34	.20	0.00	.34
Western	.00	.00	.00	.02	.00	.00	.00	.00	0.00	.00
National	.00	.00	.03	.10	.01	.01	.05	.07	0.01	.04

Percent of Small and Medium Scale Farmers Growing Coffee by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	.00	.00	.33	.00	.03	.00	.00	.00	0.00	.00
Copperbelt	.00	.00	.00	.00	.00	.00	.00	.02	0.00	.00
Eastern	.00	.00	.00	.00	.00	.00	.00	.00	0.00	.07
Luapula	.00	.00	.00	.00	.00	.00	.00	.00	0.00	.00
Lusaka	.00	.00	.00	.00	.00	.00	.00	.00	0.00	.00
Muchinga										.00
Northern	.00	.00	.00	.14	.00	.00	.00	.00	0.02	.00
NorthWestern	.00	.00	.00	.00	.00	.00	.00	.00	0.00	.00
Southern	.00	.00	.00	.00	.00	.00	.00	.00	0.04	.00
Western	.00	.00	.00	.00	.00	.00	.00	.00	0.00	.00
National	.00	.00	.04	.02	.00	.00	.00	.00	0.01	.01

Percent of Small and Medium Scale Farmers Growing Sweet Potatoes by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	32.91	16.33	18.84	30.65	25.85	21.38	28.35	28.52	19.71	18.39
Copperbelt	53.96	25.43	36.54	33.41	23.41	23.48	39.49	39.56	20.00	31.33
Eastern	6.33	2.04	2.20	4.34	4.16	4.29	4.51	2.89	1.77	3.06
Luapula	18.33	9.78	11.82	4.85	13.17	18.67	22.84	18.77	10.30	14.62
Lusaka	11.65	10.35	5.20	12.46	7.48	5.42	22.38	13.02	6.40	11.25
Muchinga										27.45
Northern	20.64	22.55	17.25	14.00	13.78	16.00	18.10	22.07	18.83	16.76
NorthWestern	21.42	21.97	18.82	6.33	11.71	15.82	18.38	12.10	13.37	11.29
Southern	6.88	6.88	4.13	16.49	3.06	5.79	21.94	22.46	11.97	9.52
Western	6.48	6.76	1.50	3.48	2.02	2.69	5.20	6.47	2.81	2.24
National	17.33	12.60	11.55	12.67	10.95	12.15	17.78	17.60	11.54	14.59

Percent of Small and Medium Scale Farmers Growing Cassava by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	22.61	14.14	12.89	14.27	15.07	14.76	14.73	12.93	14.47	14.16
Copperbelt	25.29	18.73	17.32	19.15	12.54	12.25	15.64	11.14	6.41	12.80
Eastern	9.58	4.03	4.67	4.39	3.91	3.98	3.40	2.27	1.19	2.44
Luapula	96.85	95.22	97.62	97.74	95.27	95.16	93.63	92.19	90.24	90.61
Lusaka	11.44	8.74	5.75	5.63	6.83	5.63	4.92	4.23	3.09	2.95
Muchinga										50.86
Northern	89.85	87.83	88.42	89.80	77.66	75.58	78.27	80.13	76.95	84.95
NorthWestern	76.42	66.33	71.78	66.10	65.94	67.31	72.32	67.95	61.84	66.72
Southern	8.07	1.17	.29	1.01	.33	.78	.86	1.62	0.70	0.56
Western	63.35	49.15	43.28	45.93	44.13	37.67	49.02	51.43	52.72	57.29
National	47.29	41.16	41.03	41.32	38.21	37.22	38.11	37.90	36.05	38.33

Number of Small and Medium Scale Farmers Growing Maize by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	125,880	131,845	142,771	150,757	159,004	170,347	158,001	167,999	158,724	149,126
Copperbelt	65,571	73,617	76,642	79,054	81,453	82,694	80,662	95,607	93,717	68,725
Eastern	238,467	243,996	251,154	255,482	268,042	276,015	283,638	274,572	279,800	257,391
Luapula	55,358	60,792	49,659	54,684	66,016	70,875	89,811	80,063	93,539	98,926
Lusaka	33,951	35,012	37,218	38,042	38,477	40,941	39,649	41,316	46,924	35,857
Muchinga										89,536
Northern	118,546	134,084	136,947	141,408	157,108	171,049	168,132	169,500	203,645	126,869
NorthWestern	72,079	87,286	90,543	91,534	93,963	97,077	89,587	89,603	89,740	68,080
Southern	140,834	138,256	148,669	151,498	156,349	173,943	178,044	173,294	191,157	200,111
Western	115,508	122,285	124,552	117,520	140,365	149,731	128,763	120,374	117,979	121,976
National	966,194	1,027,172	1,058,155	1,079,979	1,160,778	1,232,673	1,216,287	1,212,327	1,275,225	1,216,599

Number of Small and Medium Scale Farmers Growing Sorghum by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	15,880	14,021	15,823	10,267	9,788	7,586	9,336	5,927	4,911	2,035
Copperbelt	6,493	7,303	7,937	3,270	4,691	2,489	4,559	2,598	3,377	1,679
Eastern	6,987	9,211	6,987	8,627	11,308	8,221	7,976	7,909	5,608	52
Luapula	3,752	4,782	3,523	2,988	2,685	1,952	4,138	3,508	3,342	1,078
Lusaka	903	1,264	2,360	1,087	979	1,181	763	340	611	1,166
Muchinga										8,950
Northern	14,871	15,677	6,006	6,751	1,625	3,431	2,373	7,688	3,559	1,096
NorthWestern	14,256	14,041	15,456	12,593	8,813	9,827	6,275	6,864	4,410	2,393
Southern	23,338	23,029	20,613	21,420	13,601	13,723	21,337	18,382	15,465	12,013
Western	17,554	30,423	37,654	30,892	18,234	11,585	14,327	12,182	6,726	8,357
National	104,034	119,750	116,359	97,896	71,724	59,994	71,083	65,399	48,009	38,820

Number of Small and Medium Scale Farmers Growing Rice by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	355	1,758	2,119	0	1,230	183	1,475	743	640	25
Copperbelt	29	19	28	65	28	53	92	75	99	62
Eastern	1,842	14,569	14,023	14,435	12,629	10,361	9,669	13,293	8881	5,868
Luapula	2,999	2,708	2,917	3,300	4,675	4,822	5,516	3,661	4930	5,991
Lusaka	0	0	39	38	760	202	305	274	368	151
Muchinga										12,043
Northern	11,965	16,389	14,425	10,509	17,019	17,666	27,212	26,368	27117	12,632
NorthWestern	0	691	301	299	373	1,496	2,234	579	2464	462
Southern	0	0	0	40	0	0	50	0	0	144
Western	7,586	6,037	14,044	5,166	15,018	16,263	20,759	21,678	19774	25,575
National	24,777	42,172	47,896	33,852	51,733	51,046	67,314	66,672	64,272	62,951

Number of Small and Medium Scale Farmers Growing Millet by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	14,065	9,330	8,043	12,087	8,417	10,931	13,613	8,838	6,923	4,682
Copperbelt	741	264	669	1,310	695	550	1,492	1,498	1,057	384
Eastern	5,681	6,016	6,498	7,720	11,733	5,127	5,333	5,418	4,184	738
Luapula	10,313	8,666	9,618	6,270	9,193	5,910	5,081	6,750	2,162	6,869
Lusaka	168	434	0	158	13	48	354	67	150	353
Muchinga										24,008
Northern	102,280	97,915	92,799	93,231	90,034	87,664	102,960	92,136	78,794	35,691
NorthWestern	4,123	5,326	2,780	3,027	2,543	2,169	2,637	2,211	2,465	1,354
Southern	6,440	11,325	14,294	16,995	8,756	6,811	7,249	7,129	2,885	7,127
Western	25,540	32,001	28,384	34,353	30,214	21,872	18,045	23,148	15,542	15,026
National	169,351	171,278	163,086	175,151	161,598	141,082	156,764	147,195	114,162	96,231

