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Overcoming the First Mile –Lessons from Farmers in Kenya and Tanzania

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IFRTD

The International Forum for Rural Transport and Development

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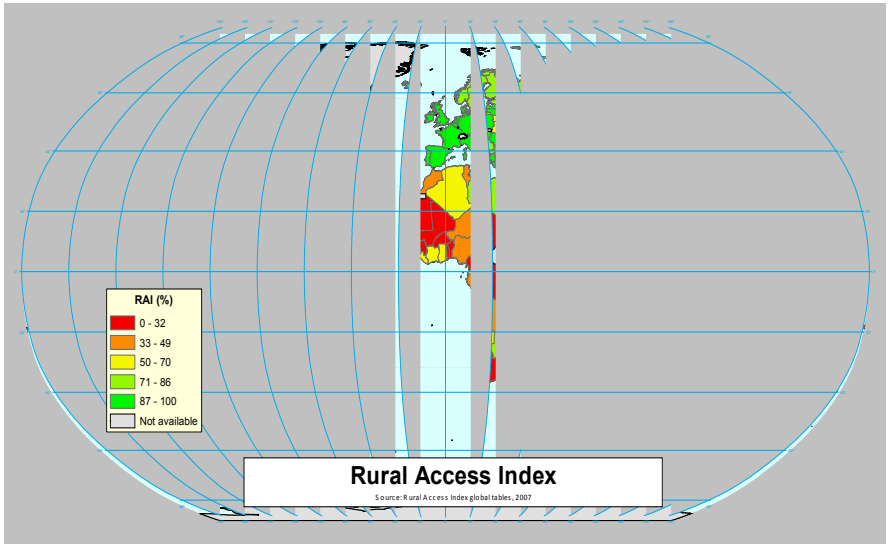
The Wider Context - Infrastructure

About a billion people live further than 2 km from an 'All Season Road'.



A recent Systematic Review has found that new rural road investment has had a significant positive impact on incomes and agricultural output. The effects are most pronounced on countries with low road densities, such as Ethiopia and Tanzania.

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The Wider Context-
Transport Services & Marketing

- **Many studies have confirmed that transport tariffs in Sub-Saharan Africa are much higher (sometimes as much as four to six times) than for comparable journeys in Asia.**
- **The key factors explaining high tariffs appear to be a low density of demand coupled with restrictive practises by cartels.**
- **Other studies point to a very high spread, in Africa, between the prices received by the farmer and the urban retail price.**
- **Overall Sub Saharan Africa appears to have an inefficient and monopolistic transport and marketing system.**

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'First Mile' Study Rationale

- **'First Mile' movements of agricultural produce are known to be problematic and expensive. Despite this little quantitative information is available on harvesting and load movements of smallholder agriculture.**
- **The First Mile studies were designed as exploratory pilot projects to collect a wide range of data on the transport of harvest produce including consignment size, mode of transport, transport costs, losses, load consolidation etc.**
- **Ultimately we want to get a comprehensive understanding of both the infrastructure and transport services constraints.**

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Study Location in Kenya and Tanzania

Kieni, Nyeri County, Kenya

Kilolo, Iringa Region, Tanzania

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Location and Survey Characteristics

	Kieni, Kenya	Kilolo, Tanzania
Terrain, altitude	Hilly, 2500 m	Hilly, 1900 m
Rainfall	550-950 mm	750 mm
Road density	1.7 km/sq. km	0.17 km/sq.km
Population Density	241/sq. km	28/sq. km
Villages covered	6 villages	6 villages
Farmers interviewed	35 (11 f, 24 m)	52 (13 f, 39 m)
Transporters interviewed	13 transporters	58 transporters

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Onion Farming Kieni, Kenya

- **Farmers: 31% Female, 69% Male**
- **Education Level: 60% primary, 31% secondary, 9% tertiary**
- **Age: 35% below 40 yrs, and 14% above 50 yrs**
- **Onion Farmland 80% under 2 acres**
- **29% of land rented, 71% freehold**
- **For 85% of farmers, onions account for majority of income**
- **For 65% onions account for over 75% of agricultural income**
- **Average income of US$1281 per acre with production costs (seeds, fertiliser, hired labour) of US$423 per acre giving average net income of US$ 858 per acre**

