

# Assessment of Kenya's domestic horticultural production and marketing system and lessons for the future

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**Tegemeo Institute of Agricultural Policy and Development**  
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## Roadmap

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- Urbanization and its implications
- Data
- Consumption and production trends
- Assessment of system serving Nairobi
- Lessons for future

## Purpose

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- Bring together array of production and marketing information to assist in moving forward on Vision 2030
  - Quantify production and consumption patterns
  - Document structure and selected elements of performance of system serving Nairobi
  - Draw implications for policy and programmatic actions under Vision 2030

## Data

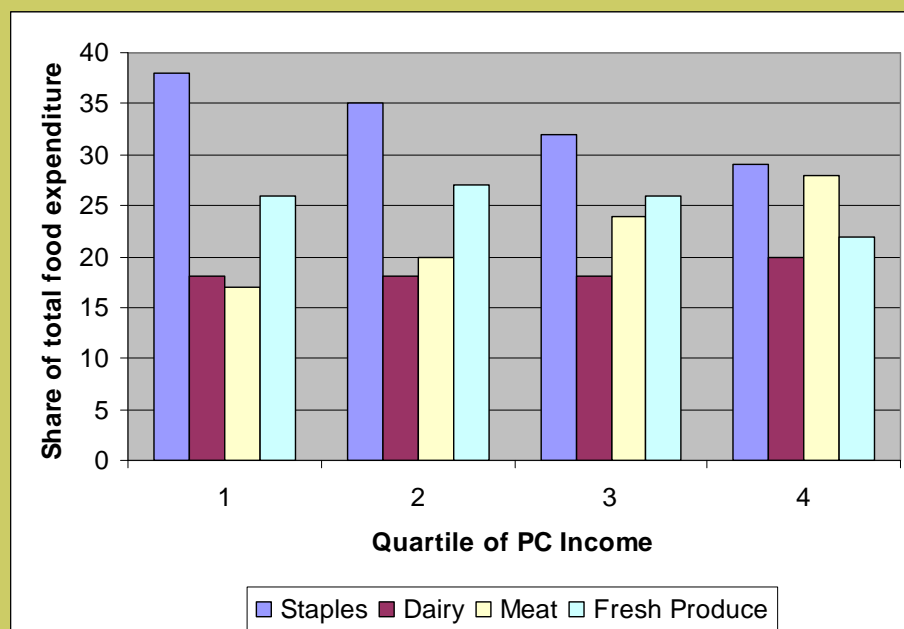
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- Tegemeo rural household panel
- Tegemeo 2003 Urban Consumption Survey in Nairobi
- Wholesale market monitoring data
  - Quantities and geographic origin of all products entering Wakulima, Gikomba, Kangemi, and Kibera markets during four weeks of December 2004 and Feb/March 2005
- Retail market surveys in Nairobi