Number of Small and Medium Scale Farmers Growing Sunflower by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	4,393	9,756	6,350	7,978	5,146	3,596	5,717	4,682	2,331	3,056
Copperbelt	16	470	623	164	78	125	404	214	417	355
Eastern	29,122	47,514	50,800	71,310	49,038	62,573	102,532	77,322	60,849	67,842
Luapula	331	738	354	333	128	115	350	187	93	276
Lusaka	0	434	118	533	272	177	283	504	186	407
Muchinga										2,677
Northern	7,777	11,327	13,797	12,109	9,766	8,189	9,089	16,491	11,049	7,170
NorthWestern	61	302	1,144	620	294	158	355	233	145	135
Southern	6,656	8,740	7,415	7,215	4,841	3,479	10,435	8,582	9,639	11,117
Western	0	0	62	0	8	124	53	111	101	257
National	48,357	79,281	80,664	100,263	69,571	78,535	129,218	108,326	84,810	93,291

Number of Small and Medium Scale Farmers Growing Groundnuts by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	43,660	20,530	35,758	32,144	58,304	58,013	75,450	78,715	63,136	47,525
Copperbelt	22,131	15,443	27,919	22,943	23,842	25,211	36,921	49,049	31,377	25,991
Eastern	150,039	134,127	178,178	122,860	143,067	158,255	184,714	193,474	177,277	142,183
Luapula	73,355	57,631	70,616	69,798	74,428	73,844	84,751	91,629	79,597	74,011
Lusaka	8,670	7,368	11,910	9,048	9,640	11,293	10,235	11,526	11,555	7,981
Muchinga										55,736
Northern	140,818	137,714	147,121	154,618	134,852	125,232	141,886	156,756	159,272	107,710
NorthWestern	17,847	18,354	22,665	22,153	21,031	23,557	20,182	20,704	21,999	18,428
Southern	25,688	38,286	50,442	70,579	67,824	59,526	66,503	90,855	82,950	57,571
Western	16,668	17,771	14,627	11,149	17,430	21,798	18,032	27,980	26,909	16,900
National	498,876	447,224	559,236	515,294	550,418	556,730	638,673	720,688	654,072	554,035

Number of Small and Medium Scale Farmers Growing Soyabean by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	5,952	16,601	21,856	11,968	12,780	4,100	8,113	11,135	9,921	5,830
Copperbelt	1,395	2,099	2,620	1,345	1,871	926	2,044	4,386	1,598	1,744
Eastern	10,021	15,833	26,160	23,982	20,680	13,237	21,664	19,891	15,925	16,354
Luapula	574	1,590	993	1,588	2,543	1,571	2,762	1,745	983	1,406
Lusaka	425	817	3,563	742	356	208	456	251	289	426
Muchinga										5,858
Northern	11,941	13,543	23,154	24,273	14,967	11,305	12,525	21,571	13,798	6,712
NorthWestern	490	591	1,297	1,156	1,381	1,705	2,226	2,462	1,712	1,240
Southern	1,434	1,654	616	350	410	997	1,191	766	1,373	716
Western	0	56	0	261	92	106	58	258	293	544
National	32,232	52,785	80,258	65,665	55,079	34,156	51,037	62,463	45,891	40,830

Number of Small and Medium Scale Farmers Growing Cotton by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	23,521	29,470	37,739	42,300	14,998	21,231	14,770	14,127	25,107	51,275
Copperbelt	0	41	87	28	79	54	21	32	45	496
Eastern	85,027	103,378	133,528	119,670	97,862	113,271	95,603	75,173	111,909	170,059
Luapula	0	0	0	0	0	0	0	0	0	0
Lusaka	442	1,239	2,900	1,911	1,446	731	428	345	859	1,911
Muchinga										17,219
Northern	0	0	140	0	313	320	292	31	0	0
NorthWestern	0	286	0	147	17	0	0	0	33	0
Southern	7,902	23,723	30,973	28,184	8,043	12,721	12,768	4,466	14,042	40,681
Western	177	845	1,026	1,493	309	295	117	103	213	938
National	117,069	158,982	206,392	193,731	123,066	148,623	123,998	94,278	152,208	282,580

Number of Small and Medium Scale Farmers Growing Irish Potatoes by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	0	0	25	58	51	396	504	497	58	337
Copperbelt	0	0	549	639	259	280	161	642	712	191
Eastern	0	0	1,723	1,132	30	1,122	415	690	848	597
Luapula	0	0	0	0	0	63	16	29	80	98
Lusaka	0	0	279	0	23	338	71	14	133	10
Muchinga										159
Northern	0	0	244	249	362	179	376	380	305	234
NorthWestern	0	0	68	1,072	1,616	885	715	1,016	1,797	2,130
Southern	0	0	0	32	13	313	500	184	193	93
Western	0	0	0	57	0	0	0	38	18	0
National	0	0	2,888	3,239	2,354	3,575	2,757	3,489	4,143	3,850

Number of Small and Medium Scale Farmers Growing Tobacco by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	192	1,033	3,610	1,370	1,012	2,394	3,668	3,917	5,617	1,687
Copperbelt	0	0	0	0	0	31	20	325	28	0
Eastern	9,406	19,864	24,582	10,868	2,582	6,380	13,448	12,077	16,774	5,387
Luapula	0	0	0	0	0	0	33	102	0	0
Lusaka	0	0	37	0	0	0	241	0	18	0
Muchinga										172
Northern	0	693	315	207	0	1,300	1,275	2,397	1,548	0
NorthWestern	0	0	507	0	0	0	0	0	267	32
Southern	1,061	495	1,200	1,024	236	8	1,201	1,673	2,654	2,081
Western	0	668	1,496	2,041	962	2,171	2,645	1,553	2,082	564
National	10,659	22,753	31,748	15,511	4,792	12,285	22,531	22,044	28,988	9,923

Number of Small and Medium Scale Farmers Growing Beans by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	19,578	10,612	14,253	21,710	18,072	15,153	24,442	21,850	11,387	16,043
Copperbelt	8,426	6,539	9,931	9,532	6,439	6,911	15,377	14,429	10,260	9,862
Eastern	7,879	7,838	9,656	9,649	4,904	6,284	14,350	8,925	8,198	14,893
Luapula	9,075	18,497	18,904	12,958	17,581	18,207	25,238	23,142	19,111	22,139
Lusaka	2,106	2,243	2,813	2,440	2,108	2,411	1,582	3,337	2,854	2,665
Muchinga										38,632
Northern	83,289	82,904	87,940	95,004	105,541	115,342	117,207	126,114	119,029	97,821
NorthWestern	14,138	29,554	19,922	32,375	11,425	22,260	24,105	21,869	15,515	13,250
Southern	12,904	10,537	4,055	3,354	4,032	1,848	3,398	4,706	1,192	5,237
Western	930	8,456	3,375	61	1,431	1,537	1,636	3,237	2,669	1,602
National	158,323	177,181	170,848	187,082	171,533	189,952	227,334	227,610	190,215	222,147

Number of Small and Medium Scale Farmers Growing Cowpeas by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	4,023	768	1,852	4,608	2,459	3,137	4,157	3,167	660	1,699
Copperbelt	1,850	33	447	284	67	82	1,296	503	386	191
Eastern	65	1,627	84	1,150	1,595	1,733	1,399	1,822	426	536
Luapula	197	498	0	155	123	64	903	734	147	444
Lusaka	30	891	897	1,984	874	340	1,312	78	447	270
Muchinga										953
Northern	1,381	13,441	1,145	626	3,029	1,368	2,850	1,488	1,886	318
NorthWestern	474	932	1,902	338	65	874	367	103	18	0
Southern	12,781	18,622	16,329	21,604	6,006	7,939	25,855	12,190	2,989	6,797
Western	2,187	3,258	2,296	2,371	2,382	1,447	2,307	3,542	1,255	7,626
National	22,986	40,069	24,952	33,121	16,602	16,985	40,445	23,627	8,214	18,832

