



## **Module 5: Social and Environmental Issues**

# **The application of transport and sustainable rural livelihoods in Zambia**

**Session: 5.3**

**Part 2 – Case Study**

**Presentation: 5.3b**

# 1. Introduction

## Learning Objectives

By the end of the session participants will be able to:-

- ③ Describe how livelihood capitals are affected by transport issues in rural Zambia
- ③ Analyse transport and livelihoods constraints
- ③ Describe a range of livelihood strategies linked to transport
- ③ List recommendations for improving transport
- ③ Apply livelihood thinking to their areas of work

# Session Overview

- ◎ Context & background to the case study
- ◎ Livelihood capitals in the Northern and Copperbelt Provinces
- ◎ Livelihood constraints
- ◎ Livelihood strategies
- ◎ Recommended transport interventions in rural Zambia

## 2. Background to the case study

Context

Policy tool kit for increased rural mobility

Livelihoods in rural Zambia

The case study areas

# Context

- ③ Transport constraints on rural livelihoods are **not only** a result of poor road condition
- ③ .. but are a culmination of
  - inadequate infrastructure
  - poor public transport provision
  - exorbitant tariffs imposed by private transporters
  - infrequent services
- ③ ... which also
  - adversely impact on access to rural health centres and basic schools

# Context

- ◎ A poor transport network compounds the **subsistence burden** in Sub-Saharan Africa
- ◎ Rural farmers are **unable to transport** agricultural outputs to market
  - need **considerable capital outlay** to purchase an intermediate mode of transport (IMT) - bicycle, animal cart
  - farmers need to sell or barter produce at a much **reduced price** to traders
  - pay **excessive transport fees** to generate surplus capital to pay for health care, education

# Policy tool kit for increased rural mobility

- © Funded by DFID
- © Basis for this case study
- © On-going project drawing on empirical case studies of sub-Saharan Africa where
  - transport **constraints** impact heavily on rural livelihoods
  - external factors - especially **institutional** interventions - have intensified the livelihood constraints faced by the rural poor

# Policy Tool Kit for Increased Rural Mobility

## Project aim

### 🎯 To produce a **'Toolkit' manual**

- identify transport **constraints** affecting remote communities
- assess **baseline requirements** for improvement of infrastructure, transport services, location of extension services and village level transport
- address **policy issues** for improved accessibility
- recommend **appropriate interventions** for improved mobility
  - reflected in the enhancement of livelihood assets and strategies



# Livelihoods in rural Zambia

- © Rural livelihoods adversely affected by **externalities** in recent years
- © Since 1999 the agricultural sector has been the '**main engine of growth**'
- © Government adjustment programme **marginalised** non-commercial agricultural producers

# Livelihoods in rural Zambia

## © Decentralised market structures led to

- **elimination of subsidies** for agricultural inputs -
  - small scale farmers no longer had access to fertiliser, seed, pesticides - vital for maize production
  - rural poor resorted to growing traditional crops (sorghum, finger millet) - even though market prices are lower

## © Liberalisation

- most damaging in extremely **remote** areas
  - ... where people **lack** livelihood **strategies to cope** with shocks and stresses
  - ... increased **vulnerability**

