The Future is Urban
Understanding cities in DFID programming

ICED
Infrastructure & Cities
for Economic Development

Why is understanding cities important?
The world is increasingly urban, with 55% of the world's population living in cities. DFID does a lot of programming in cities, promoting economic growth, better governance and social inclusion. However no two cities are alike, and the hugely varied socio-economic pressures and opportunities cities place on the poor. This means that urban poverty differs greatly from rural poverty, and poverty reduction relies on a complex understanding of the highly inter-dependent multiple dimensions of urban poverty – which is turn requires varied programmatic solutions.

How can urban analysis improve outcomes?
An improved understanding of urban poverty and inclusion levers can contribute to more thorough formulation of programming, that truly responds to unique pressures in individual cities. This paper sets out simple analysis that can be undertaken at country-portfolio or programme level to ensure a robust understanding of conditions in individual cities. At portfolio level improved understanding can enable more effective targeting of programming, and can be used to identify areas for synergistic collaboration across interventions. The approach builds on work

done with DFID Zambia to understand 10 very different cities. For more information see papers on ICED website

Structure of the paper
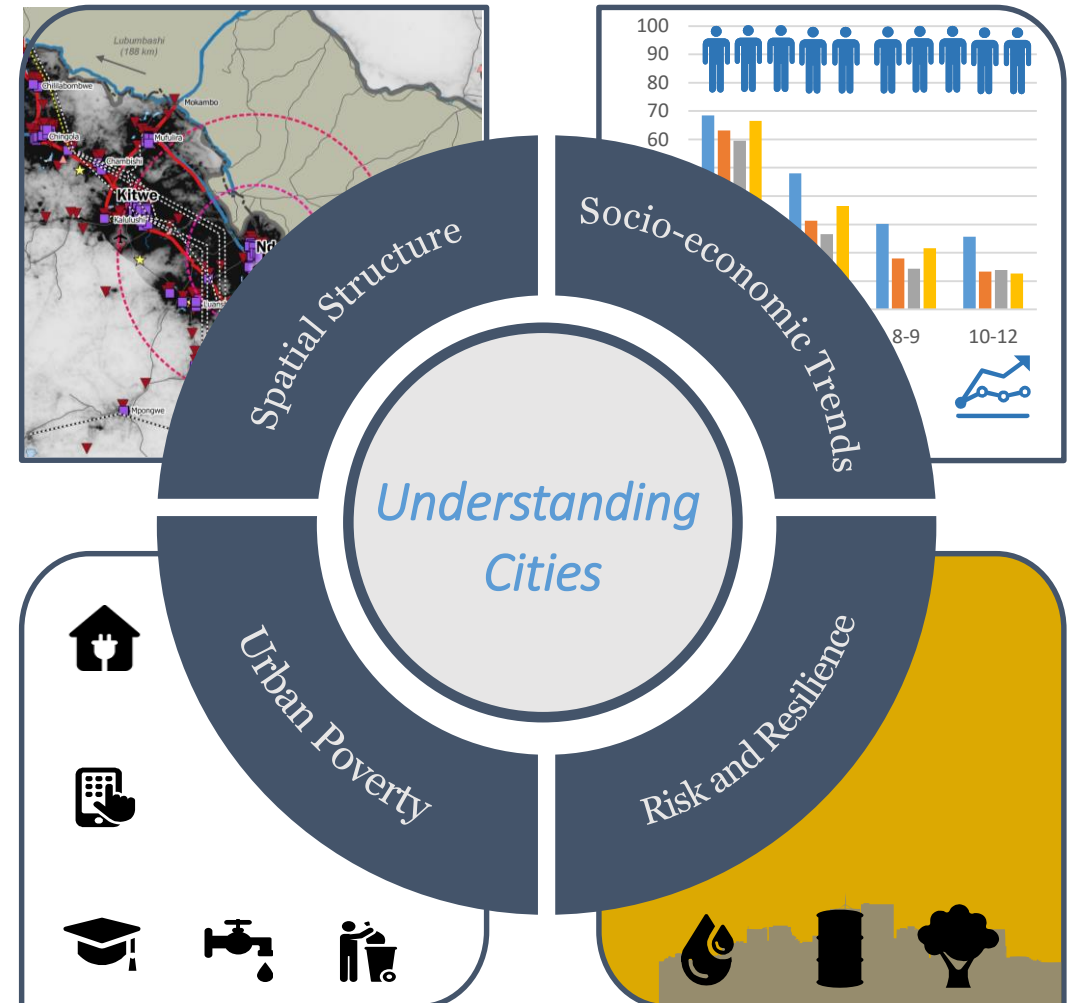The paper sets out critical analysis needed on:
1. Urban spatial structure and its impact on socio-economic dynamics
2. Socio-economic trends and their variation across city typologies
3. Risk and resilience issues in city and how critical management of long term risks is to long term programming success
4. An overview of multi-dimensional poverty, and what this means for programs

