



INCATA: Linked Farms and Enterprises for Inclusive Agricultural Transformation in Africa and Asia

INCATA Project: Main messages

February, 2026



Funded by the Gates Foundation

INCATA's objective is to study the relationship between commercial small-scale producers (cSSPs) and micro, small, and medium enterprises (MSMEs) in the “Hidden Middle” (Reardon, 2015) of agrifood value chains, explaining how it underpins and contributes to an inclusive agricultural transformation.

Questions to answer:

- 1) cSSPs** What are the prevailing patterns of commercialization among small-scale producers and the key policy- and non-policy-related factors that shape their engagement with “hidden-middle” MSMEs?
- 2) cSSPs and MSMEs** Which cSSPs and MSMEs succeed in raising incomes, investing, adopting new technologies, and accessing larger or higher-value markets during the transformation process—and why do others lag?
- 3) Inclusion** To what extent does greater commercialization of SSPs and the expansion of MSMEs translate into poverty reduction and advances in women’s economic empowerment (WEE)?
- 4) Policies and interventions** Which investments and policies have the greatest potential to accelerate the symbiotic co-development of cSSPs and MSMEs?

Through two workstreams:

- LSMS-ISA data analyses for six countries:
- Horticulture and aquaculture value chain extensive surveys in : in Kenya, led by Tegemeo Institute, and in Odisha, India, led by IFPRI.

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Phase 1: Literature review on the role of commercial SSPs in the inclusive agricultural transformation (2022-23)

Phase 2: INCATA Project (Feb. 2024-Feb 2026)



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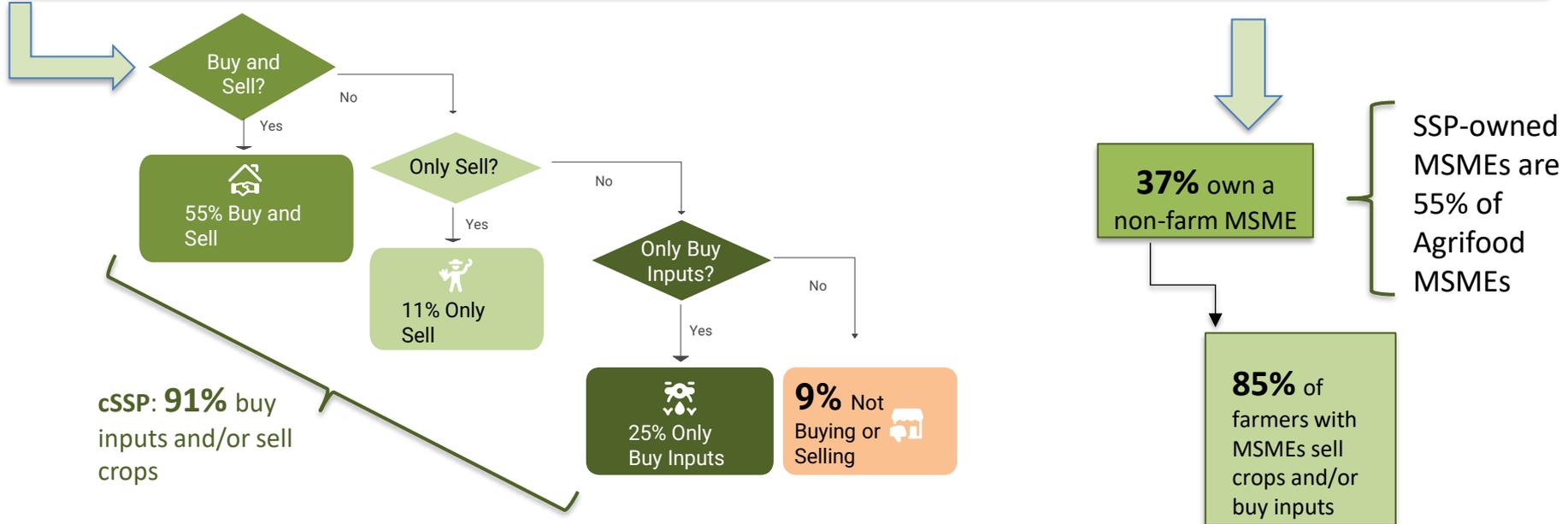
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- #1:** Small-scale producers (SSP) are highly commercialized and engaged with MSMEs.
- #2:** The horticulture value chain is providing employment, growth, inclusion and diversification.
- #3:** Wholesale markets are engines of value chains, feeding and employing millions, yet are challenged.
- #4:** In the past decade there has been a rapid development of spontaneous clusters of farms & Hidden-Middle MSMEs.
- #5:** Mutually beneficial relationships between cSSPs and MSMEs are enabling inclusive transformation of horticulture value chains.

Key message #1:

Small-scale producers (SSP) are highly commercialized and engaged with MSMEs.

SSPs account for 64% (Ghana) to 96% (Malawi) of farmers (LSMS) and 62% (Ghana) to 86% (Uganda) of food crop output.