# The case study areas

## 1. Northern Province

- 147,826 sq km
- Districts: Mpika, Mugwi, Luwingi

## 2. Copperbelt Province

- 31, 328 sq km
- Districts: Mpongwe, Masaiti

# The case study areas

## Northern Province

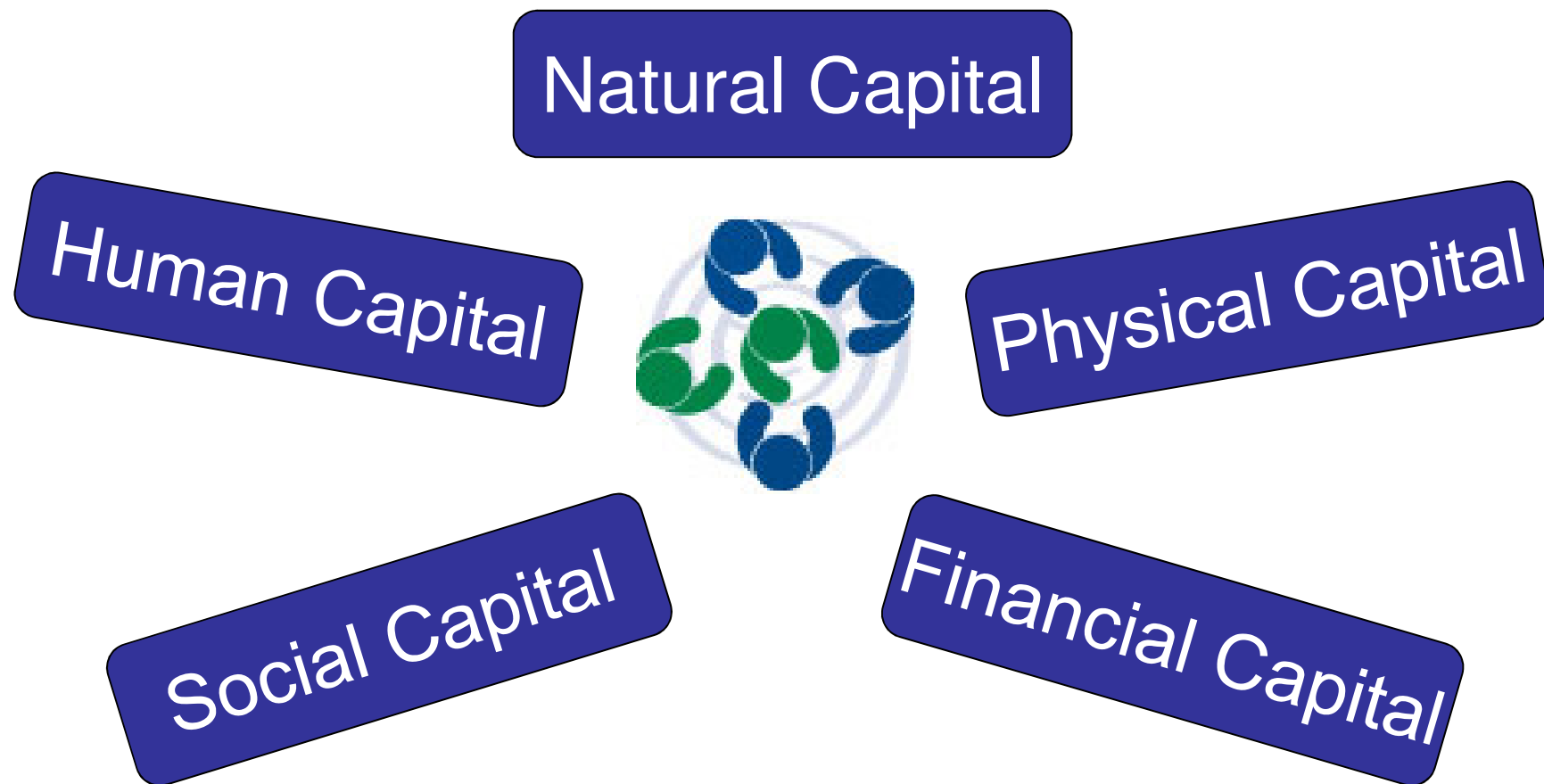
- 86% of the population live in rural areas
- ◎ Trunk, Main and District roads inadequate
  - feeder roads extremely dilapidated, frequently impassable in wet season
- ◎ Principle economic activity
  - farming maize, millet, beans, cassava, and sweet potatoes
  - fishing in Districts adjacent to Lakes of Bangweulu, Lake Mweru-Wantipa and Lake Tanganyika