For each area the paper sets out:
- Why is this important?
- What you need to know?
- What data you can use?
- How this effects programming

Who should consult this paper?
- ✓ Country office senior management teams responsible for portfolio review and country strategy
- ✓ Anyone who's programmes deliver in an urban context, or whose outcomes rely on urban-rural linkages or services

1. Urban spatial structure

Why is this important?

A city's size, density and spatial connectivity dictates the ability of urban citizens and rural citizens living in urban hinterlands to access jobs and services. Chipata may seem like a mid-sized town of 116,000 people, but it acts as a hub for cross border trade along a dense urban-agricultural corridor home to 1.2m people, and 591,000 people live within 50km of the city. This means that an investments in urban services, education and market connectivity in a town of just over 100k could effect millions.
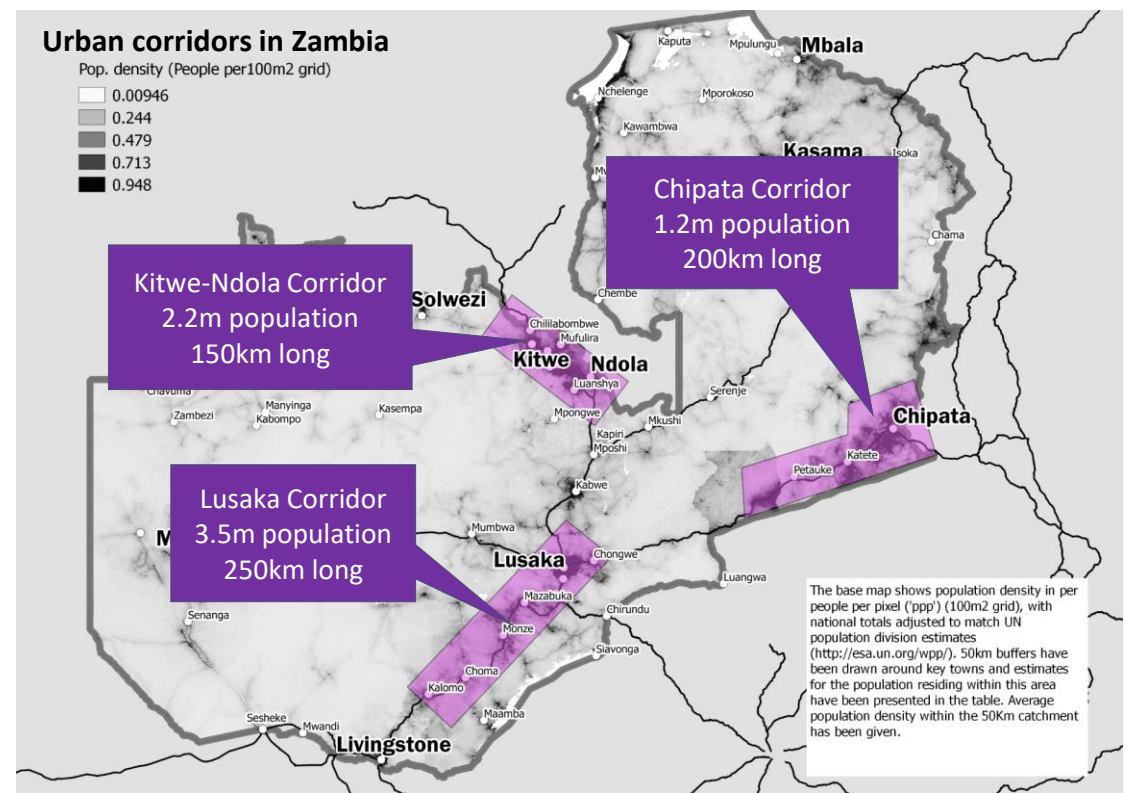
What you need to know?