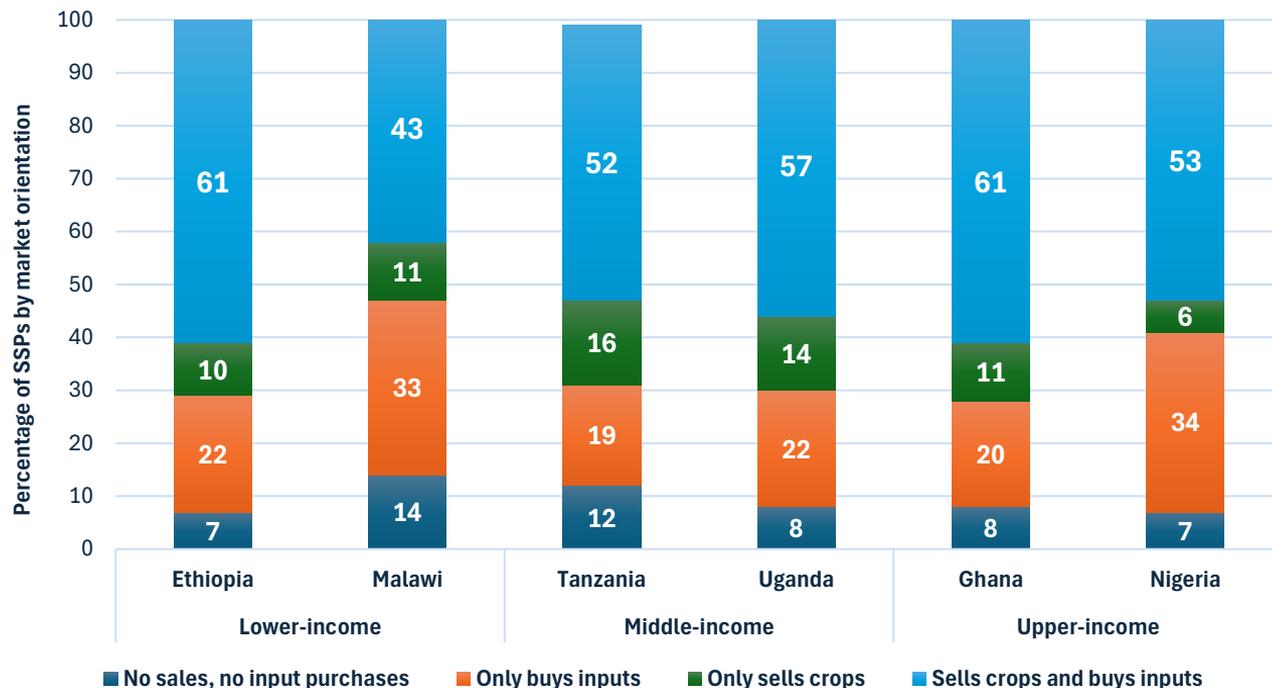


Being a cSSP and/or owning an MSME in highly clustered areas is linked to greater well-being and inclusion opportunities.

Figure 1. Distribution of SSPs based on input purchases and crop sales, by country (%).

- SSP income is diversified: farm income is about 1/3 of income
- **Two-sided market linkages: 56%** both buy inputs and sell crops; **<14%** neither buy nor sell
- 1/3 of SSPs (20% in Ethiopia to 58% in Nigeria) own a non-farm MSME

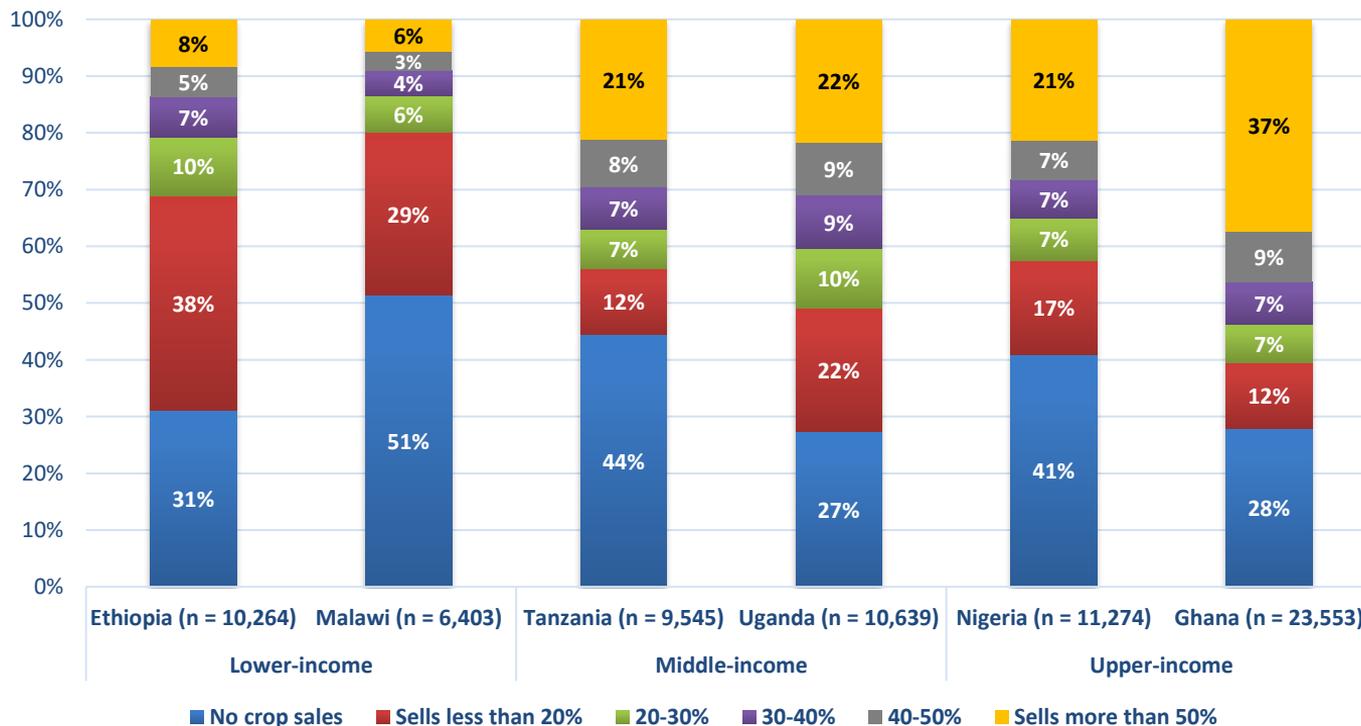
SSP participation in input and output markets (%)