# The case study areas

## Copperbelt Province

- mining activities
- focus for the economy & foreign exchange earnings
- ◎ Population 2x that of Northern Province
  - 17% live in rural areas
  - located 321km from Lusaka along key trunk road networks and railway lines
- ◎ Considerable proportion of rural dwellers stuck in the poverty cycle
  - due to impeded mobility
  - caused by poor infrastructure, transport services

### 3. Livelihood capitals in the Northern and Copperbelt Provinces



# Natural Capital

## Northern Province

- ◎ 5 agro-ecological zones
  - grassland 50%, savannah 33%, forest 12%
  - 0.36% used for agriculture
- ◎ Rainfall 1100 to 1400mm - October to March
- ◎ Rural population density low: 5.8/km<sup>2</sup>
- ◎ Animal husbandry is dwindling
  - principally due to corridor disease - reduced the number of cattle
- ◎ *Chitemene* farming system most widely practised
  - slash & burn improves fertility of cultivatable soil
  - negates the need for chemical fertilisers

# Natural Capital

## Copperbelt Province

- ◎ Large copper and cobalt reserves
- ◎ Commercial forestry
- ◎ Small scale farmers produce traditional crops
  - cassava, finger millet, beans, maize
- ◎ Horticulture more widely practised than in Northern Province
  - strong demand



# Natural Capital

## Copperbelt Province

☉ Animal husbandry is dwindling

- corridor disease

☉ *Chitemene* NOT traditionally practised

☉ Soil fertility varies

- Mpongwe and Masaiti Districts - greater productivity
- encouraged the resettlement of ex-miners into the newly transformed 'agro-belt'
- under the Rural Enterprise and Agri-services Promotion Programme (REAP)

# Physical Capital

🌀 Major constraints to livelihoods

Poor transport  
Infrastructure

Lack of  
communication  
networks

## Physical Capital

## Poor transport Infrastructure

- ◎ Lack of **access** to
  - social services, markets, agricultural inputs
- ◎ **Impassability** in wet season affects incomes
  - traders cease to come and buy produce
- ◎ Most travel is by **foot**
  - bicycles used widely and loaned to neighbouring villagers for a small fee
- ◎ **Few IMTs** e.g. scotch carts, especially in Northern Province
  - corridor disease killed large numbers of cattle
  - traditionally the Bemba & other ethnic groups are not cattle keepers

## Physical Capital

## Poor transport Infrastructure

- ◎ Feeder road rehabilitation in Copperbelt may have led to
  - small increases in vehicle frequency, shorter travel times, and improved access to markets and social services
- ◎ But - use of feeder roads still remains low
- ◎ Attributing and ascertaining feeder road impact in remote areas is difficult given
  - low levels of economic activity
  - large distances
  - low densities of populations

Physical Capital

Poor transport  
Infrastructure

### ⦿ **Feeder road** improvements alone

- i.e. without complementary development activities
- **will not** necessarily bring new traders to remote areas
- or greatly increase economic activity

## Physical Capital

Lack of  
communication  
networks

⊙ Barrier to livelihood enhancement

⊙ Problems with network of agricultural extension

- designed to facilitate the transfer of information on market price, provision of credit and inputs, technology, training
- positions of agricultural extension unfilled
- most staff only had access to one bicycle for 100+ households

Physical Capital

Lack of  
communication  
networks

- © The capacity of Zambia's field services diminished in recent years - due to
  - poor road condition
  - insufficient government funding

# Human Capital

## ③ Grossly **inadequate** rural health care

- insufficient funds, shortage of drugs, shortage and maldistribution of staff, physical barriers
- inability of staff to reach patients in villages
- inability for medicine kits and vaccines to reach the Rural Health Centres

## ③ **Emergency** health care access: a **priority** concern for villagers

- improvised stretcher '*machila*' laid across a bicycle
- poor physical access to medical staff and drugs = high mortality rates