Mapping all national cities, and those across major borders is key. Urban corridors or clusters of cities should be identified (below left) and city's catchment ratio calculated (below right.)
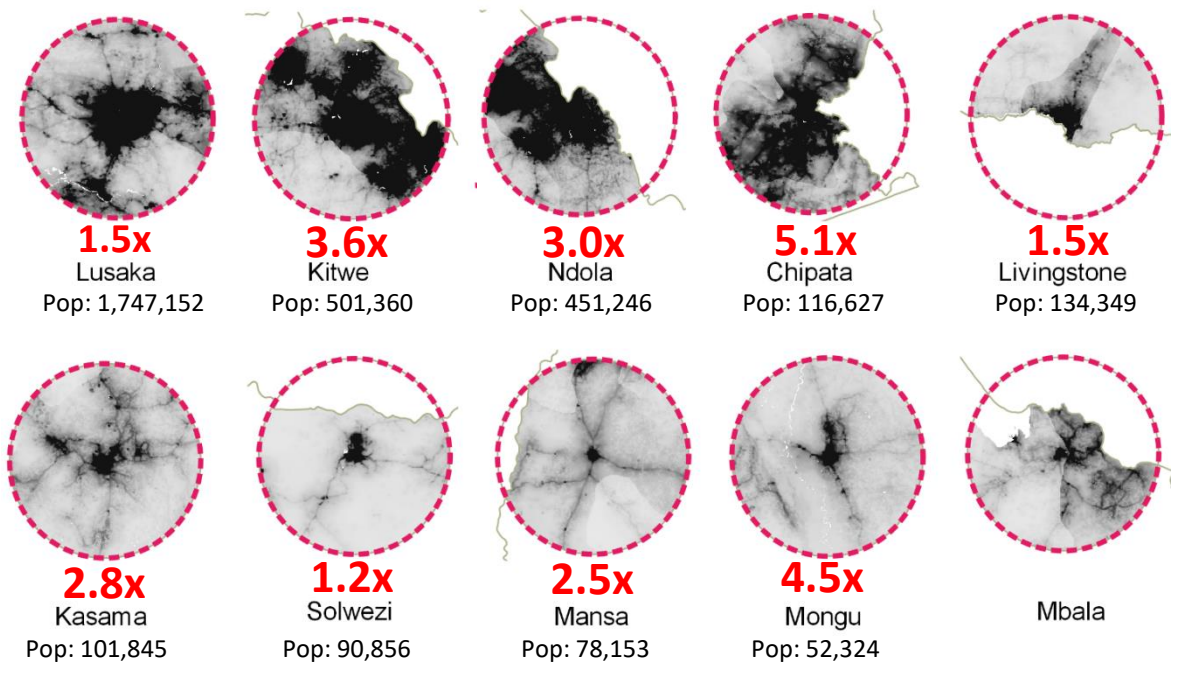
What data you can use?

Most countries have census data on town populations, and granular data on population which can be analyzed using GIS or simple excel models. Visual analysis of national population density maps can also be a useful simple tool to help identify urban clusters and corridors.

How this effects programming

Understanding spatial structure enables more effective targeting of programmes, with the potential for greater impact. Country offices should consider how programmes could be co-ordinated to achieve greater impact in higher density urban corridors, and should consider how to enable beneficiaries in city catchments to benefit from interventions.

Urban corridors in Zambia

Pop. density (People per100m2 grid)

- 0.00946
- 0.244
- 0.479
- 0.713
- 0.948

Chipata Corridor
1.2m population
200km long

Kitwe-Ndola Corridor
2.2m population
150km long

Lusaka Corridor
3.5m population
250km long

The base map shows population density in per people per pixel ('ppp') (100m2 grid), with national totals adjusted to match UN population division estimates (http://esa.un.org/wpp/). 50km buffers have been drawn around key towns and estimates for the population residing within this area have been presented in the table. Average population density within the 50Km catchment has been given.

City populations and catchment ratios

0   50   100 km

1.5x	3.6x	3.0x	5.1x	1.5x
Lusaka	Kitwe	Ndola	Chipata	Livingstone
Pop: 1,747,152	Pop: 501,360	Pop: 451,246	Pop: 116,627	Pop: 134,349

2.8x	1.2x	2.5x	4.5x	
Kasama	Solwezi	Mansa	Mongu	Mbala
Pop: 101,845	Pop: 90,856	Pop: 78,153	Pop: 52,324	

2. Socio-economic structure

Why is this important?
Cities are centres of economic activity. But each city's access to infrastructure services, human and financial capital defines its relative productivity, ability to create job, support entrepreneurs and promote poverty reduction. Understanding the economic pressures and opportunities a city faces is key to identifying opportunities to promote inclusion and prosperity.