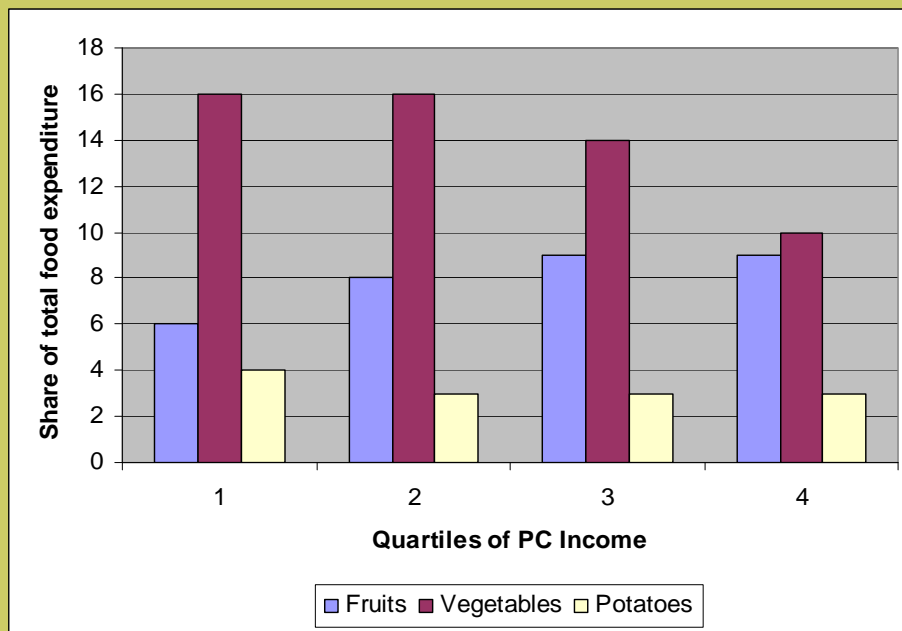
## Urbanization in Kenya

- Urban population to triple over next 25 years
- Rural population to increase only 50%
- Number of urban consumers to be fed by each farmer will double
- Production per rural household will have to grow by 3% per year to do this
- Urban and rural-urban infrastructure will have to improve dramatically

## Consumption patterns (1)



## Consumption patterns (2)

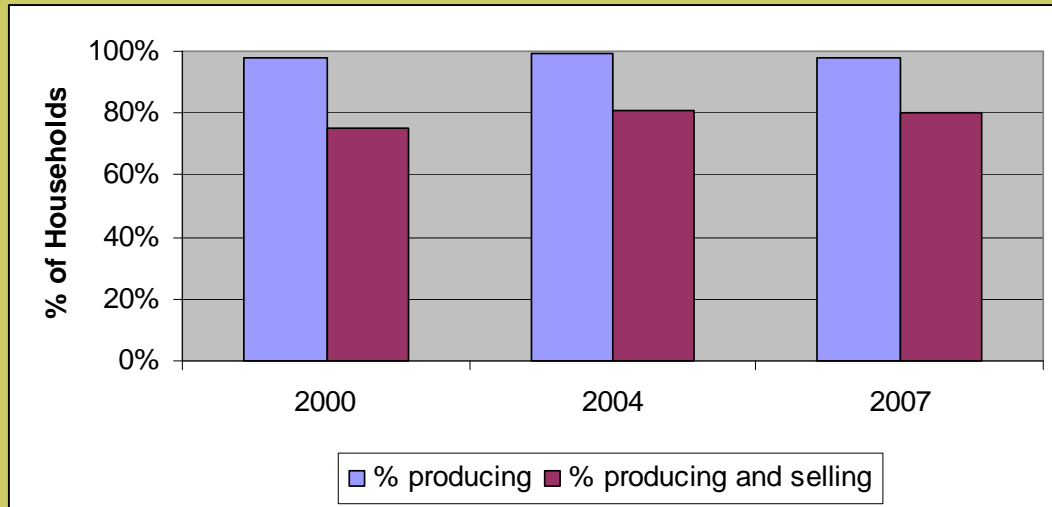


## Consumption patterns (2)

- Fresh produce as a group is generally expected to have a high income elasticity of demand
  - Demand will grow more rapidly than income + population
  - Fruit especially
  - Also value added
    - Slicing, dicing, mixing, packaging, ready-to-eat