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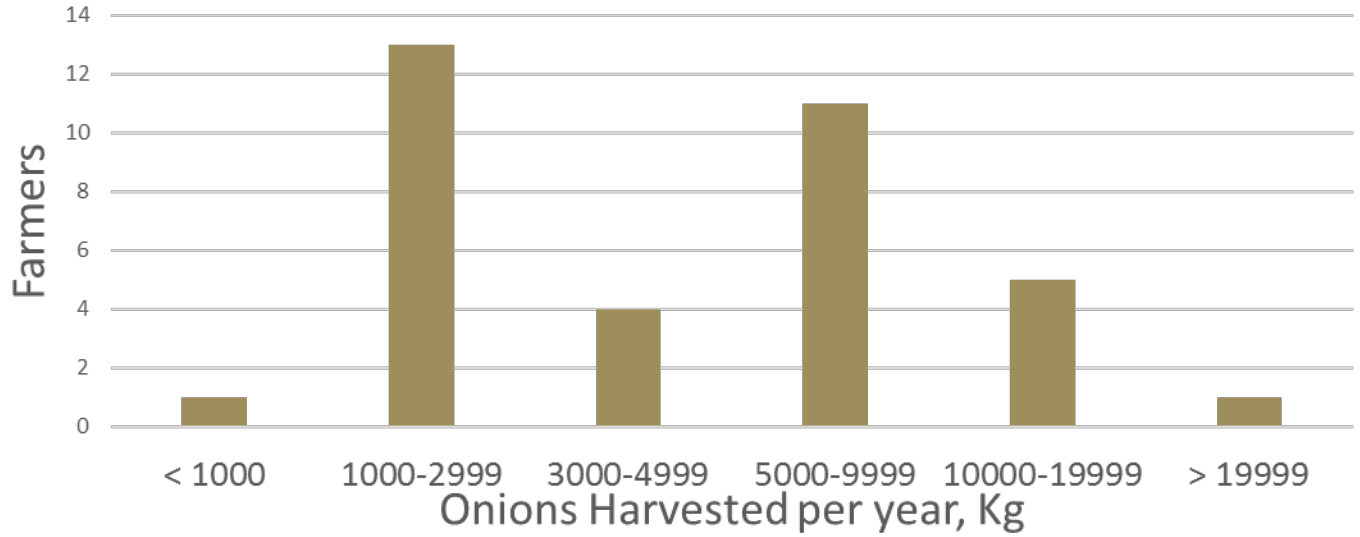
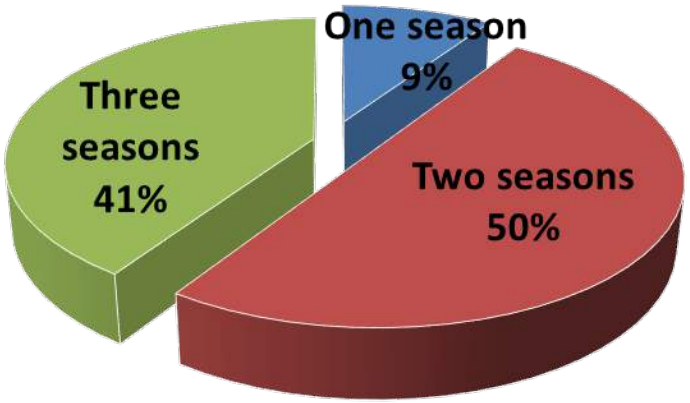
Onion Production Kieni, Kenya