What you need to know?
An overview of the predominant economic sectors (both formal and informal), employment by sector, and pressures impacting each sector (e.g. access to energy, water, finance or regulation). In addition a coherent understanding of urban growth rate, and whether this is endogenous or due to inward migration can give a better picture of why and how sectors are growing.

What data you can use?
Regional census population growth and employment data, World Bank Doing Business reports, locally available infrastructure maps, data from local chambers of commerce and specialist economic studies by local academic institutions or donor programmes.
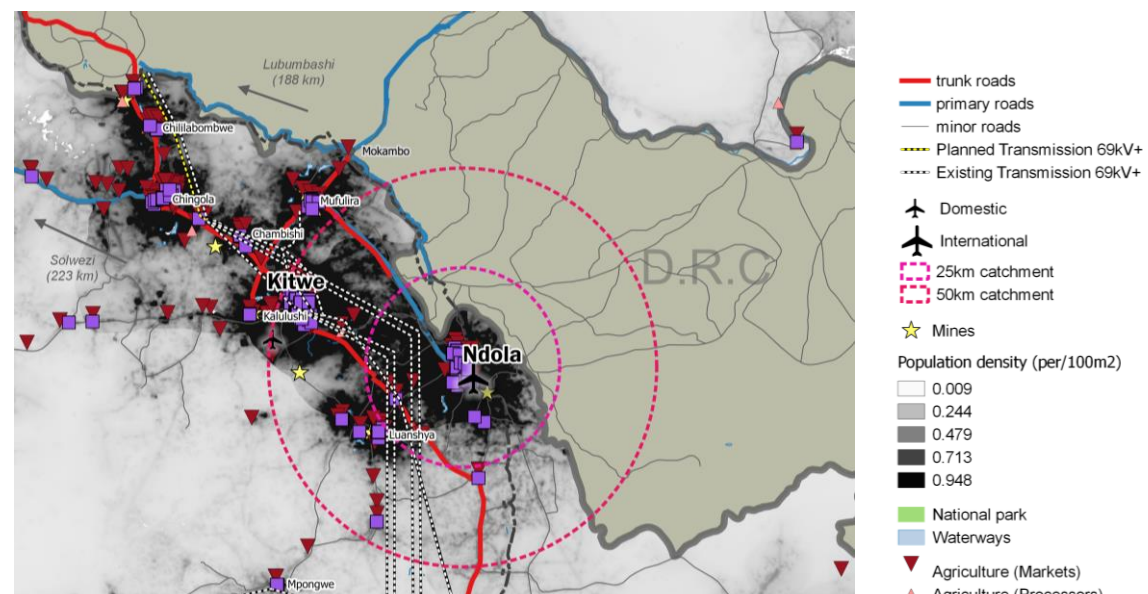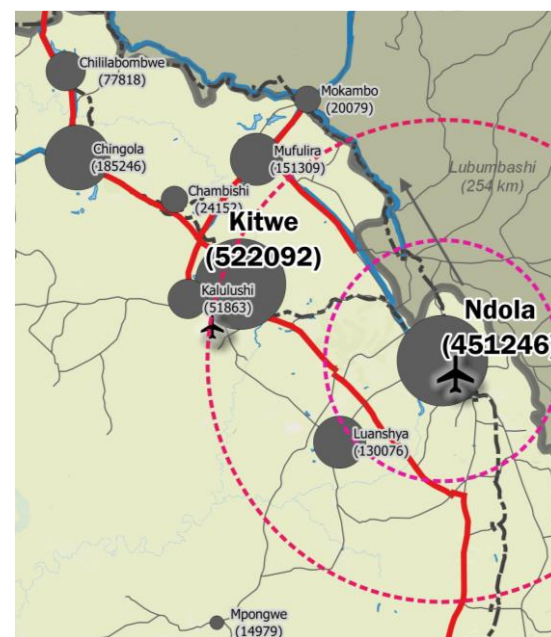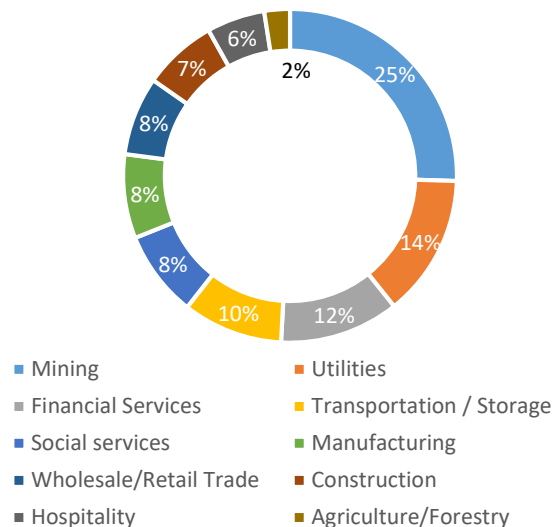
How this effects programming
An understanding of the overarching pressures businesses face in urban areas, combined with a systemic understanding of economic growth trends enables identification of inter-dependent challenges that should be targeted via portfolio level programme co-ordination.