# Human Capital

- ③ **Education** facilities were inadequate
  - priority concern - especially for young families
- ③ Secondary schools
  - distance and absence more acute in rural areas
- ③ Teachers identified absenteeism as a priority concern
  - by children who are unable to reach school due to walking **distance**
  - by teachers who lack the incentive to relocate deep in the bush where **communications are virtually non-existent**

# Financial Capital

## © Access to agricultural credit is **extremely limited**

- since government withdrew support
  - late delivery of fertilisers led to poor yields
  - caused farmers to **default on loans**

## © Farmers' co-operatives required to provide their own transport to collect farm inputs from the Food Reserve Agency

- **high transport fees** use much of the surplus capital generated from the high agricultural yields

# Financial Capital

## © Credit schemes in Zambia e.g.

- social recovery project
  - designed to support infrastructural improvements at the community level
- IMT project run by the Technical Development Advisory Unit (University of Zambia)
  - aims to provide credit to emergent farmers for the purchase of IMT's - focus on animal draught

## © Credit schemes in Zambia characterised by failure

- problems with **repayment**

# Financial Capital

- © Rigorous assessment processes and the implementation of group collateral
  - could make future credit schemes more fruitful?
- © These **credit schemes** led to the further **marginalisation of the absolute poor**
  - peasant farmers - unable to provide collateral
  - people not located in areas of high agricultural productivity

# Social Capital

## ☉ Active social networks

- village groups or assemblies
- village health neighbourhoods
- other social groups

## ☉ Some groups in Northern Province met to

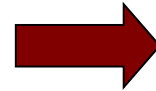
- discuss development issues within the community
- promote the frequency of health outreach programmes and extension visits

## ☉ Religious activities

- reinforced community relationships
- built resistance to shocks and stresses

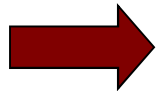
## 4. Livelihood constraints

Northern Province



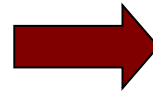
Food insecurity

Copperbelt Province



Access to  
markets

Northern Province



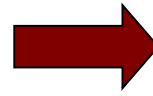
Food insecurity

## Exacerbated by

🌀 **Lack of access to fertilisers** (financial, physical)

- proliferating use of destructive 'slash and burn' farming
- fertiliser agents unable to operate
  - took 2 hours to travel 32km along dilapidated access road (with motorised transport)
  - extreme vulnerability for some villages

Northern Province



Food insecurity

## Exacerbated by

### ③ Absence of an efficient marketing network

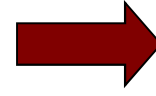
- intensified by the inferior road condition

### ③ Infrequent private transporters

- contribute to lack of local marketing initiatives
  - because farmers not able to transport produce to distant markets
  - ... so traders impose unfair trading terms - increases in bartering
  - ... limits generation of surplus capital to pay for consumer goods, school fees, health centre fees



Copperbelt Province

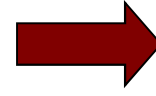


Access to  
markets

## 🌀 Mpongwe and Masaiti District

- formed **farmers' co-operatives** to secure collateral to obtain fertiliser
  - allowed surplus production of maize
- **donor-funded** rural development programmes e.g., Small-holder Development Programme (SDP) funded by the European Union (EU)
  - boosted financial and institutional capacity of District Councils
  - localised feeder road improvements with graders borrowed from the Provincial Roads Engineer

Copperbelt Province

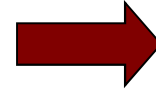


Access to  
markets

### 🌀 Lufwanyama District

- less fertile
- received no EU funding from the SDP
- poorest and most inaccessible District in the Province
- deemed politically insignificant
- less agriculturally productive

Copperbelt Province



Access to  
markets

⊙ Lufwanyama District Council

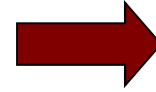
- virtually no capabilities to undertake even the most essential maintenance

⊙ Market town 60km from the study area

- journey usually involved a 3 hour walk to the nearest junction, followed by a K4,000 single fare to Kitwe