Source: LSMS-ISA data

Figure 2. Shares of sales in output of small farmers: crops only (not livestock)

Distribution of commercialization among small farmers based on share of crop production sold.



- **Majority sell crops - 59%, 64%, 65% over lower, middle, upper country strata**
- **Minority do not sell (40%, 36%, 35% over country income strata)**
- **25% are “super-sellers” in middle & upper countries**

Source: LSMS-ISA data

Inclusion pathways for SSPs:

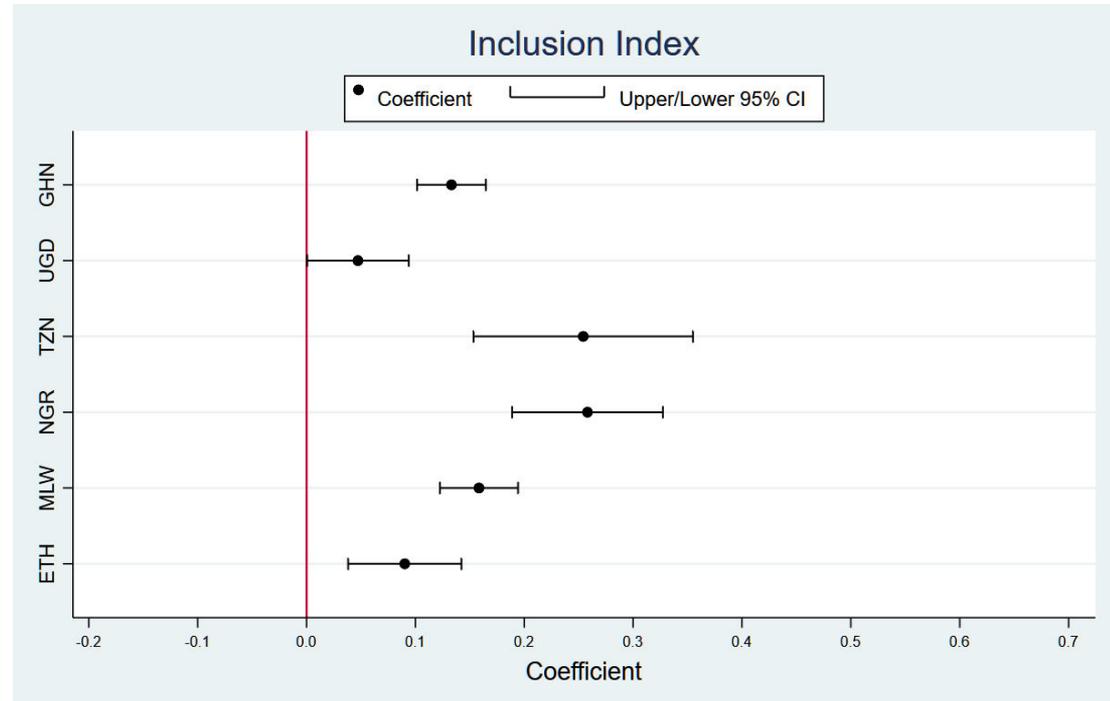
- **Selling crops and/or having an MSME in agrifood value chains has strong association with :**

... our summary inclusion index.

... women's empowerment

... off-farm income.

Wellbeing on Selling Crops and/or Owning an MSME.



Inclusion index is a summary composite indicator of five variables: poverty, resilience, food consumption score, women's empowerment and employment.