Number of Small and Medium Scale Farmers Growing Velvet Beans by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	0	0	282	0	0	0	41	38	57	0
Copperbelt	0	0	111	0	0	0	0	0	0	0
Eastern	0	0	0	0	22	0	24	0	59	0
Luapula	0	0	0	0	0	146	16	0	25	0
Lusaka	0	0	16	59	0	0	0	463	0	16
Muchinga										0
Northern	0	0	0	1,214	7	0	0	168	24	0
NorthWestern	0	0	0	0	50	0	0	0	0	16
Southern	0	0	30	0	0	5	679	391	0	718
Western	0	0	0	27	0	0	0	0	0	0
National	0	0	439	1,301	79	152	760	1,061	164	750

Number of Small and Medium Scale Farmers Growing Coffee by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	0	0	496	0	45	0	0	0	0	0
Copperbelt	0	0	0	0	0	0	0	19	0	0
Eastern	0	0	0	0	0	0	0	0	0	195
Luapula	0	0	0	0	0	0	0	0	0	0
Lusaka	0	0	0	0	0	0	0	0	0	0
Muchinga										0
Northern	0	0	0	334	0	0	0	0	59	0
NorthWestern	0	0	0	0	0	0	0	0	0	0
Southern	0	0	0	0	0	0	0	0	94	0
Western	0	0	0	0	0	0	0	0	0	0
National	0	0	496	334	45	0	0	19	154	195

Number of Small and Medium Scale Farmers Growing Sweet Potatoes by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	44,171	23,254	27,970	48,278	43,358	37,910	47,800	50,370	32,374	28,836
Copperbelt	36,505	19,762	29,049	26,778	20,639	21,002	34,192	39,986	19,580	22,291
Eastern	15,268	5,092	5,626	11,427	11,389	12,115	13,014	8,066	4,990	8,126
Luapula	24,922	13,815	17,146	7,237	20,664	30,336	38,128	32,144	17,617	23,105
Lusaka	3,955	3,768	1,951	4,766	3,053	2,313	9,340	5,451	3,152	4,303
Muchinga										29,199
Northern	43,754	52,116	41,099	34,303	35,815	43,266	45,515	58,037	51,741	30,483
NorthWestern	21,304	22,934	20,295	7,129	14,047	19,889	20,159	13,292	14,268	9,816
Southern	9,968	10,575	6,569	27,213	5,376	10,629	43,732	44,446	26,026	19,852
Western	8,672	9,412	2,162	5,169	3,168	4,393	7,614	9,264	3,981	3,151
National	208,521	160,727	151,866	172,299	157,508	181,852	259,494	261,055	173,727	179,162

Number of Small and Medium Scale Farmers Growing Cassava by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	30,349	20,144	19,137	22,485	25,274	26,178	24,838	22,832	23,778	22,193
Copperbelt	17,106	14,552	13,773	15,351	11,054	10,953	13,546	11,257	6,271	9,108
Eastern	23,109	10,035	11,920	11,569	10,708	11,234	9,829	6,333	3,354	6,492
Luapula	131,675	134,558	141,617	145,834	149,431	154,613	156,293	157,885	154,296	143,204
Lusaka	3,885	3,179	2,160	2,155	2,787	2,401	2,052	1,771	1,524	1,128
Muchinga										54,097
Northern	190,507	203,015	210,702	220,075	201,860	204,327	196,812	210,706	211,399	154,481
NorthWestern	76,006	69,242	77,405	74,488	79,126	84,641	79,323	74,618	65,999	58,012
Southern	11,707	1,800	456	1,662	573	1,435	1,715	3,208	1,512	1,169
Western	84,745	68,448	62,207	68,163	69,090	61,468	71,822	73,640	74,745	80,663
National	569,089	524,973	539,376	561,782	549,903	557,249	556,231	562,249	542,879	530,547

Number of Small and Medium Scale Farmers Growing Paprika by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	1,459	2,108	1,474	516	1,425	867	199	460	83	638
Copperbelt	118	38	144	246	56	0	82	60	66	24
Eastern	1,640	85	0	353	0	0	0	0	20	19
Luapula	0	215	196	108	153	90	107	74	.	51
Lusaka	0	248	90	0	0	0	0	0	28	.
Muchinga										.
Northern	124	411	197	65	9	109	0	406	35	.
NorthWestern	0	160	173	131	26	43	35	28	.	172
Southern	0	57	69	50	215	61	54	0	41	.
Western	177	232	452	675	63	0	0	0	41	34
National	3,518	3,554	2,795	2,143	1,947	1,170	477	1,027	313	937

Maize. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	124,516	134,456	126,977	154,500	192,315	226,567	167,132	204,174	186,882	173,664
Copperbelt	62,081	60,151	58,441	66,965	74,891	72,176	73,746	89,592	97,283	77,089
Eastern	208,621	194,930	200,506	219,000	232,658	249,730	288,934	286,811	307,823	276,444
Luapula	11,586	18,879	14,189	19,849	19,812	23,352	27,844	30,022	43,879	49,963
Lusaka	31,926	28,502	31,563	35,284	34,275	39,399	30,523	38,068	45,514	30,110
Muchinga										63,962
Northern	59,823	64,401	66,547	82,095	101,667	108,474	102,750	114,129	151,488	117,514
NorthWestern	41,565	46,148	47,986	59,403	70,980	66,569	59,868	66,200	72,876	53,412
Southern	137,914	156,702	175,492	165,003	210,944	251,310	237,293	265,275	309,194	324,800
Western	67,638	76,599	79,366	61,372	101,809	138,643	89,860	87,948	96,356	86,706
National	745,670	780,768	801,067	863,472	1,039,350	1,176,221	1,077,950	1,182,217	1,311,295	1,253,664

Sorghum. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	6,729	5,349	5,536	4,613	3,896	4,077	3,611	3,035	1,6719	762
Copperbelt	2,782	3,175	3,552	1,056	1,442	1,113	1,681	1,037	1,553	785
Eastern	3,108	2,865	2,201	2,429	3,918	2,273	2,585	2,307	1,890	13
Luapula	3,945	1,791	1,467	986	1,710	1,349	1,987	1,895	1,188	367
Lusaka	177	395	543	269	229	562	159	195	179	444
Muchinga										2,748
Northern	3,788	4,372	1,244	2,117	415	836	697	3,019	1,210	217
NorthWestern	8,813	7,497	8,851	6,965	4,278	4,912	2,928	3,204	1,668	1,248
Southern	12,112	12,834	17,462	12,124	9,946	9,990	20,125	14,278	13,849	9,269
Western	7,049	21,914	19,093	14,268	9,348	6,438	6,592	4,576	2,660	3,866
National	48,502	60,193	59,947	44,826	35,183	31,551	40,365	33,546	25,867	19,718

Rice. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	109	291	463	0	253	89	262	152	305	3
Copperbelt	4	14	5	11	7	7	30	27	18	31
Eastern	644	3,980	3,827	3,867	3,699	3,175	3,021	4,249	2,650	1,977
Luapula	432	593	696	1,007	1,247	1,320	1,353	1,043	1,192	1,816
Lusaka	0	0	10	8	154	53	99	76	125	65
Muchinga										4,405
Northern	5,884	6,101	6,478	5,938	10,469	12,017	14,110	15,308	14,995	7,860
NorthWestern	0	373	210	54	163	746	863	484	649	240
Southern	0	0	0	3	0	0	13	0	.00	68
Western	4,053	3,025	7,260	1,911	7,751	12,264	11,282	14,503	14,054	13,838
National	11,127	14,377	18,949	12,799	23,743	29,671	31,032	35,841	33,988	39,705