ONION PLANTING SEASONS



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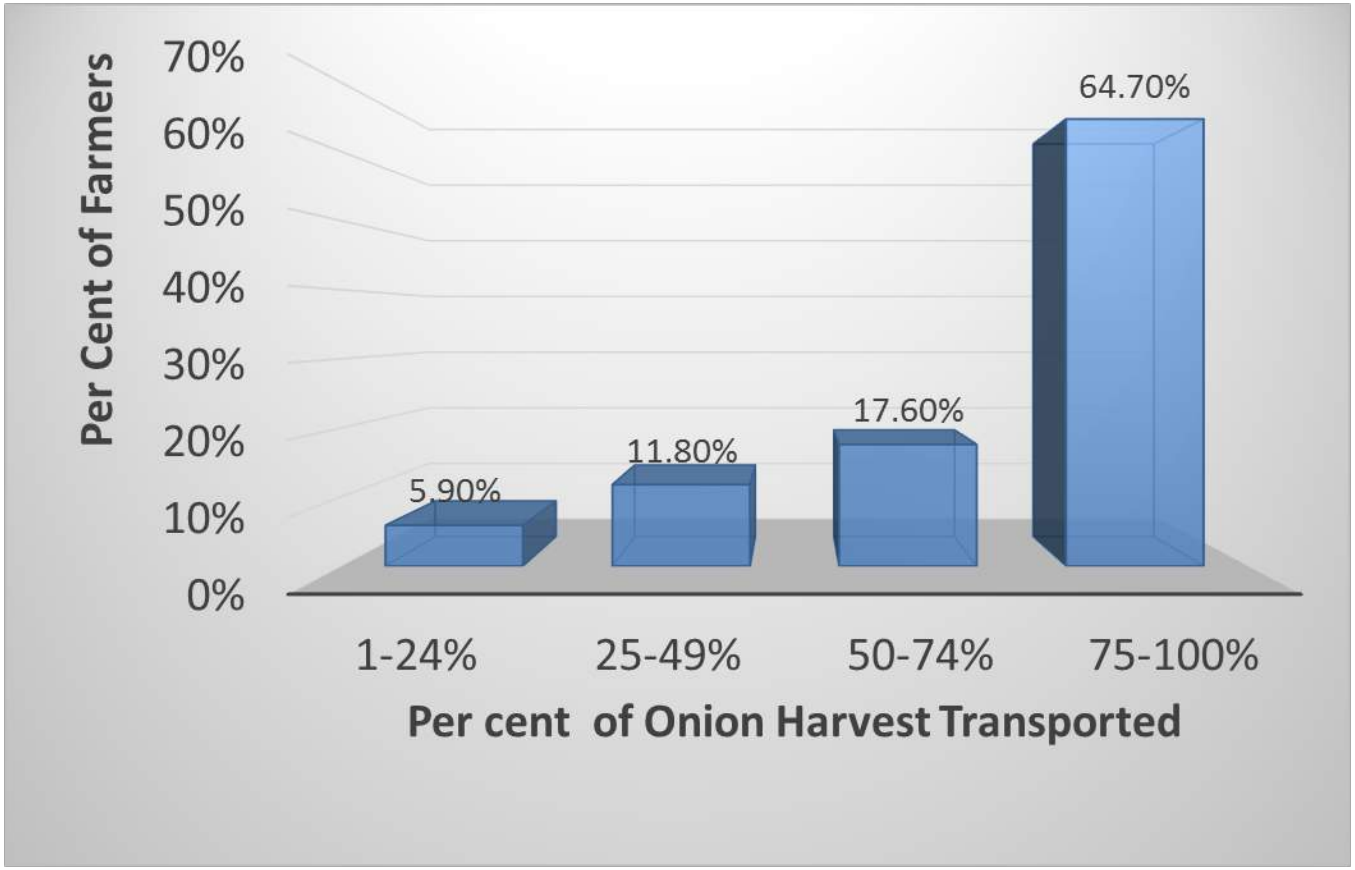
Onion Harvesting, Kenya