## Production and sales trends (1)

### % of rural households producing and selling fresh produce

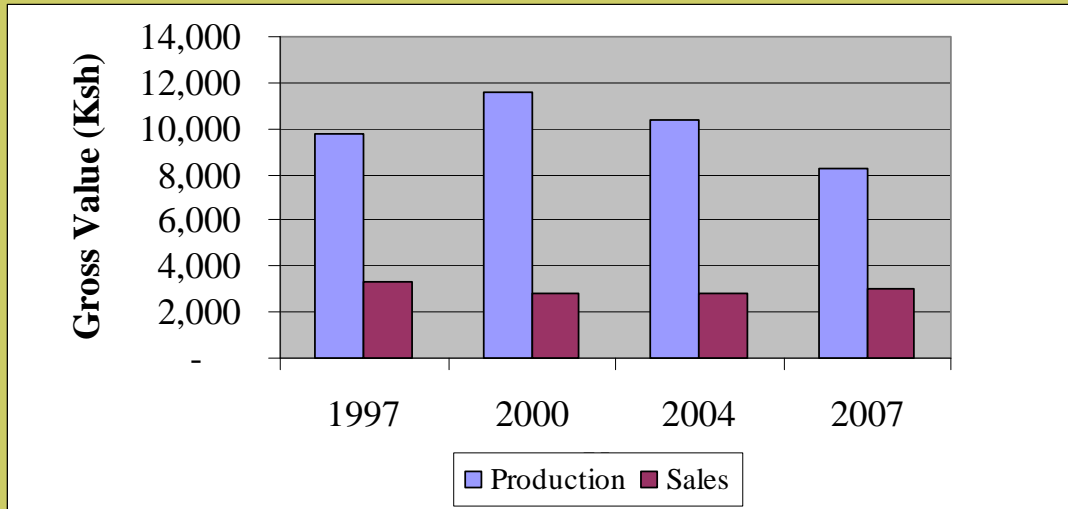


## Production and sales trends (2)

- Participation basically flat on national level
  - Has increased among bottom three quartiles of land and income
  - But has fallen among top quartile of each
- At zonal level
  - Has risen since 1997 in Coastal Lowlands, Western Lowlands, Marginal Rain Shadow and (in 2007) Central Highlands
  - Highest in Central Highlands and Western Highlands

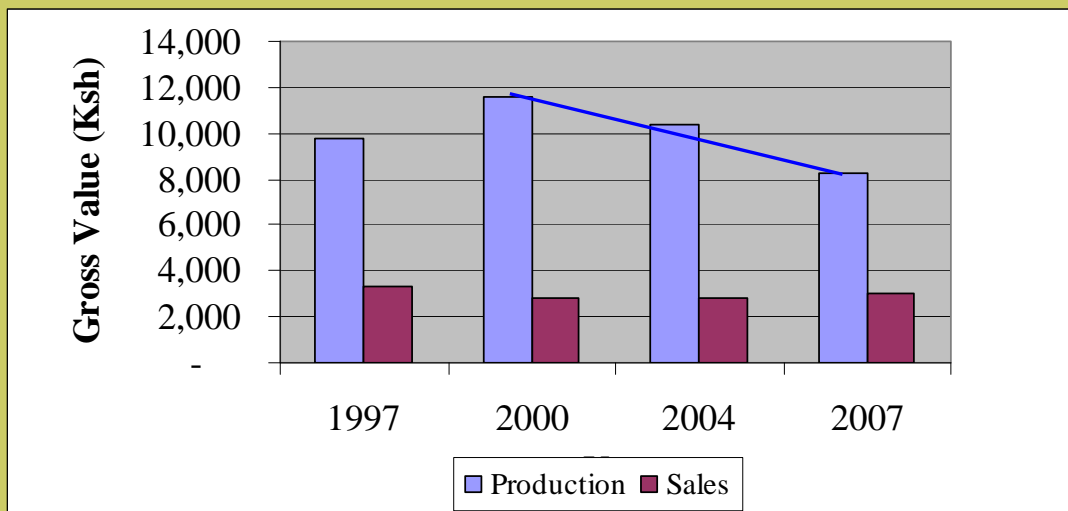
## Production and sales trends (3)