Millet. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	5,063	3,699	2,645	3,664	3,020	4,624	5,373	4,142	2,319	1,482
Copperbelt	177	75	207	285	178	275	402	507	281	110
Eastern	1,512	1,687	1,803	1,999	4,130	1,385	1,753	1,668	1,784	365
Luapula	2,815	1,873	2,752	1,978	2,287	1,479	1,147	1,746	590	1,625
Lusaka	105	99	0	44	4	12	25	12	53	161
Muchinga										7,071
Northern	42,143	35,770	36,020	33,353	36,175	32,193	38,762	31,513	25,957	11,290
NorthWestern	796	1,696	964	845	787	532	770	343	578	274
Southern	4,140	5,710	8,917	9,731	5,019	3,720	4,792	3,980	1,195	4,701
Western	11,296	22,173	14,780	17,819	17,368	12,904	8,532	12,868	9,808	8,038
National	68,048	72,782	68,088	69,717	68,968	57,124	61,556	56,780	42,566	35,118

Sunflower. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	3,892	9,513	3,531	5,924	4,991	2,694	4,953	4,641	1,692	1,654
Copperbelt	6	192	130	96	13	65	60	118	106	131
Eastern	12,794	19,972	18,651	27,663	19,957	30,715	51,135	37,433	26,200	27,402
Luapula	21	107	55	51	17	8	38	42	13.00	40
Lusaka	0	146	99	249	252	92	130	411	7,0.87	127
Muchinga										624
Northern	2,274	2,282	3,557	2,889	3,703	2,241	2,471	5,194	3,015	2,838
NorthWestern	30	50	301	113	56	22	54	36	24	18
Southern	3,908	5,675	5,323	6,170	5,284	4,034	11,704	5,731	8,495	7,386
Western	0	0	25	0	3	47	18	86	22	83
National	22,926	37,937	31,671	43,156	34,276	39,917	70,564	53,691	39,638	40,304

Groundnuts. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	19,024	8,009	10,862	10,586	29,263	24,687	29,465	34,130	30,521	18,353
Copperbelt	5,950	4,087	7,098	5,755	8,431	7,353	10,385	14,746	8,227	7,592
Eastern	65,767	49,289	62,233	38,893	46,476	60,146	74,602	89,036	67,009	55,891
Luapula	18,695	13,248	14,469	18,568	16,228	17,542	20,193	21,196	18,396	18,433
Lusaka	2,589	2,059	3,392	2,608	2,249	3,343	2,300	3,462	3,013	2,296
Muchinga										12,902
Northern	46,234	38,038	38,485	40,478	39,759	38,294	46,461	49,603	42,216	31,524
NorthWestern	6,993	6,946	8,098	8,606	6,436	6,528	6,440	6,459	5,576	5,429
Southern	8,680	14,989	22,415	29,257	30,015	23,847	19,940	37,924	38,216	23,997
Western	4,593	5,297	4,140	2,978	5,175	7,661	5,538	11,021	10,123	4,994
National	178,525	141,962	171,193	157,729	184,034	189,399	215,324	267,578	223,298	181,410

Soyabean. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	3,137	7,547	13,239	9,113	15,515	2,705	6,971	10,312	8,191	4,777
Copperbelt	262	538	1,056	414	686	242	362	1,117	249	843
Eastern	4,767	8,432	13,997	13,675	9,790	6,656	9,792	10,228	7,351	8,615
Luapula	75	192	125	279	323	160	335	210	127	157
Lusaka	141	626	1,739	576	262	81	218	175	211	248
Muchinga										1,415
Northern	4,459	3,255	7,941	7,090	4,274	3,006	3,648	5,712	2,779	1,467
NorthWestern	234	84	301	307	471	348	632	601	317	331
Southern	689	1,332	256	129	161	323	640	455	769	273
Western	0	14	0	87	44	65	20	62	67	218
National	13,765	22,020	38,655	31,669	31,527	13,585	22,618	28,871	20,060	18,343

Cotton. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	28,835	32,804	39,966	54,193	20,212	21,137	15,048	20,342	31,953	67,105
Copperbelt	0	14	32	44	77	25	11	8	36	555
Eastern	62,337	83,621	117,105	90,816	75,150	110,489	73,246	59,282	85,041	190,896
Luapula	0	0	0	0	0	0	0	0	0	0
Lusaka	345	1,393	2,435	2,173	1,305	924	430	174	626	2,043
Muchinga										10,431
Northern	0	0	64	0	287	90	159	12	0	0
NorthWestern	0	84	0	37	17	0	0	0	8	0
Southern	7,689	23,241	33,020	29,508	9,123	15,305	13,803	4,864	13,811	44,382
Western	177	722	962	842	356	273	87	42	214	763
National	99,383	141,878	193,585	177,613	106,528	148,244	102,784	84,724	131,691	316,175

Irish Potatoes. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	0	0	12	7	47	111	90	55	29	143
Copperbelt	0	0	58	148	79	65	40	104	125	30
Eastern	0	0	232	368	8	305	88	287	195	215
Luapula	0	0	0	0	0	8	1	2	10	12
Lusaka	0	0	69	0	5	70	26	12	32	3
Muchinga										37
Northern	0	0	184	54	108	61	111	59	33	25
NorthWestern	0	0	9	236	471	407	70	124	367	455
Southern	0	0	0	8	2	39	142	28	143	12
Western	0	0	0	14	0	0	0	5	4	0
National	0	0	564	835	718	1,065	568	674	938	931

Tobacco. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	56	702	1,881	714	584	1,318	2,742	2,756	4,059	861
Copperbelt	0	0	0	0	0	6	1	64	18	0
Eastern	4,127	9,133	11,545	5,687	1,259	3,205	7,192	6,932	7,899	3,575
Luapula	0	0	0	0	0	0	2	7	0	0
Lusaka	0	0	186	0	0	0	60	0	7	0
Muchinga										46
Northern	0	386	174	56	0	424	444	1,016	403	0
NorthWestern	0	0	37	0	0	0	0	0	56	14
Southern	1,194	567	1,141	580	213	12	1,227	1,205	2,038	2,286
Western	0	336	1,082	2,329	706	1,279	2,124	2,310	3,063	408
National	5,377	11,123	16,046	9,366	2,761	6,244	13,792	14,290	17,542	7,190

Beans. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	6,597	3,558	4,650	6,393	6,200	4,869	8,535	8,117	3,853	5,072
Copperbelt	1,918	1,332	2,648	1,928	1,957	1,736	3,239	3,430	2,436	2,316
Eastern	2,704	2,505	2,515	2,260	1,799	2,314	4,067	3,634	2,571	3,930
Luapula	1,859	3,733	4,331	3,014	3,411	4,089	5,204	5,057	4,131	6,278
Lusaka	677	751	814	585	762	695	362	1,900	811	717
Muchinga										10,147
Northern	29,882	32,161	36,237	40,136	50,784	59,338	54,497	53,423	49,906	60,566
NorthWestern	4,193	9,208	6,997	13,092	4,627	5,968	5,664	5,678	4,703	5,183
Southern	4,491	4,039	1,452	830	1,428	596	824	1,631	275	1,716
Western	188	3,086	835	25	649	973	267	865	1,237	308
National	52,509	60,372	60,480	68,263	71,616	80,577	82,659	83,735	69,923	96,232

Cowpeas. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	1,561	200	628	943	1,042	854	920	1,068	115	402
Copperbelt	298	39	101	59	12	10	177	70	72	30
Eastern	32	353	21	172	236	649	259	274	37	158
Luapula	12	52	0	48	15	6	107	69	18	45
Lusaka	30	175	204	566	162	71	221	8	56	53
Muchinga										189
Northern	137	4,601	167	178	769	174	450	264	239	93
NorthWestern	105	124	182	126	26	169	58	12	5	0
Southern	4,506	4,601	4,329	5,253	1,998	2,354	10,054	3,199	1,008	1,875
Western	577	1,299	624	658	917	396	510	1,341	392	2,297