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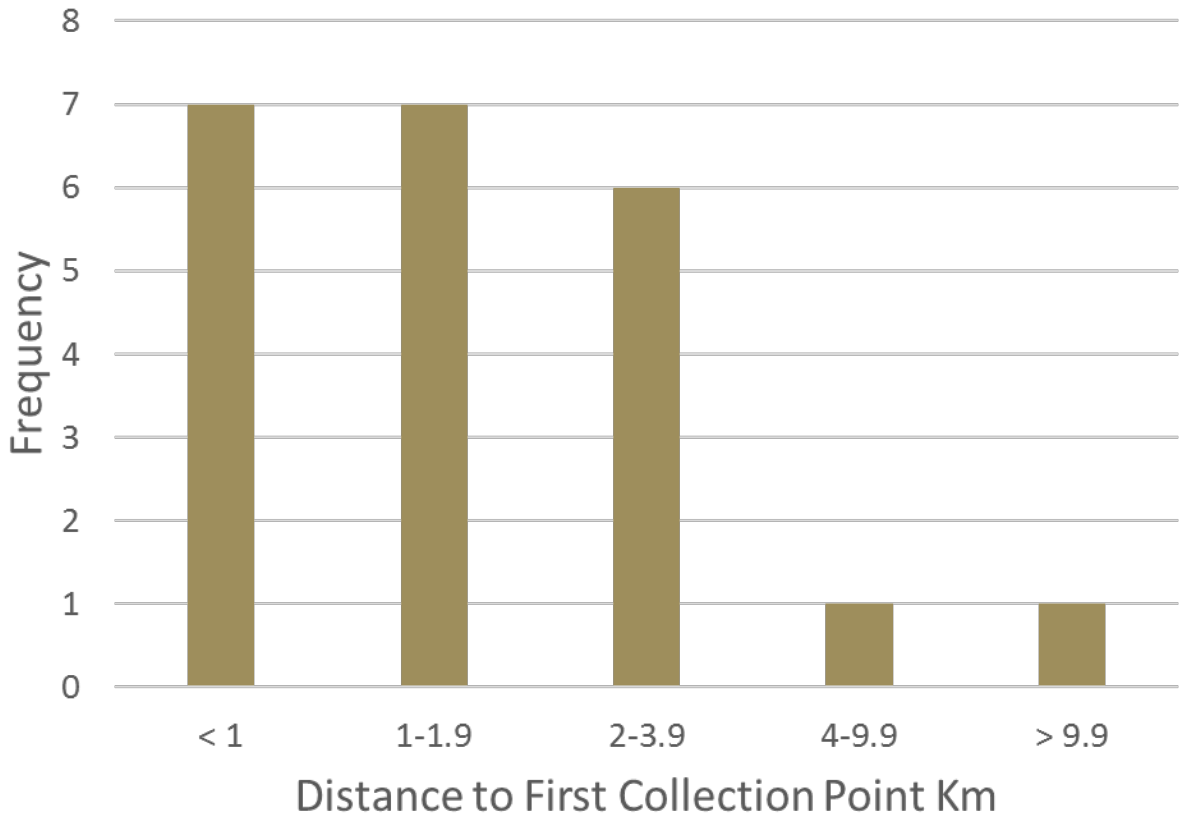
Distance to Onion Collection Point