### Median gross value of production and sales of fresh produce



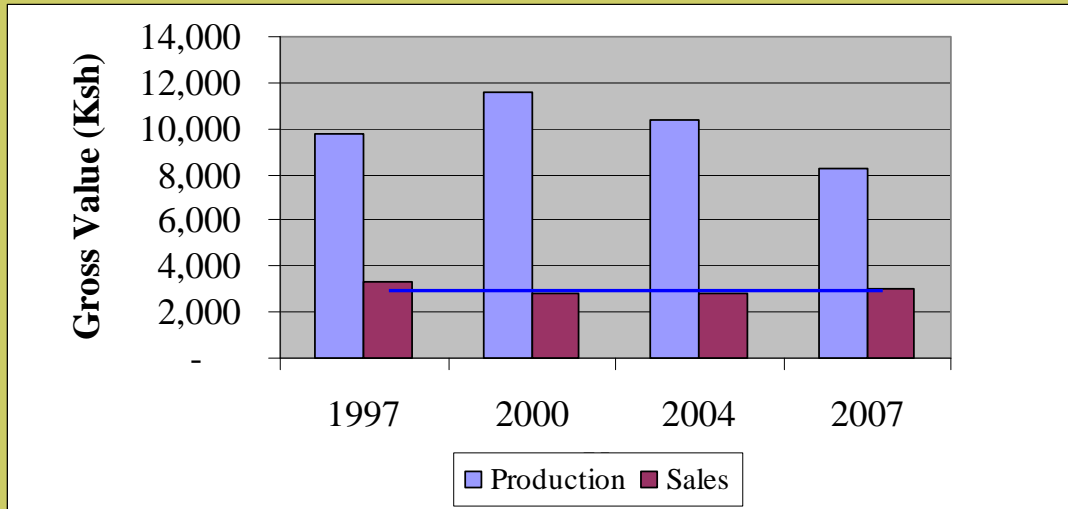
## Production and sales trends (3)

### Median gross value of production and sales of fresh produce



## Production and sales trends (3)

### Median gross value of production and sales of fresh produce



## Production and sales trends (4)

- ❑ Median prod'n value down sharply since 2000
- ❑ Median sales value flat nationally since 2000, but
  - nearly tripled for bottom income quartile,
  - doubled for the 2<sup>nd</sup> and 3<sup>rd</sup>,
  - dropped sharply for 4<sup>th</sup> (highest income)
- ❑ By zone
  - Sharp increases in Coastal Lowlands, Western Lowlands and Central Highlands

## Production and sales trends (5)

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- Flat sales per hh mean national production is not keeping up with (rapid) urban population growth

## The System Serving Nairobi

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**Top fresh produce items entering Nairobi, December 2004 – March 2005**

Item	Volume per Day (tons)	Volume Share	Value per Day ('000 Ksh)	Value share
Irish Potatoes	348	0.51	2,787	0.28
Cabbage	59	0.09	1,699	0.17
Tomatoes	50	0.07	1,207	0.12
Carrots	43	0.06	870	0.09
Bananas	38	0.06	1,142	0.11
Onions	36	0.05	718	0.07
Green Maize	31	0.05	234	0.02
Mango	28	0.04	555	0.06
Sukuma Wiki	16	0.02	237	0.02
Watermelon	10	0.01	86	0.01
Oranges	8	0.01	272	0.03
Pineapples	6	0.01	53	0.01
Sweet Potato	5	0.01	80	0.01
Plums	5	0.01	.	0.00
Total	687		9,997	

Source: Computed by authors from Tegemeo's monitoring of wholesale markets in Nairobi