Mapping urban economic structure
Far right: Roads, power, agricultural markets and financial services along urban corridors in Ndola-Kitwe
Right: Zambia's copperbelt urban cluster is made up of 9 specialised urban economic centres

Employment by sector and type
(Copperbelt Province, 2008)

- Mining — 25%
- Utilities — 14%
- Financial Services
- Transportation / Storage
- Social services
- Manufacturing
- Wholesale/Retail Trade
- Construction
- Hospitality
- Agriculture/Forestry

2010
451,246

Annual Growth 1.9%

2030
710,636

3. Urban Risk and resilience

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Why is this important?

Urban dwellers and businesses are exposed to a wide range of environmental risks, many of which are interdependent and cause wide-ranging systemic impacts. Environmental contamination from waste, causes urban flooding in the poorest urban areas, and results in costly property damage water contamination and diarrheal disease and death. Meanwhile droughts in Cape Town mean the city has now run out of water, and Africa's dependence on hydro-power places urban energy supplies at risk.

What you need to know?

An awareness of the environmental risks effecting urban households and businesses is critical to ensure that positive impacts of programmes are not offset by negative impacts of risks. Risk of environmental contamination, water, waste and air pollution, drought, deforestation and flooding should all be considered. In addition it is critical to understand how each of these risks impact beneficiary populations, and how risks can be mitigated.

What data you can use?

There is often little granular data accessible on environmental risks in cities – which results in risks being overlooked. Data on waste collection coverage can used as a proxy for waste risk. Environmental agencies or NGOs may hold data on water contamination. Cities experiencing regular flooding may hold mapping or data, which should be supplemented by anecdotal information from communities aware of localised impact.

How this effects programming

Programmes that fail to make themselves aware of, and put in place mitigations for environmental and climate risks place their immediate and long-term impact at significant risk. In addition mistakes such as investing in expensive infrastructure in highly flood prone areas, without appropriately climate-proofing the infrastructure represents a massive waste of donor funds. Risks and appropriate mitigations must therefore be identified and built into programming in order to ensure value for money and impact.

Air pollution: In African cities up to 90% of people rely on solid fuel for a variety of uses including domestic uses. This in conjunction with industrial processing practices and urban traffic and industrial activity causes national health challenges due to diseases linked to poor air quality both indoors and outdoors. The burden of disease attributable to solid fuels is 3.8%

Deforestation: As a result of expanding settlements and agriculture activities some forest reserves have been encroached upon and depleted. Consequently urban landscapes are often devoid of greenery and poorly designed to handle the rainy season, causing localised flooding.

Droughts are becoming common as water demand in urban areas outstrips availability posing significant developmental and economic challenges:

- Water scarcity affecting cities and power output
- Food insecurity
- Rural urban migration – due to low agricultural output

Floods: Urban flooding is very common, often a result of poor drainage. Impacts include destruction of infrastructure and housing, water contamination and increase in water-borne diseases such as cholera. In poor households the financial impacts of a flood can last 3-4 years. In 2006 1.5m people in Zambia were impacted by flooding.

Water/Waste Pollution: Towns have very poor solid waste collection and high levels of illegal disposal. 90% of 8,700 diarrhoea deaths/pa caused by diarrhoea are due to poor urban WASH, poor drainage and a lack of solid waste management and pit latrines in urban settlements.In 2013 unsafe water and sanitation in Africa caused 0.8m premature deaths.