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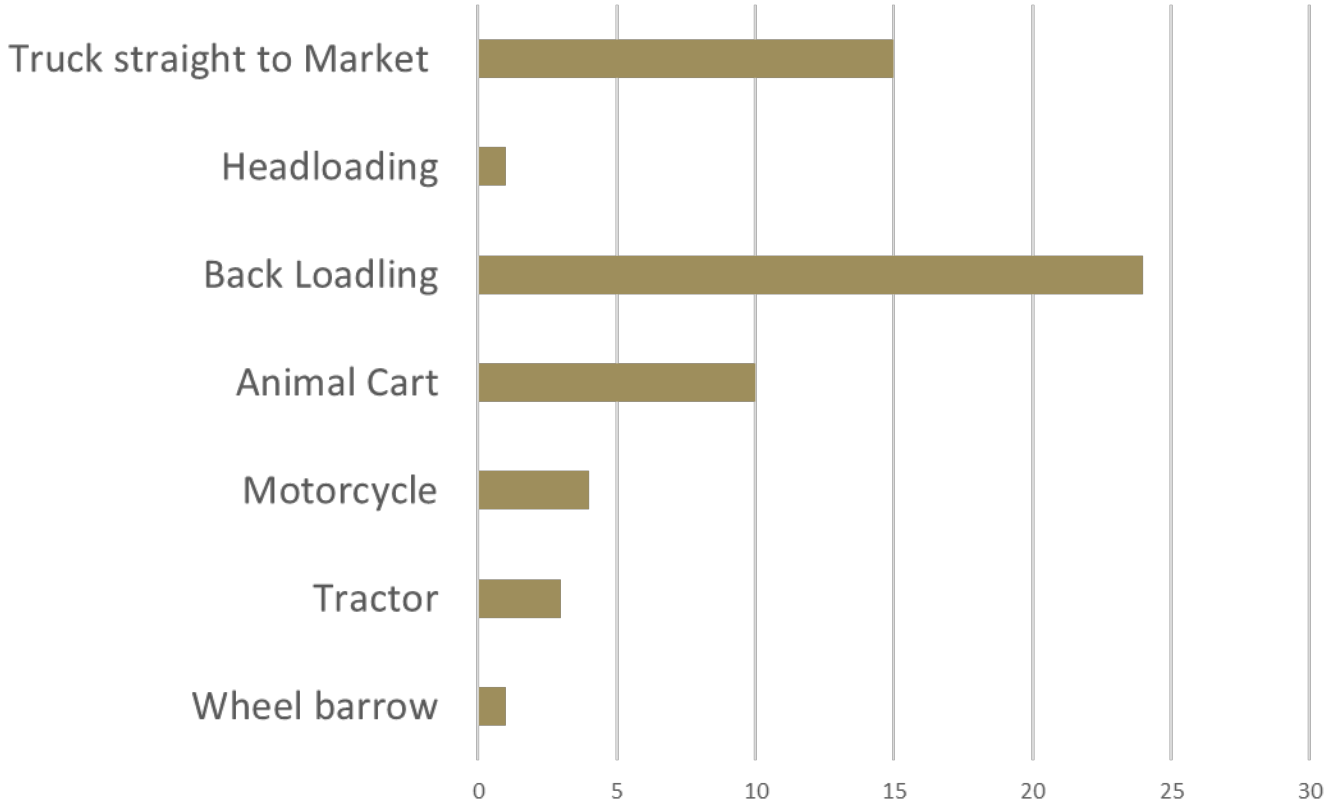
Mode of Transport to First Onion Collection Point



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Transport Costs, By Mode, Kieni District

Mode	Mean Trip Distance km	Mean Load kg.	Mean charge Ksh /kg	Mean charge Ksh/ ton-km
Motorcycle	10	150	5	500
Pick up	10	1800	0.9	90
Truck	30	8000	0.9	30
Animal cart	2	350	1.75	875
Head/back loading	2	40	1.0	500
Tractor (wet season)	2	4000	2.0	1000

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Tomato Farming, Kilolo, Tanzania

- **52 Farmers: 13 women, 39 men**
- **Customary land ownership: 82%, 18% rented by outsiders**
- **Average land holding 2.5 acres, tomatoes 0.9 acres**
- **Farmers harvest once per weak in season (Aug to Dec)**
- **Average tomato production 7 tonnes per season**
- **Major challenge when rains coincide with harvest period (Nov and Dec)**
- **The average gross income is about $500 per year from tomatoes**