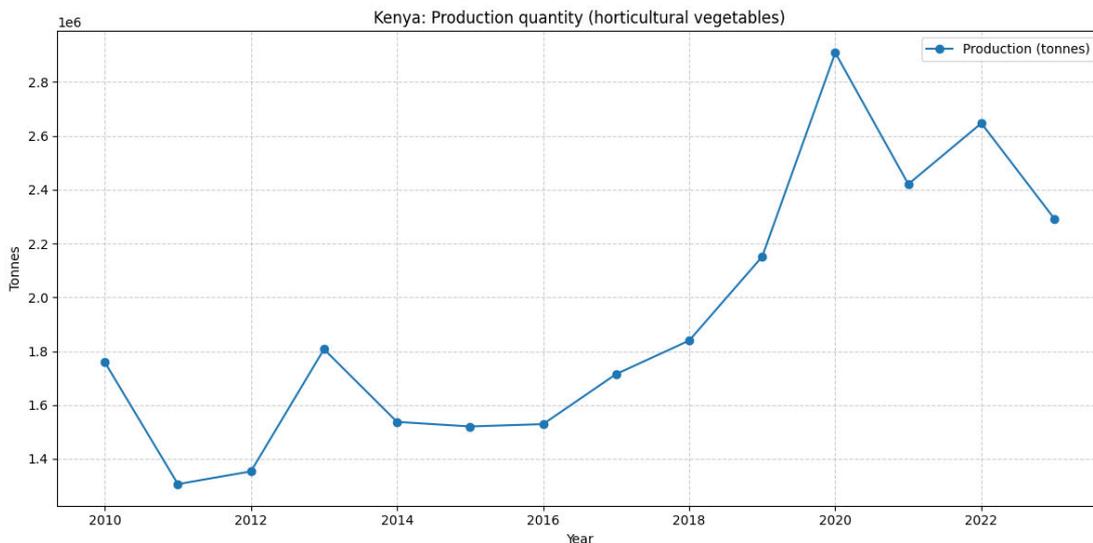
Key message #2:

**The horticulture value chain is providing
employment, growth, inclusion and
diversification**

Growth of horticulture for SSPs

- Horticulture production in Ethiopia, Malawi, Uganda, Tanzania, Nigeria, Ghana, Kenya (2010-2023, FAOSTAT).
- **Output grew fast: +61%**
- **Almost all grown for local consumers; exports and imports each only ~2% of output.**

Horticulture total production (Kenya), 2010-2023.



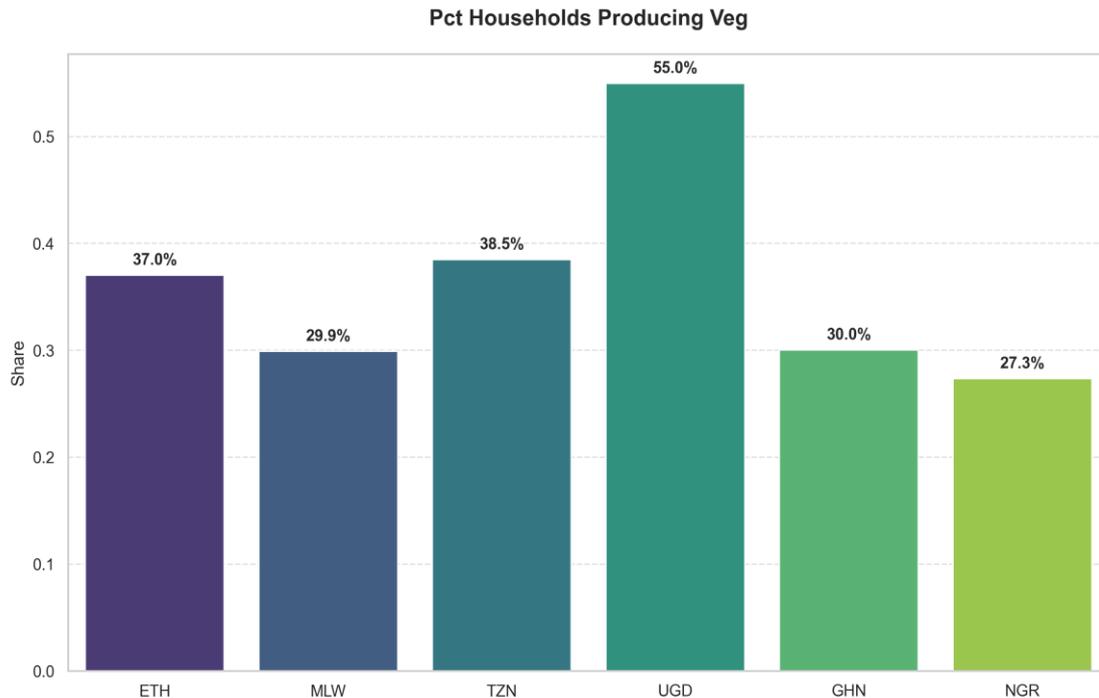
Source: FAOSTAT

Horticulture production

- **Widespread among small farmers: 27% to 55% grow vegetables**
- **The smaller the farmer, the higher the share of vegetables in crop output**
- **Farmers growing vegetables are more likely to buy seeds and fertilizer (than non-veg farmers)**