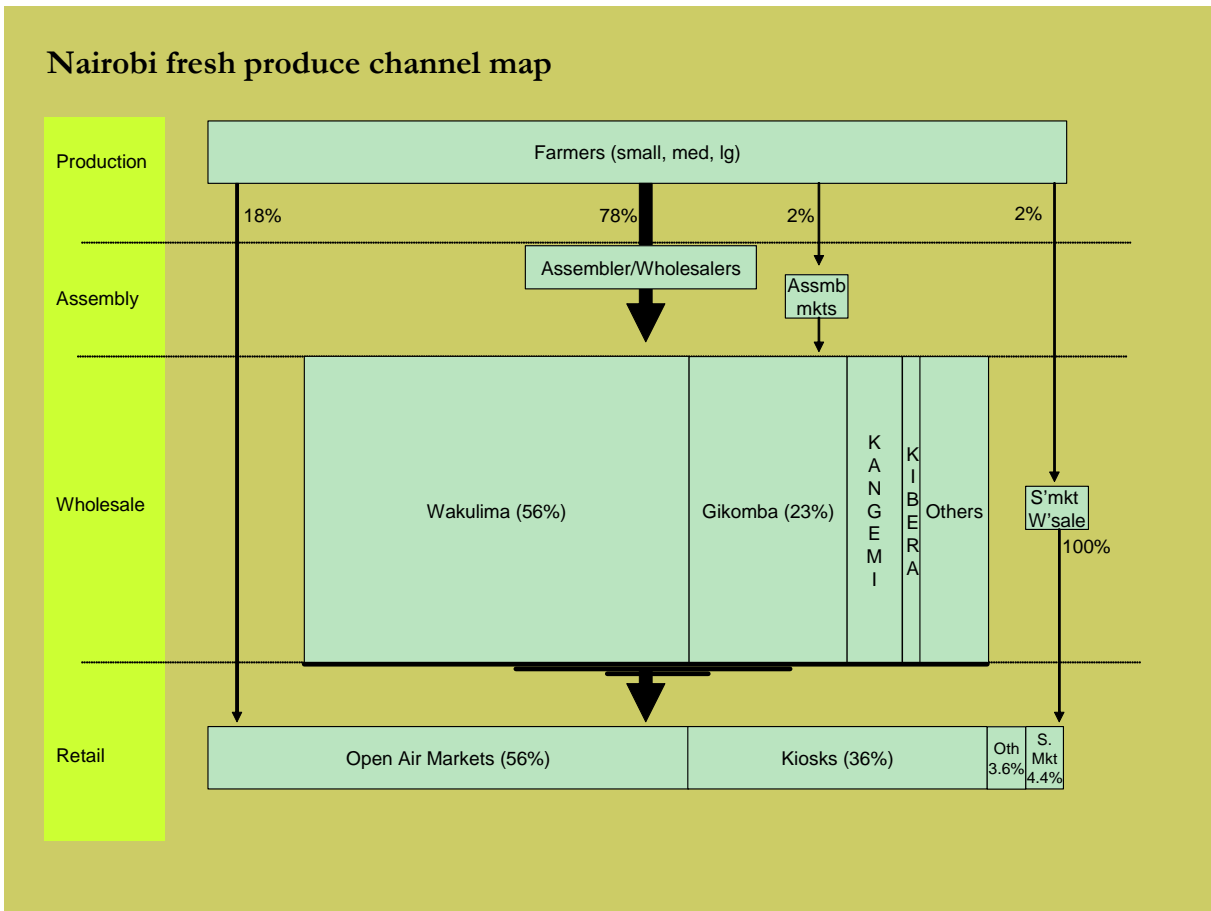
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*Over ¾ accounted for by top 5*