Velvet Beans. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	0	0	67	0	0	0	34	47	23	0
Copperbelt	0	0	28	0	0	0	0	0	0	0
Eastern	0	0	0	0	44	0	2	0	35	0
Luapula	0	0	0	0	0	9	3	0	3	0
Lusaka	0	0	2	9	0	0	0	375	0	4
Muchinga										0
Northern	0	0	0	762	1	0	0	32	2	0
NorthWestern	0	0	0	0	12	0	0	0	0	4
Southern	0	0	12	0	0	1	315	161	0	158
Western	0	0	0	21	0	0	0	0	0	0
National	0	0	109	792	58	11	355	615	63	166

Coffee. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	0	0	30	0	45	0	0	0	0	0
Copperbelt	0	0	0	0	0	0	0	9	0	0
Eastern	0	0	0	0	0	0	0	0	0	79
Luapula	0	0	0	0	0	0	0	0	0	0
Lusaka	0	0	0	0	0	0	0	0	0	0
Muchinga										0
Northern	0	0	0	21	0	0	0	0	12	0
NorthWestern	0	0	0	0	0	0	0	0	0	0
Southern	0	0	0	0	0	0	0	0	17	0
Western	0	0	0	0	0	0	0	0	0	0
National	0	0	30	21	45	0	0	9	29	79

Sweet Potatoes. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	12,372	7,681	6,962	12,397	14,519	11,726	14,598	19,097	9,848	8,825
Copperbelt	11,429	4,750	7,314	6,155	6,038	4,948	8,280	11,110	4,520	5,137
Eastern	4,316	1,090	863	2,420	2,588	2,590	3,220	2,091	1,682	1,873
Luapula	3,449	2,648	2,303	1,078	2,876	4,844	5,631	4,624	2,638	3,937
Lusaka	654	753	483	1,137	557	645	1,553	1,470	626	1,167
Muchinga										5,680
Northern	8,282	10,181	6,665	6,061	8,538	9,293	11,622	13,365	11,509	7,159
NorthWestern	4,613	4,715	3,227	1,355	2,886	3,179	3,280	2,303	2,462	1,567
Southern	2,688	3,219	1,581	6,242	1,614	3,678	14,007	13,350	10,849	5,580
Western	1,808	1,941	626	1,180	887	1,219	1,778	2,384	926	601
National	49,611	36,977	30,024	38,025	40,504	42,120	63,970	69,794	45,059	41,526

Cassava. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	14,032	10,640	11,019	10,048	11,786	17,226	13,211	14,667	10,041	13,807
Copperbelt	5,118	5,197	4,551	4,662	3,806	3,952	3,669	3,076	1,867	2,771
Eastern	6,750	2,588	2,650	3,242	2,367	2,151	2,477	1,499	759	1,463
Luapula	103,310	117,316	121,185	121,039	110,496	133,586	109,756	125,633	131,193	123,086
Lusaka	1,440	1,589	757	859	795	1,021	602	343	508	273
Muchinga										36,621
Northern	130,163	155,442	173,766	177,971	143,508	139,810	160,724	151,029	138,126	119,745
NorthWestern	49,737	42,247	46,259	41,264	47,032	52,482	54,501	54,105	47,203	41,991
Southern	2,964	598	227	392	193	447	574	682	329	343
Western	51,878	36,515	39,169	39,190	44,335	39,278	47,418	52,183	56,582	49,151
National	365,393	372,132	399,582	398,667	364,317	389,953	392,933	403,217	386,608	389,250

Paprika. Area Cultivated by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	438	732	435	134	882	256	94	145	21	480
Copperbelt	15	4	31	75	25	0	13	6	18	3
Eastern	433	21	0	57	0	0	0	0	2	5
Luapula	0	38	37	21	19	15	7	6	.	3
Lusaka	0	35	29	0	0	0	0	0	22	.
Muchinga										.
Northern	15	67	30	4	1	17	0	59	4	.
NorthWestern	0	16	11	8	4	11	2	2	.	11
Southern	0	23	26	10	63	23	14	0	5	.
Western	44	170	128	159	24	0	0	0	8	11
National	945	1,107	728	469	1,017	322	130	218	81	513

Maize. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	226,991	375,242	96,855	281,153	382,366	355,426	289,283	526,315	426,629	441,444
Copperbelt	88,827	109,804	66,493	122,391	121,890	129,358	124,095	182,016	213,913	176,225
Eastern	263,190	285,726	163,380	306,319	247,226	336,785	392,068	531,810	575,850	569,407
Luapula	19,520	27,849	23,026	42,635	30,944	45,427	56,270	67,919	123,678	137,459
Lusaka	43,197	53,215	16,025	54,703	57,436	32,951	45,377	89,586	87,031	72,526
Muchinga										209,458
Northern	101,632	120,246	105,540	141,442	187,263	230,609	257,199	306,330	504,915	329,652
NorthWestern	62,964	73,072	54,350	98,057	88,456	99,832	98,447	129,237	150,350	125,452
Southern	121,179	258,069	93,807	249,428	259,222	115,568	339,641	541,507	611,912	599,173
Western	42,816	61,618	28,434	38,167	45,993	46,223	54,738	88,804	92,617	71,047
National	970,317	1,364,841	647,909	1,334,296	1,420,798	1,392,180	1,657,117	2,463,523	2,786,896	2,731,843

Sorghum. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	4,109	5,979	2,593	2,199	1,575	1,366	2,728	2,406	1,306	666
Copperbelt	1,719	2,362	2,460	592	629	486	806	829	1,388	580
Eastern	1,982	1,460	556	1,390	1,695	1,271	1,986	2,409	2,392	7
Luapula	2,029	1,519	809	912	1,282	1,214	1,866	1,421	1,061	359
Lusaka	130	161	56	116	22	120	38	354	87	253
Muchinga										2,833
Northern	2,081	2,909	947	1,482	206	670	576	2,416	876	166
NorthWestern	6,768	8,088	7,253	4,390	2,549	3,051	2,586	2,237	1,282	854
Southern	3,276	4,032	1,519	2,917	3,087	3,028	8,352	10,340	8,016	10,658
Western	2,564	5,999	4,849	3,741	2,626	2,089	2,690	3,043	1,467	1,391
National	24,658	32,509	21,042	17,739	13,671	13,295	21,629	25,455	17,874	17,767

Rice. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	80	359	79	0	314	7	259	57	610	10
Copperbelt	2	8	0	13	4	6	34	37	43	55
Eastern	586	2,377	2,576	4,121	2,940	2,935	5,120	5,779	4,418	2,206
Luapula	450	570	1,027	1,488	1,236	2,295	3,311	1,885	2,652	4,234
Lusaka	0	0	3	3	15	17	156	115	204	47
Muchinga										7,752
Northern	7,208	5,769	5,867	6,980	13,606	18,157	20,992	28,653	25,906	12,388
NorthWestern	0	362	182	100	119	704	945	723	814	526
Southern	0	0	0	1	0	0	25	.	0	44
Western	1,307	1,844	2,272	1,665	5,348	6,121	11,088	14,407	14,756	16,064
National	9,632	11,290	12,005	14,370	23,582	30,243	41,929	51,656	49,404	43,326

Millet. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	2,914	1,972	781	2,306	1,704	2,135	3,399	2,255	2,150	1,448
Copperbelt	130	38	63	294	117	284	430	389	118	182
Eastern	923	725	669	1,420	1,738	722	641	1,321	1,611	122
Luapula	2,104	2,034	2,082	1,432	1,320	2,035	753	1,702	544	1,995
Lusaka	52	28	0	19	1	0	9	0	24	208
Muchinga										6,990
Northern	31,758	36,422	28,870	28,542	14,529	34,479	38,082	34,495	27,979	13,022
NorthWestern	525	1,154	390	642	546	405	917	418	547	383
Southern	915	1,927	1,324	1,809	1,415	874	2,259	1,936	722	2,834
Western	3,103	6,117	1,748	4,415	4,486	3,317	2,445	5,476	3,955	2,182
National	42,424	50,417	35,927	40,879	25,857	44,253	48,936	47,992	37,650	29,366