Source: LSMS-ISA

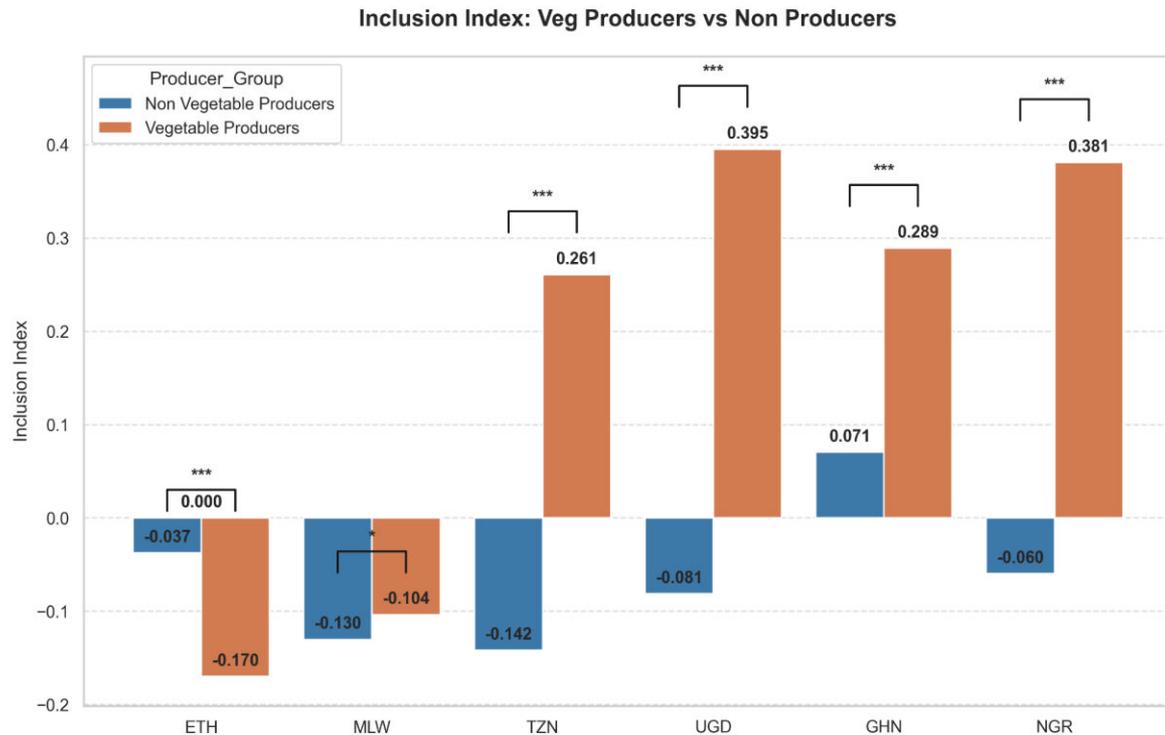
Share of SSPs producing any amount of vegetables (LSMS-ISA).



Inclusion index: vegetable producers vs non-vegetable producers (LSMS-ISA).

Horticulture is an inclusion pathway for SSPs:

- SSPs who grow vegetables score higher on our Inclusion Index (than other SSPs).
- Only exception is Ethiopia.



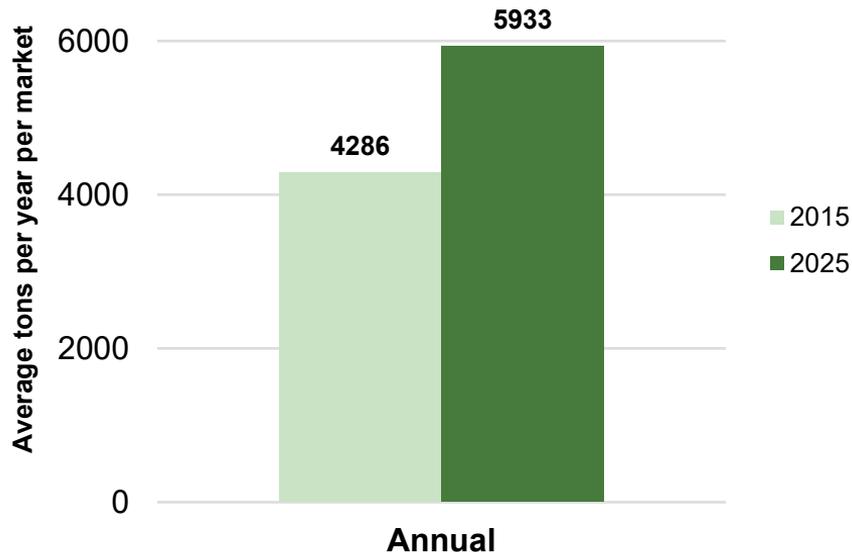
Key message #3:

Wholesale markets are engines of value chains, feeding and employing millions, yet are challenged.