Environmental contamination: Industrial practices and high-polluting transport modes cause severe contamination leading to:

- air pollution causing 6.5m premature deaths a year, primarily in cities;
- soil contamination
- water pollution and siltation
- land degradation & loss of agricultural land.

4. Urban poverty and inclusion

Why is this important?

Urban poverty is hugely multi-dimensional, and varies greatly between cities. Urban-dwellers, unlike rural citizens, spend significant proportions of their income on rent, public transport and water and families in urban areas require significantly higher incomes to meet basic needs. In Chipata Zambia for instance, whilst only 72% of residents live in poverty vs 80% in nearby rural areas, the cost of living in the city is nearly 2.5x the average provincial monthly household income (see income vs cost of living below).

What you need to know?

Advisors need to understand the cost of living, and the profile of household expenditure for poorer families in order to assess which factors are locking families into poverty. Advisors should also assess families access to services including energy, communications, water, waste services, health, education and public transport in order to understand who is excluded from access to public services, and the subsidy they are paying to secure private access – in Abuja Nigera the cost per litre of water from standpipes is 3x higher than from mains services.

What data you can use?

Where available household surveys are critical for establishing a baseline understanding of household expenditure and poverty patterns. Data from municipalities on infrastructure access, and from utilities on service pricing is also key. Assessments of economic opportunity can then draw on ward or municipal level census data on economic activity, unemployment (disaggregated by age and gender), and on school attendance and completion data (see bottom right). Raw data must then be supplemented by findings from locally developed qualitative impact analysis.
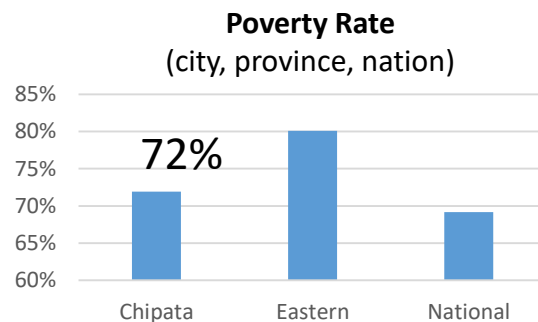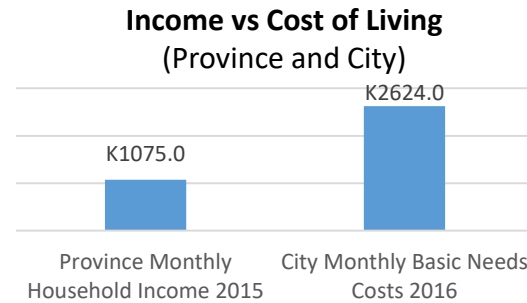
How this effects programming

Without an understanding of household level poverty dynamics it is not possible to understand whether sectoral programmes or interventions will result in poverty reduction, prosperity and inclusion. By understanding these complex dynamics country-portfolios can be choreographed to target a number of poverty levers in a city. This awareness can also be harnessed to ensure that programmes do not inadvertently have negative impacts for instance increasing expenditure on travel through the development of industrial sites far from communities.

	Ndola		Chipata
Energy	54% Access to electricity*	Constrains 17% Of firms	6% Access to electricity*
Digital Access	23.7% of households with mobile broadband internet access**		4.1% of households with access**
Water	76% Household Access*	25% Business Under supplied	72.1% Household Access*
Waste	35% of households served by waste collection		No data

Provincial level data used (DHS, 2013)
** *2013 ICT Country Survey Report, ZICTA*

Income vs Cost of Living
(Province and City)

K1075.0 — Province Monthly Household Income 2015
K2624.0 — City Monthly Basic Needs Costs 2016

Poverty Rate
(city, province, nation)

72% — Chipata, Eastern, National

Chipata economic activity	Eastern Province	Zambia
Economic Inactivity *	19%	23%
Unemployment*	5%	7.8%
Formal employment*	7%	15%
Informal employment	93%	85%
**Youth Unemployment	40%	53%
**Female youth unemployment	47%	59%

*2013 Labour Survey ** 2008 Labour Survey
*** 2015 Living Conditions Survey

Chipata % School Attendance by Grade*

Grades: 1-4, 5-7, 8-9, 10-12
All Zambia — Eastern Province — (male) — (female)