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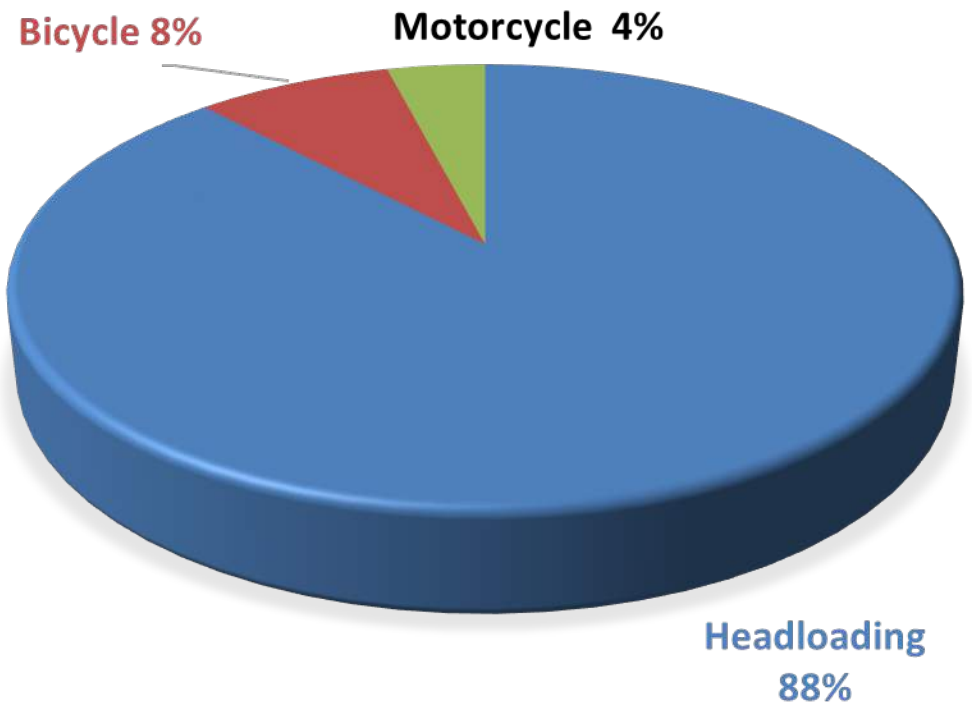
Mode of Transport to First Tomato Collection Point, Kilolo Tanzania



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Tomato Transport Value Chain

Excluding urban distribution the transport market chain has three main links as shown below. Market prices vary with the season from Tsh 4,000 per 60 kg in peak harvest to Tsh 10,000 -25,000 in periods of scarcity. Prices shown on the Diagram below were collected at the same time.