*Exchange rate approximately £1 = 4300 kwacha  
(at time this paper was published 2001)*

Copperbelt Province

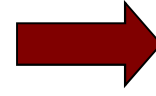


Access to  
markets

© **Transport problems** in Lufwanyama District were more characteristic of the Northern Province

- especially the problem of **food security**
  - particularly during shocks
  - for example in 1999 heavy rains led to a poor harvest
  - children taken out of school to do piecework in exchange for the staple 'mealie meal' [maize]

Copperbelt Province



Access to  
markets

### ⦿ **Poor soils** in Lufwanyama

- with no farmers' co-operatives to obtain fertiliser - villagers tended to move further into the bush
  - diminishing the availability and quality of natural resources
  - removing children from school because of the journey distance

# 5. Livelihood strategies

## Overview

- ③ The only **transport providers** who directly impact on rural livelihoods =
  - **informal transporters**
  - **rural households** who own ox-carts and (more commonly) bicycles
- ③ **Very little scope** to adopt transport-based strategies to markedly improve livelihood potential

# Overview

③ Strong **demand** for transport interventions for

- marketing activities
- access basic services

be they .....

- efficiently managed, moderately priced transport services, and/or
- non-motorised intermediate modes

# Range of strategies being used





# Range of strategies being used

Catching  
lifts to  
market

Hiring out  
cart and  
oxen

## 🌀 Copperbelt

- pickup trucks, tractor-trailers, scotch carts
- provided frequent services to outlying areas

## 🌀 Typical **small scale farmer** owned 1 ox-cart and 7 cattle

- hired out for K500/km or K500/50kg box of vegetables
- hired out oxen for ploughing at K100,000/ hectare land

# Range of strategies being used

## Remote villages



Leasing out  
bicycles

- farmers saved considerable time by transporting goods to the market themselves
  - rather than waiting for a lift - up to 2 days
- especially used by teachers
  - for frequent trips to collect their salaries
  - to sell produce received in payment for school fees

# Range of strategies being used

Forming  
farmers'  
co-ops

## Benefits

1. Farmers **obtained inputs** from Food Reserve Agency (FRA)
  - would only supply cooperatives - to ensure post-harvest repayment
2. Enabled individual farmers to provide sufficient **collateral & down payment** for the fertiliser
3. Collective hire of a vehicle (motorised or non-motorised) **reduced transport costs** for the collection of fertiliser

# Range of strategies being used



## ☉ Bartering

- principally in the Copperbelt
- an important trading mechanism, usually undertaken with equity

## ☉ Charcoal production for sale at the road side and market

## ☉ Beer brewing by women - for sale within the village

## ☉ Hammer mill

- relatively few, owned by the affluent
- charged neighbouring households for its use in grinding maize into mealie meal
- alleviated time burden of women

## 6. Recommended transport interventions in rural Zambia

### ③ Increased supply of **IMTs**

- demand was evident
- of particular service to extension and outreach workers - who support human capital generation amongst rural communities

### ③ Create a **'critical mass'**

- to reduce transport and hire costs
- foster provision of spare parts manufacturers & maintenance necessary for sustained utilisation

- ◎ Provision of effective **credit schemes** for farmers
- ◎ Relaxation of **legislation** on informal transport services
- ◎ Need to communicate the **priority requirements** of rural communities to transport decision and **policy makers**
  - avoids wastage of donor funding
  - helps ensure appropriate interventions meet the needs of the **poor**
    - rather than exacerbate their isolation

## Transport and livelihoods in specific countries



### Group Activity

- A. What are the livelihood strategies of the poor?*
- B. How do transport infrastructure and services affect the livelihoods of poor people? (Include policy and institutional issues, and vulnerabilities).*
- C. Make recommendations for how transport issues that are constraining livelihoods may be addressed.*

# Concluding Remarks

## Outcome of livelihood analysis

- inadequate transport infrastructure and transport service provision was a principle constraint to livelihoods