Sunflower. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	1,616	5,322	762	2,109	1,657	757	1,540	1,879	1,281	901
Copperbelt	4	89	123	16	6	6	22	119	77	48
Eastern	5,423	7,826	5,330	11,590	6,869	12,271	24,597	18,315	13,552	12,807
Luapula	9	31	36	19	8	4	18	15	5	34
Lusaka	0	61	17	69	51	57	100	175	32	76
Muchinga										466
Northern	1,010	722	1,680	1,283	1,073	1,033	1,262	2,100	2,095	1,569
NorthWestern	12	28	113	65	23	33	34	14	10	15
Southern	1,253	2,249	575	1,444	1,011	541	4,884	2,458	2,968	3,686
Western	0	0	3	0	1	21	10	51	6	25
National	9,327	16,329	8,639	16,596	10,699	14,724	32,466	25,126	20,026	19,626

Groundnuts. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	11,851	3,127	3,666	4,622	12,171	13,846	15,785	19,687	16,684	11,713
Copperbelt	3,407	2,594	3,785	3,048	3,264	4,430	6,420	9,471	6,068	4,545
Eastern	38,077	29,770	20,676	15,395	16,058	25,222	35,939	49,854	29,535	30,014
Luapula	9,935	8,903	10,624	9,493	7,326	11,321	12,535	13,776	11,445	14,514
Lusaka	1,191	996	449	1,113	719	792	1,581	1,719	1,407	1,112
Muchinga										9,935
Northern	28,172	22,504	28,004	21,686	16,222	33,027	30,055	34,858	30,994	18,179
NorthWestern	4,825	5,639	6,770	4,914	2,892	4,155	4,476	5,229	4,605	6,668
Southern	1,966	6,396	5,535	7,630	7,810	3,768	10,369	23,024	32,652	9,959
Western	1,575	1,816	1,690	1,361	1,549	1,615	2,713	6,120	5,499	2,145
National	100,998	81,745	81,198	69,262	68,012	98,176	119,872	163,738	138,889	108,784

Soyabean. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	2,151	4,574	5,315	5,871	8,785	1,431	4,809	10,629	6,929	3,953
Copperbelt	183	357	1,204	277	391	174	388	1,195	183	914
Eastern	2,615	5,112	13,446	10,844	5,996	5,138	6,695	7,847	7,260	5,427
Luapula	47	85	112	152	196	159	252	166	90	175
Lusaka	52	319	676	455	163	27	149	107	182	511
Muchinga										1,195
Northern	2,491	1,338	5,602	5,118	2,497	1,898	2,640	5,095	2,144	969
NorthWestern	145	37	250	146	293	263	549	613	549	342
Southern	78	646	66	53	67	41	392	474	1,081	161
Western	0	1	0	37	29	17	11	39	92	85
National	7,762	12,469	26,671	22,953	18,416	9,149	15,884	26,165	18,510	13,732

Cotton. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	28,936	26,030	25,678	69,548	10,921	9,760	9,295	17,218	27,554	52,151
Copperbelt	0	9	53	23	9	27	7	6	40	709
Eastern	57,672	90,244	77,232	76,759	47,739	76,368	65,707	49,568	83,836	159,712
Luapula	0	0	0	0	0	0	0	.	0	0
Lusaka	219	997	2,333	2,131	777	325	293	241	419	1,812
Muchinga										16,790
Northern	0	0	29	0	277	81	148	4	0	0
NorthWestern	0	16	0	32	5	0	0	.	1	0
Southern	6,982	29,780	15,491	21,814	4,245	4,692	10,734	5,004	90,671	36,818
Western	255	235	528	418	139	334	94	29	474	909
National	94,063	147,310	121,344	170,724	64,110	91,588	86,277	72,068	121,392	268,902

Irish Potatoes. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	0	0	8	1	30	134	103	70	9	91
Copperbelt	0	0	49	328	71	166	69	389	383	77
Eastern	0	0	460	448	3	639	231	881	273	274
Luapula	0	0	0	0	0	11	3	3	17	36
Lusaka	0	0	33	0	15	248	63	9	62	6
Muchinga										85
Northern	0	0	71	84	106	114	437	86	42	22
NorthWestern	0	0	32	893	699	1,268	247	609	963	1,687
Southern	0	0	0	56	6	15	158	16	262	60
Western	0	0	0	35	0	0	0	7	9	0
National	0	0	652	1,844	930	2,595	1,311	2,071	2,020	2,337

Tobacco. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	53	553	1,563	567	378	1,084	2,780	3,664	4,700	919
Copperbelt	0	0	0	0	0	4	0	29	2	0
Eastern	3,945	8,523	8,437	5,621	1,108	4,291	8,396	7,469	10,122	4,832
Luapula	0	0	0	0	0	0	1	9	0	0
Lusaka	0	0	172	0	0	0	48	0	2	0
Muchinga										71
Northern	0	260	161	58	0	188	324	698	141	0
NorthWestern	0	0	7	0	0	0	0	0	130	7
Southern	1,036	920	1,008	571	104	16	679	1,133	1,976	6,919
Western	0	777	1,932	2,615	736	3,975	2,990	1,762	3,427	430
National	5,034	11,033	13,280	9,431	2,325	9,558	15,219	14,763	20,500	13,178

Beans. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	4,362	9,530	1,819	5,195	4,113	3,823	6,290	17,017	2,561	3,352
Copperbelt	807	519	879	1,263	554	903	2,305	3,630	1,368	1,477
Eastern	6,156	8,905	6,103	12,572	7,860	13,878	26,534	20,085	1,409	2,173
Luapula	880	2,109	2,248	1,851	2,744	3,057	5,899	3,441	2,951	3,815
Lusaka	221	336	152	339	266	315	268	1,592	358	642
Muchinga										5,784
Northern	18,562	13,140	19,680	19,704	25,901	49,894	32,076	40,655	33,363	37,746
NorthWestern	2,643	4,572	4,332	8,100	1,869	4,113	3,772	4,536	3,145	3,814
Southern	2,779	4,187	676	2,053	1,601	646	5,744	3,505	110	904
Western	44	749	223	59	306	414	510	874	291	128
National	36,454	44,047	36,112	51,135	45,215	77,042	83,397	95,333	45,557	59,835

Cowpeas. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	616	90	293	347	449	883	644	499	46	235
Copperbelt	83	9	144	48	2	1	143	94	8	50
Eastern	12	201	5	105	27	528	174	96	23	44
Luapula	4	20	0	2	14	6	42	38	10	15
Lusaka	4	86	54	116	50	24	82	4	24	16
Muchinga										62
Northern	55	2,067	27	36	259	141	190	204	105	91
NorthWestern	57	70	106	31	27	61	34	3	2	0
Southern	1,351	1,306	582	1,659	399	389	5,720	1,110	958	493
Western	276	381	89	242	218	134	273	604	139	1,181
National	2,457	4,230	1,299	2,587	1,444	2,165	7,301	2,652	1,313	2,188

Coffee. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	0	0	0	0	27	0	0	0	0	0
Copperbelt	0	0	0	0	0	0	0	2	0	0
Eastern	0	0	0	0	0	0	0	0	0	176
Luapula	0	0	0	0	0	0	0	0	0	0
Lusaka	0	0	0	0	0	0	0	0	0	0
Muchinga										0
Northern	0	0	0	20	0	0	0	0	15	0
NorthWestern	0	0	0	0	0	0	0	0	0	0
Southern	0	0	0	0	0	0	0	0	19	0
Western	0	0	0	0	0	0	0	0	0	0
National	0	0	0	20	27	0	0	2	34	176