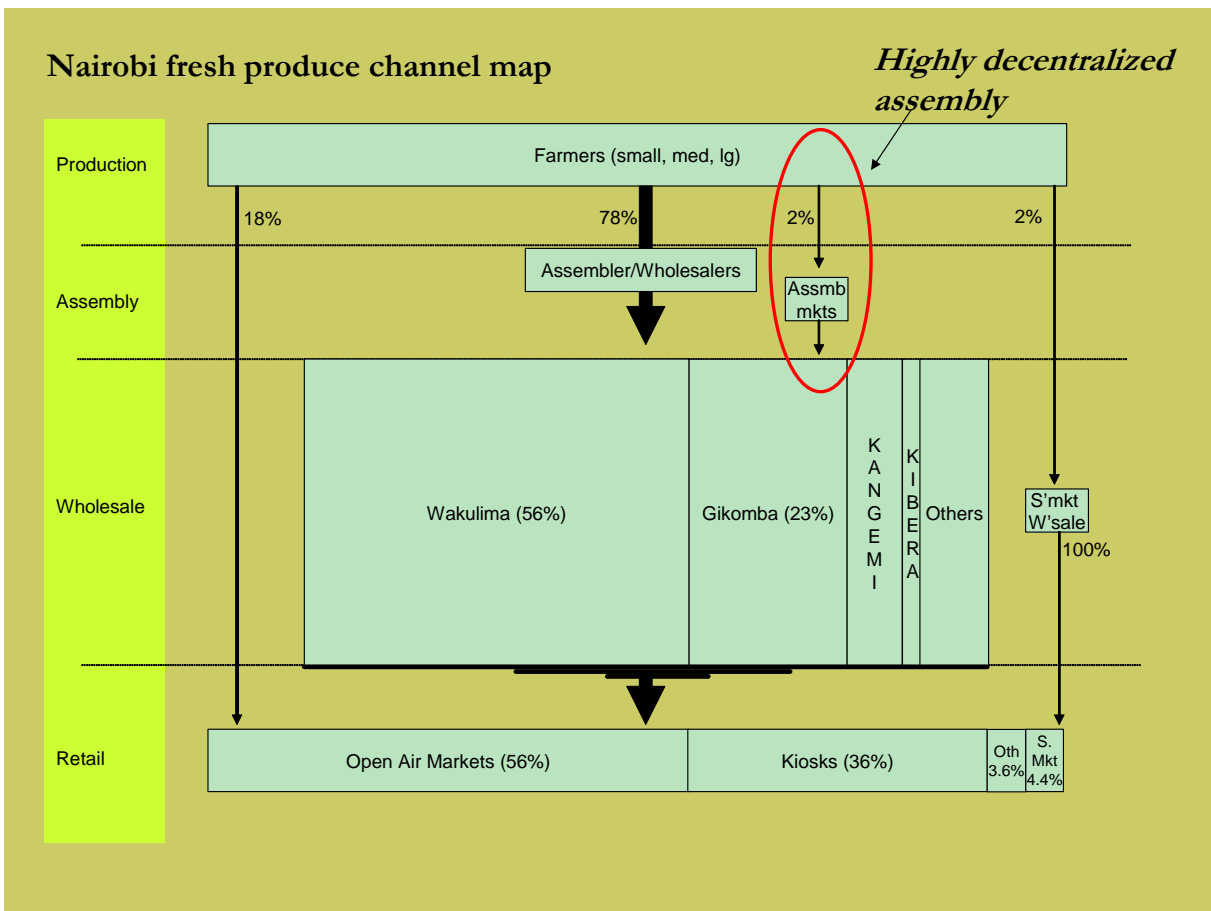
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## Nairobi fresh produce channel map