Farm, Tomato price Tsh 10,000/ 60 kg bag

↓ 1- 4 km

Roadside Collection point, price Tsh 14,000/ 60 kg

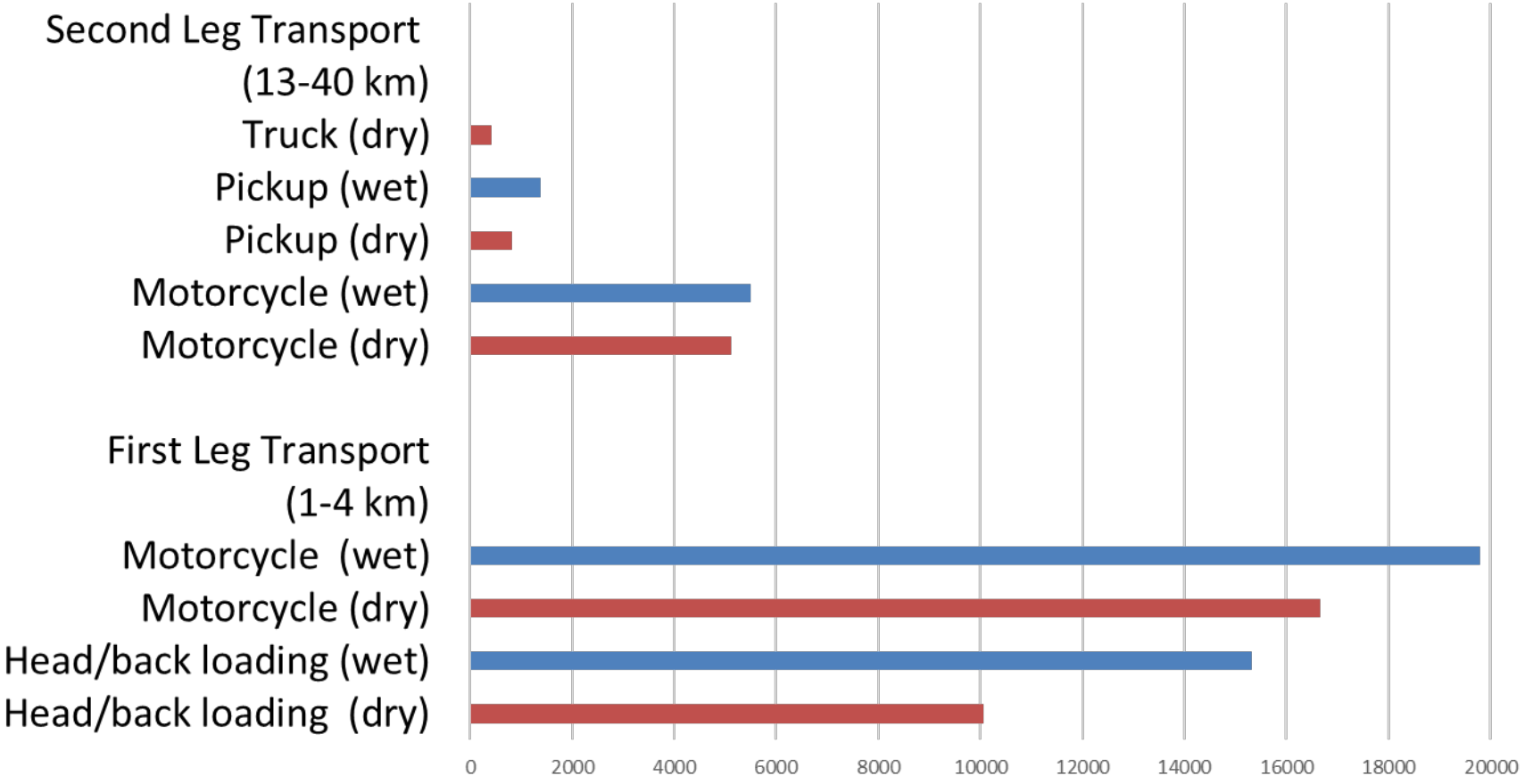
↓ 10-40 km

Iringa Collection Market, price Tsh 18,000/ 60 kg

↓ 500 km

Dar es Salaam Market, price Tsh 35,000/ 60kg

Transport Costs, Tsh/Ton/km for Different Journey Legs, in Wet and Dry Season



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Modal Differences in Transport Costs

In Kenya backloading (the predominant means of first mile transport) costs 16 times as much per km as movent by truck.

In Tanzania head/backloading (also main mode of transport) costs 23 times as much per km as movement by truck.

Wet season transport can be much more expensive than dry season. For human transport it was 50% more.

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‘First mile’ Costs as a Percentage of income

In Kenya it is estimated that onion farmers spend around 10 to 20% of their income also on initial movement costs if they use traditional forms of transport.

As a proportion of roadside price tomato farmers in Tanzania spend around 20-30% on the first mile movement costs in the dry season and 40-50% in the wet season if they use headloading or motorcycle transport.

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Specific Issues Identified by Farmers

- **Many farmers will arrange for a truck to collect their produce, but they loose out when the trucks fail to come – usually because of difficult and impassable roads and tracks. Produce will spoil and extra costs are involved.**
- **There were many complaints about this in Kenya and big losses occur, particularly mentioned for milk, onions and cabbages.**
- **In Tanzania the will have to carry there loads up to 5 km in wet season to reach a reliable vehicle pick up point.**
- **Poorer prices are received for damaged crops. For onions it was found that multiple handling and headloading damaged the crop more than when loaded and transport by lorry.**

An Example of Cooperative 'self help'

In Kenya it was found farmers collectively purchased land to provide an easier route to bring trucks in to collect their produce.

This worked to an extent, but part of the route chosen was very steep and so trucks and cars had to be unloaded, and the loads carried and reloaded, while the vehicle was manually pushed up the steep section.

A small amount to engineering advice to change the alignment of the route would have saved a lot of problems.

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Thank You !

For a more lively description of First Mile Issues see the IFRTD film on First Mile Transport available on You Tube.

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