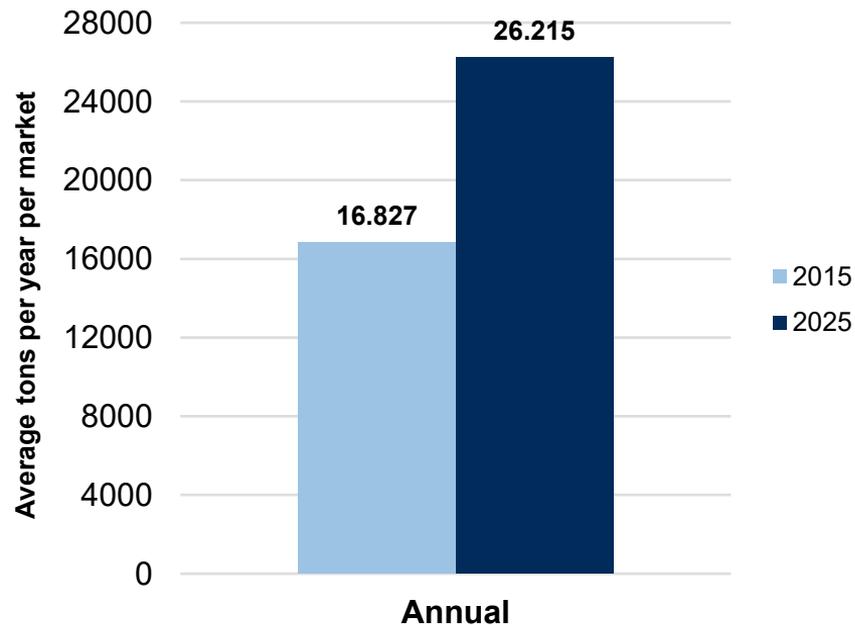
- Universe of tomato WMs in Kenya (234)
 - Universe of vegetable WMs in 4 blocks within 6 selected districts in Odisha +4 terminal markets (100)
1. Large volumes via WMs (and many actors per market)
 2. Rapid growth in volumes: central to national food security
 3. Rapid growth in employment: wholesalers; retailers; transporters; ancillary (farm input and equipment suppliers; cold storages; packaging suppliers; bank branches & ATMs)
 4. WMs are often inclusive; **varying by segment and measure**: the great majority of actors are nano/small MSMEs; many are women (Kenya (all nodes) and retail for Odisha).
 5. Despite their huge importance, WMs face big infrastructure challenges (toilets, water)

Rapidly growing markets are feeding millions (1 market feeds ~ 312,270 people (Odisha) and 692,000 people (Kenya) given estimates of annual per capita consumption)

Average annual tomato deliveries per market
over 10 years (tons/year)



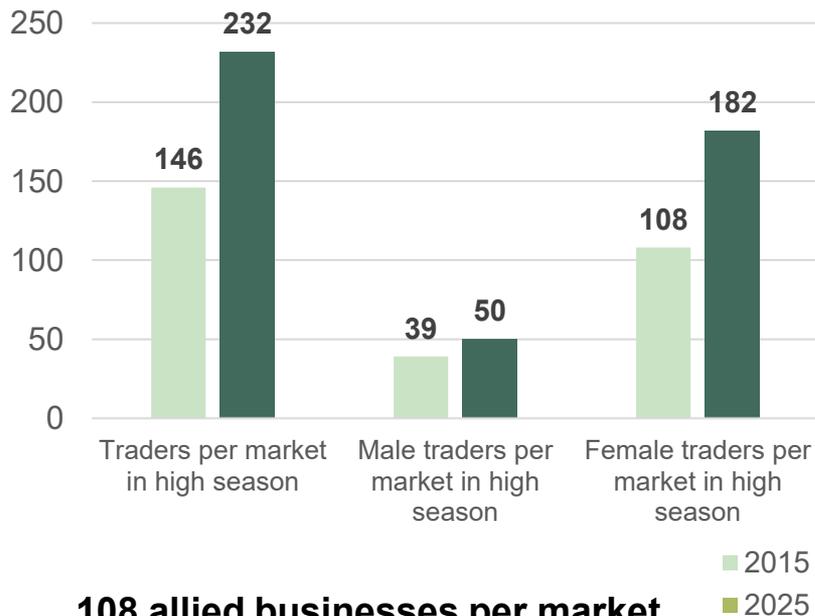
Average annual vegetable deliveries per
market (t/year)



Growing number of people employed in WM (traders + allied services)

Number of intermediaries (wholesalers + retailers) per market over 10 years

Kenya



108 allied businesses per market

Odisha



30 allied businesses per market

Kenya and Odisha: Market infrastructure challenges

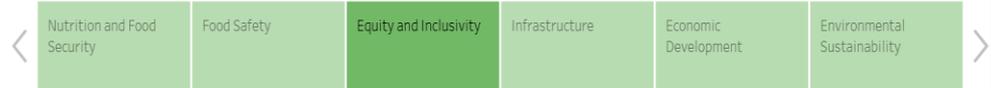
	Kenya	Odisha
Market has a toilet (%)	87	30
Trader-toilet ratio (avg.)	143	102
Market has electricity from the grid (%)	79	38
Average number of hours per day market has electricity (cond. Avg.)	22	20
Market has electricity from solar (%)	31	n.a.
Market has no water (%)	29	18
Market has pipe borne water (%)	62	35