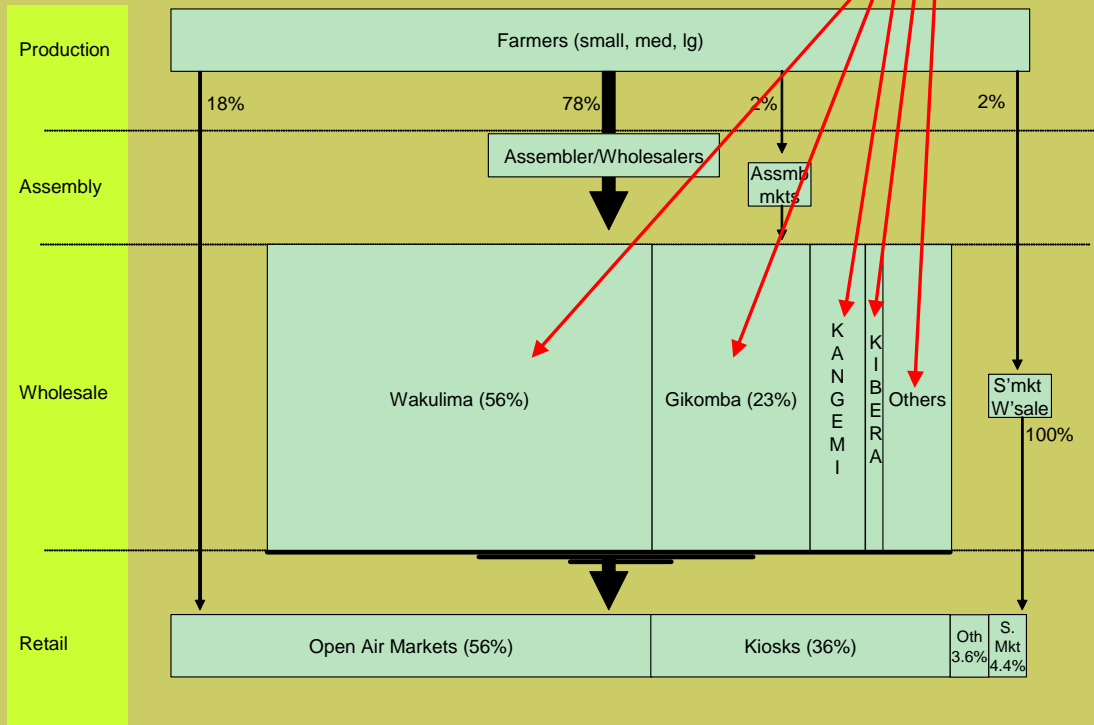
## Nairobi fresh produce channel map

*Highly decentralized assembly*



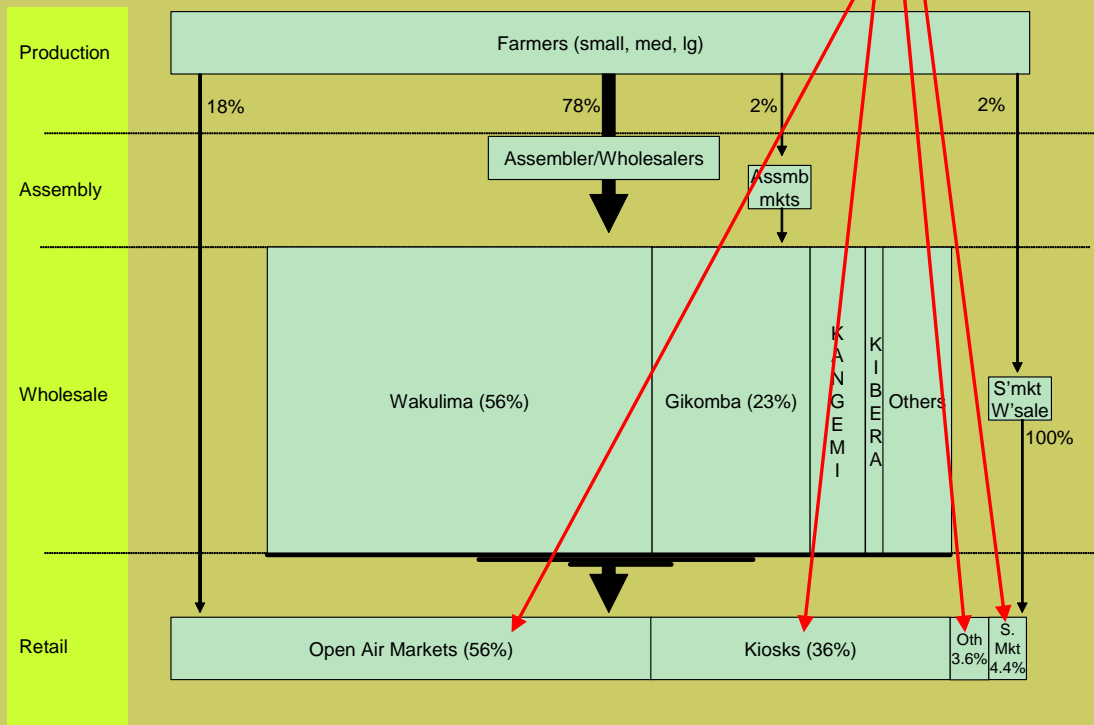
## Nairobi fresh produce channel map

*Decentralized wholesaling*



## Nairobi fresh produce channel map

*Dominance of traditional markets*



## Decentralized assembly

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- Very little produce goes through rural assembly markets (2%)
  - Traders go farm-to-farm
- Yet production of given products is relatively concentrated geographically
  - 78% of tomato from Kirinyaga;
  - 46% of Irish potato and 55% of cabbage from Nyandarua
  - 63% of mangos from Machakos
- So more formalized assembly could be economically viable
  - And provide more bargaining power for farmers

## Decentralized wholesaling

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- Spontaneous reaction to the lack of investment in Wakulima and growth in Nairobi's population
  - The only market built to do wholesaling, now inadequate
- Also specialization
  - Gikomba receives 55%-70% of tomato, cabbage, green maize, and sukuma wiki
  - Wakulima > 80% of Irish potato, carrots, onions, mango (75%), watermelon, orange
- Secondary wholesaling also common
  - Product shipped from Wakulima or Gikomba to retail market by secondary wholesalers, purchased there by retailers

## Dominance of traditional markets

- Based on price, proximity, perceived freshness, cultural factors
- Recent literature suggests that rate of supermarket growth in low income countries likely to be lower than some previously thought
  - Especially in fresh produce
  - Consistent with Tegemeo's message over past four years

### Size of fresh produce retail markets in Nairobi

Market	By Approx Number of FFV Traders	
	N	Share <sup>1</sup>
Marikiti	1,670	0.29
Gikomba	1,456	0.26
Korogocho	754	0.13
Kibera-Toi	730	0.13
Kangemi	403	0.07
Kawangware	306	0.05
Jogoo Road	167	0.03
Wangigi	128	0.02
Westlands	22	0.00
City Market	21	0.00
Jericho Market	19	0.00
Westlands	9	0.00

## Trader characteristics

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- Typical market stall owners
  - 35 year old woman, formerly unemployed or working in other trading activity, providing nearly all family's income
  - In most markets, has worked business 3-12 years