Sweet Potatoes. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	39,333	23,825	12,794	40,577	38,446	38,783	48,196	75,050	32,662	47,713
Copperbelt	36,558	14,139	21,381	22,639	18,512	18,214	32,334	53,954	18,587	19,257
Eastern	11,203	2,850	1,621	8,005	7,604	7,745	10,543	5,077	4,944	4,129
Luapula	9,955	4,898	7,072	3,312	6,791	18,488	16,910	15,779	10,320	14,877
Lusaka	1,634	2,201	270	3,049	1,439	1,667	5,132	7,050	2,693	3,417
Muchinga										21,827
Northern	22,226	26,846	22,184	17,534	18,814	29,847	38,275	49,102	40,281	23,075
NorthWestern	17,563	8,827	7,627	3,650	8,987	14,114	14,858	12,281	9,837	8,561
Southern	3,599	3,763	1,261	10,695	2,613	3,330	28,914	27,175	22,868	13,895
Western	3,346	4,653	2,172	2,731	1,704	2,357	4,328	4,879	4,028	2,080
National	145,417	92,002	76,381	112,192	104,911	134,544	199,490	250,347	146,218	158,830

Cassava. Estimated Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	21,467	56,727	59,895	36,891	31,091	32,160	59,033	60,430	16,608	48,014
Copperbelt	10,083	26,460	18,820	20,899	18,891	13,019	9,488	10,568	4,873	9,783
Eastern	11,942	13,132	12,355	9,340	11,694	4,294	7,989	5,322	2,644	5,439
Luapula	302,942	526,422	633,917	549,943	556,140	386,175	356,781	423,793	425,899	363,228
Lusaka	544	9,283	3,888	3,845	3,093	1,187	1,812	1,135	999	261
Muchinga										106,649
Northern	336,612	671,395	707,836	736,859	610,428	297,455	466,469	468,842	307,659	363,639
NorthWestern	174,994	177,766	203,287	183,281	222,970	121,173	145,776	143,571	111,987	113,747
Southern	6,702	2,955	590	1,118	1,166	1,219	2,924	1,262	1,754	1,124
Western	219,327	200,496	196,974	215,915	251,420	130,164	194,026	133,638	225,275	215,467
National	1,084,613	1,684,635	1,837,561	1,758,092	1,706,894	986,848	1,244,298	1,248,561	1,097,697	1,227,352

Paprika. Production in Metric Tons by Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	203	913	278	54	290	335	18	22	3	65
Copperbelt	6	1	7	36	10	0	6	9	31	1
Eastern	127	11	0	10	0	0	0	0	1	2
Luapula	0	9	20	12	7	10	2	2	.	0
Lusaka	0	18	5	0	0	0	0	0	4	.
Muchinga										.
Northern	3	2	3	1	1	4	0	15	6	.
NorthWestern	0	3	0	4	1	4	2	1	.	38
Southern	0	9	0	1	14	0	1	0	0	.
Western	13	51	60	42	18	0	0	0	3	.
National	352	1,017	374	161	341	353	28	49	49	105

Maize. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	1,889	2,923	736	1,657	1,826	1,588	1,683	2,496	2,285	2,514
Copperbelt	1,424	1,828	1,257	1,940	1,741	1,881	1,768	2,289	2,237	2,257
Eastern	1,259	1,498	900	1,394	1,075	1,291	1,333	1,878	1,841	2,002
Luapula	1,409	1,491	1,651	1,738	1,374	1,796	1,807	2,118	2,444	2,509
Lusaka	1,332	1,828	541	1,439	1,501	784	1,459	2,255	1,881	2,248
Muchinga										3,149
Northern	1,708	1,969	1,717	1,771	1,859	2,167	2,570	2,798	3,195	2,853
NorthWestern	1,549	1,589	1,171	1,413	1,133	1,357	1,473	1,869	1,985	2,292
Southern	846	1,625	587	1,455	1,283	533	1,385	1,915	1,853	1,736
Western	739	1,009	422	662	527	388	661	1,111	1,126	901
National	1,318	1,744	951	1,469	1,328	1,294	1,564	2,082	2,133	2,163

Sorghum. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	696	1,172	380	540	373	452	812	776	799	1,146
Copperbelt	618	928	729	660	509	666	538	942	749	843
Eastern	663	639	382	487	485	653	838	1,150	1,459	552
Luapula	608	1,042	554	911	737	1,182	941	813	1,024	1,072
Lusaka	851	459	119	504	77	291	315	759	517	539
Muchinga										1,095
Northern	575	919	811	698	542	808	979	1,128	947	1,012
NorthWestern	832	1,266	829	659	606	628	871	765	957	695
Southern	336	376	143	319	337	328	561	763	674	1,074
Western	396	448	342	346	315	300	485	697	617	486
National	557	744	429	467	420	501	669	851	844	904

Rice. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	1,251	940	340	.	1,345	258	988	434	1,760	3,397
Copperbelt	481	555	240	1,873	548	786	1,422	2,241	3,127	1,936
Eastern	727	760	702	1,271	883	1,001	1,838	1,572	1,953	1,149
Luapula	1,056	984	1,480	1,351	1,182	1,854	2,445	1,974	2,346	1,951
Lusaka	.	.	433	536	109	465	1,682	1,650	1,486	983
Muchinga										2,126
Northern	1,045	1,389	1,106	1,541	1,050	1,624	1,589	2,027	1,688	1,717
NorthWestern	.	960	858	1,390	1,221	1,193	1,269	1,355	1,364	1,842
Southern	.	.	.	480	.	.	1,965	.	.	607
Western	410	710	454	905	652	577	951	1,348	1,198	1,328
National	830	1,022	783	1,307	900	1,163	1,475	1,690	1,614	1,604

Millet. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	629	519	347	653	599	619	686	602	999	1,019
Copperbelt	804	639	452	981	703	1,059	859	1,549	541	1,721
Eastern	742	462	426	653	441	581	450	966	997	313
Luapula	837	1,128	758	714	596	1,449	741	1,060	1,139	1,442
Lusaka	638	257	.	365	383	27	319	17	507	1,087
Muchinga										1,202
Northern	780	1,305	933	942	453	1,307	1,200	1,271	1,274	1,334
NorthWestern	597	765	431	844	710	1,016	1,505	1,513	981	1,432
Southern	285	474	198	204	317	292	621	786	872	645
Western	304	302	165	303	330	350	379	518	464	382
National	675	961	665	702	443	1,030	993	1,075	1,110	1,088

Sunflower. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	518	743	265	369	351	397	405	515	782	765
Copperbelt	741	605	1,201	213	439	150	500	597	677	541
Eastern	431	408	350	437	376	484	542	582	613	524
Luapula	444	318	608	447	380	428	510	283	394	903
Lusaka	.	478	266	317	273	945	872	497	510	947
Muchinga										801
Northern	564	426	516	462	333	568	677	502	1,062	625
NorthWestern	389	759	484	634	342	1,847	545	411	423	809
Southern	362	477	89	260	208	122	544	479	466	614
Western	.	.	185	.	412	286	508	665	486	330
National	451	462	358	422	356	475	546	557	659	561

Groundnuts. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	683	671	420	443	440	618	623	661	746	728
Copperbelt	606	678	686	568	444	742	750	723	802	679
Eastern	593	662	377	435	366	457	518	670	492	578
Luapula	553	693	818	533	489	715	697	698	678	875
Lusaka	544	510	147	407	321	397	903	582	511	692
Muchinga										909
Northern	614	753	835	606	424	834	743	832	943	637
NorthWestern	795	859	930	593	472	868	790	900	959	952
Southern	250	473	274	309	298	202	704	768	948	497
Western	371	487	500	453	311	300	539	714	643	545
National	583	677	582	495	401	589	652	731	744	685

Soyabean. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	704	706	480	600	545	677	832	1,027	1,042	1,113
Copperbelt	604	630	982	570	584	762	1,064	1,146	770	1,297
Eastern	508	735	823	792	620	788	742	889	981	729
Luapula	603	383	1,119	462	653	1,075	828	844	657	1,138
Lusaka	349	593	439	717	378	522	801	612	704	1,190
Muchinga										750
Northern	616	480	653	693	624	735	839	1,010	814	698
NorthWestern	672	441	681	523	626	742	1,204	965	1,695	1,220
Southern	124	178	275	208	370	151	1,074	1,038	992	605
Western	.	100	.	325	649	296	554	568	1,310	404
National	573	622	665	697	601	746	826	976	957	833