- Typical kiosk owners
  - 30 year old woman, formerly unemployed or working in other trading activity, providing about half of family's income
  - Has typically run the business < 1 year

*Kiosks are a much more precarious and less profitable business but probably a good entry point for some*

## Selected performance indicators

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Market	Margins (% of purch. Price)		Net Income last month (median)
	Gross	Net	Mean
Kibera	18.1	14.2	9,000
Gikomba	15.3	12.3	11,050
Kangemi	21.2	15.8	9,250
Korogocho	13.7	9.9	8,167
City Market	18.6	17	36,000
Kiosks			4,250

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*Gross and net margins are not high*

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*Net income comparable across markets, except for City Market, while kiosks much lower*

## Conclusions and key policy messages

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- Despite very little investment over past few decades, traditional system
  - Continues to carry bulk of fresh produce
  - Does so at remarkably low cost
  - While providing employment to many people
- The system is adaptable, as shown especially by the kiosk sector

## Conclusions and key policy messages (2)

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- As country works to modernize its food system under Vision 2030:
  - New investments must be planned in close collaboration with private sector, ...
  - ... which must have major role in management of new and existing facilities
  - Major positive steps in this direction include:
    - Work by Horticultural Task Force
    - Collaboration of Municipal Council with private sector in upgrading some kiosks



## Conclusions and key policy messages (3)

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- As country works to modernize its food system under Vision 2030 (cont'd):
  - Realize that traders and consumers will remain strongly tied to existing wholesale and retail market places,
  - Planning and implementing new wholesale and retail investments will run into delays,
  - Improving infrastructure in existing market places would “quick wins” as new wholesale and retail investments are developed

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Thank You