Cotton. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	1,316	961	755	1,289	534	586	702	950	988	895
Copperbelt	.	704	1,720	367	253	1,280	593	1,626	1,104	2,496
Eastern	1,023	1,179	741	843	659	877	977	999	1,132	917
Luapula	.	.	.	.	.	.	.	.	.	.
Lusaka	728	812	1,080	1,070	599	494	977	1,351	536	1,021
Muchinga										1,734
Northern	.	.	603	.	976	773	1,004	305	.	.
NorthWestern	.	222	.	867	268	.	.	.	100	.
Southern	1,176	1,187	511	764	480	338	854	1,002	755	865
Western	1,440	393	464	452	387	1,225	1,081	686	1,903	1,425
National	1,092	1,131	713	928	631	788	932	992	1,071	961

Irish Potatoes. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	.	.	624	120	698	1,911	1,859	2,584	306	1,381
Copperbelt	.	.	870	3,647	1,323	2,614	2,105	3,610	2,708	3,186
Eastern	.	.	1,869	1,208	408	2,011	3,133	3,649	1,346	1,493
Luapula	.	.	.	.	.	1,428	3,264	1,632	1,685	3,558
Lusaka	.	.	623	.	3,274	5,830	2,272	756	3,048	2,364
Muchinga										2,158
Northern	.	.	363	1,507	685	2,394	4,754	1,628	1,200	832
NorthWestern	.	.	3,712	3,913	1,525	3,469	3,999	5,067	2,495	4,746
Southern	.	.	.	6,934	3,940	383	1,438	858	1,939	5,175
Western	.	.	.	2,448	.	.	.	1,520	2,519	.
National	.	.	1,464	2,667	1,371	2,635	2,993	3,563	2,147	3,498

Tobacco. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	954	1,093	904	889	644	847	1,439	1,581	1,288	1,006
Copperbelt	.	.	.	.	.	564	775	1,683	1,436	.
Eastern	1,014	1,040	757	1,031	970	1,818	1,222	1,238	1,404	1,274
Luapula	.	.	.	.	.	.	400	1,330	.	.
Lusaka	.	.	922	.	.	.	800	.	328	.
Muchinga										2,224
Northern	.	727	1,159	794	.	663	864	682	455	.
NorthWestern	.	.	800	.	.	.	.	.	2,303	517
Southern	983	1,510	1,266	1,039	634	1,333	604	861	907	864
Western	.	2,382	1,883	1,393	1,112	3,793	1,726	1,109	1,418	1,109
National	1,010	1,082	852	1,063	913	1,852	1,257	1,207	1,294	1,166

Beans. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	661	2,678	391	813	663	785	737	2,096	800	815
Copperbelt	421	390	332	655	283	520	712	1,058	622	680
Eastern	2,277	3,555	2,427	5,563	4,369	5,997	6,524	5,527	666	617
Luapula	473	565	519	614	804	748	1,134	680	698	601
Lusaka	326	447	187	579	349	453	740	838	525	1,883
Muchinga										648
Northern	621	409	543	491	510	841	589	761	734	700
NorthWestern	630	497	619	619	404	689	666	799	1,017	817
Southern	619	1,037	466	2,473	1,121	1,084	6,971	2,149	586	504
Western	234	243	267	2,360	471	425	1,910	1,010	483	396
National	694	730	597	749	631	956	1,009	1,139	741	697

Cowpeas. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	435	439	716	591	445	1,093	840	651	518	607
Copperbelt	322	193	1,328	782	340	72	766	1,939	156	1,926
Eastern	360	643	216	561	117	498	728	387	644	322
Luapula	288	402	.	40	880	1,168	393	537	534	377
Lusaka	120	500	252	236	273	346	654	218	422	306
Muchinga										430
Northern	409	556	493	532	371	972	430	1,036	485	958
NorthWestern	440	590	590	266	1,397	472	608	270	356	.
Southern	308	339	250	343	192	195	795	453	825	347
Western	414	398	189	370	300	370	664	608	510	627
National	350	441	342	386	285	489	748	567	605	514

Coffee. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	.	.	.	.	600	.	.	.	.	.
Copperbelt	.	.	.	.	.	.	.	200	.	.
Eastern	.	.	.	.	.	.	.	.	.	2,222
Luapula	.	.	.	.	.	.	.	.	.	.
Lusaka	.	.	.	.	.	.	.	.	.	.
Muchinga										
Northern	.	.	.	960	.	.	.	.	1,473	.
NorthWestern	.	.	.	.	.	.	.	.	.	.
Southern	.	.	.	.	.	.	.	.	1,111	.
Western	.	.	.	.	.	.	.	.	.	.
National	.	.	.	960	600	.	.	200	1,251	2,222

Sweet Potatoes. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	3,920	3,023	2,211	3,048	2,856	3,813	3,710	4,221	4,408	6,951
Copperbelt	3,426	3,730	3,857	4,097	3,392	4,441	5,379	5,461	4,275	5,060
Eastern	2,807	2,555	2,415	3,217	2,949	2,834	4,129	2,622	5,020	2,415
Luapula	3,527	3,263	3,976	3,522	2,573	4,203	3,368	3,729	4,350	4,192
Lusaka	2,956	3,892	555	3,031	2,693	2,459	4,309	4,643	5,698	3,592
Muchinga										4,640
Northern	3,059	3,566	3,962	3,291	2,662	4,579	3,744	4,217	4,832	4,406
NorthWestern	3,860	2,483	2,790	3,358	3,290	5,223	5,202	6,163	4,955	7,078
Southern	1,730	1,783	1,220	1,988	1,672	1,254	2,572	2,825	3,994	5,322
Western	1,596	2,914	3,368	2,609	1,882	2,387	2,332	2,435	4,278	3,172
National	3,299	3,146	3,216	3,122	2,827	4,020	3,812	4,105	4,534	5,024

Cassava. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	1,445	4,795	5,747	3,529	2,644	1,697	4,196	3,634	1,635	3,242
Copperbelt	2,040	4,721	4,972	4,792	4,770	2,897	2,452	3,019	2,199	2,656
Eastern	2,164	4,700	5,263	3,200	4,707	1,944	3,082	2,688	2,406	3,133
Luapula	2,829	4,415	5,242	4,606	5,083	2,912	3,177	3,120	2,949	2,491
Lusaka	758	6,103	4,516	4,735	4,200	2,333	2,763	3,000	2,563	926
Muchinga										2,534
Northern	2,317	4,115	4,301	3,929	3,999	2,096	2,618	2,857	1,901	2,665
NorthWestern	3,312	4,153	4,182	4,082	4,695	2,287	2,515	2,252	2,053	2,394
Southern	1,448	5,833	2,333	3,000	4,667	1,500	4,667	2,625	3,111	1,948
Western	3,970	5,181	5,474	5,219	5,345	3,264	3,238	2,829	3,784	3,928
National	2,683	4,417	4,776	4,265	4,558	2,497	2,887	2,853	2,486	2,845

Paprika. Average Yields (kg) per Hectare Planted for Small and Medium Scale Farmers by Province

Province	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Central	635	1,163	451	348	376	1,404	181	160	146	526
Copperbelt	400	326	464	467	351	.	445	1,407	1,259	360
Eastern	342	505	.	113	.	.	.	.	465	400
Luapula	.	178	551	502	416	516	222	263	.	80
Lusaka	.	457	201	.	.	.	.	.	185	.
Muchinga										.
Northern	200	31	71	185	600	400	.	258	1,318	.
NorthWestern	.	329	.	521	237	400	800	384	.	2,004
Southern	.	370	13	150	189	0	80	.	17	.
Western	300	297	603	249	987	.	.	.	395	.
National	459	792	438	300	376	1,162	269	278	548	626

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