INCATA in collaboration with Gates Foundation funded project RSM2SF “Research Supporting African MSMEs to Provide Safe and Nutritious Food”: Market Dashboard

Includes data on:

- 680 Wholesale markets
- Market infrastructure/services
- Market governance
- Quantities traded
- Economic development indicators

Market Data



Market level Indicators for Equity and Inclusivity Dimension

Market	Women are engaged in ANY market governance positions	Women are engaged in OVERALL market governance po..	Women have access to a functional toilet	% of female owned businesses in the market	% of youth owned businesses in the market
Alau Dam Fish Market	Yes	No	Yes	0	30
Baga Road Fish Market	Yes	No	Yes	1	65
Bakassi Fish Market	Yes	No	Yes	20	0
Bargu Fish Market	No	No	Yes	12	62
Damask Fish Market	No	No	Yes	0	60
Danboa Fish Market	No	No	Yes	0	70
Doro Fish Market	No	No	Yes	1	70
Gamboru	Yes	No	Yes	25	30
Kasugula Market	Yes	No	Yes	30	10
Laadi Market Dikwa	Yes	No	Yes	0	50
Lahadi Market	Yes	No	No	1	70
Messara Fish Market	No	No	Yes	0	60

Country

- Kenya
- Nigeria
- Tanzania

County/State/City

BORNO

Product

- Fish
- GLV
- Tomato

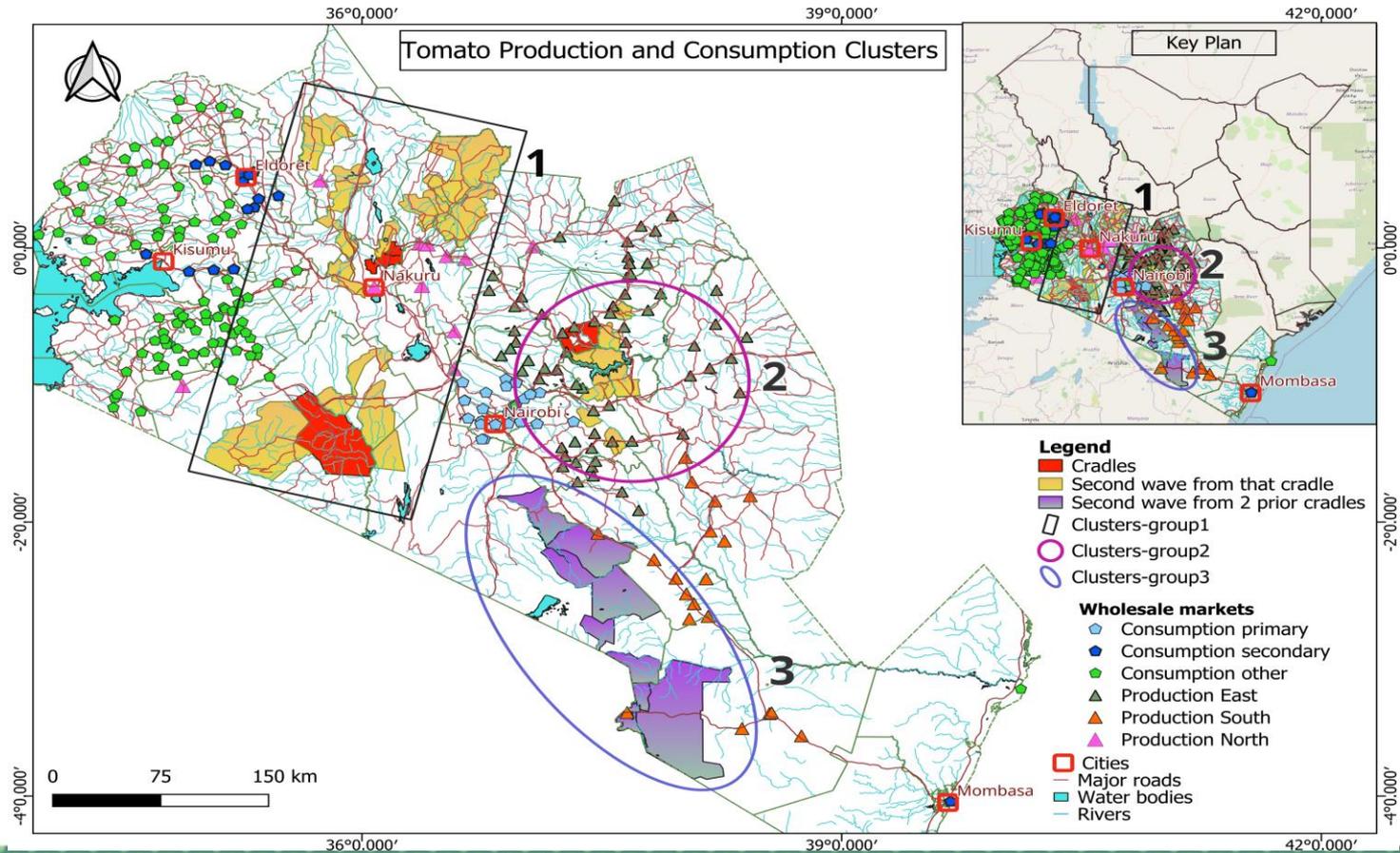
Key message #4:

In the past decade there has been a rapid development of spontaneous clusters of farms & Hidden-Middle MSMEs

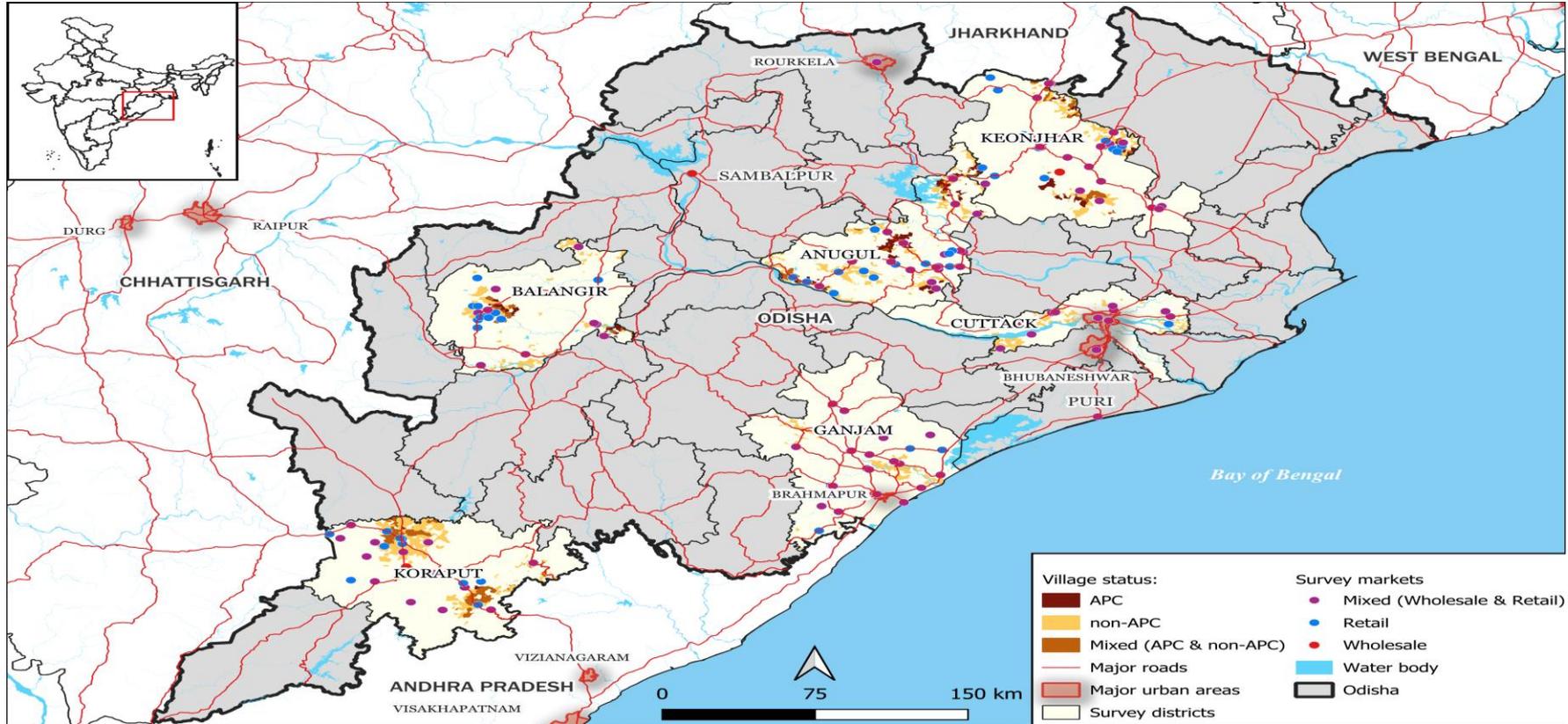
- a) **Meso surveys show rapid spread of clusters over 1-2 decades**
- b) **Two types of clusters**
 - **Government-established clusters** (some APCs in Odisha; none in Kenya tomato)
 - **Spontaneous clusters – most common cluster type in Kenya & Odisha**
 - Not directly set up by government, big company, or NGO
 - Spread over space as “cradles” of farms & MSMEs then from each cradle, secondary waves

- **Spontaneous clusters develop due to:**
 - **“blood & bones”** (roads to demand motors (cities), wholesale markets, electricity)
 - **Water access**
 - **Land access** – especially land rental
 - **Change agents** (traders and input suppliers bringing capital and new seeds)
 - **In-migration** from towns and other zones
 - **Spill-overs from other clusters** (flower cluster → seedlings clusters first for flower then for tomatoes & potatoes etc.)

Kenya Clusters



Odisha clusters



Key message #5:

**Mutually beneficial relationships between cSSPs
and MSMEs are enabling inclusive transformation
of horticulture value chains**

a) NEW STRUCTURE

a.1) Old: “many hands”; New: “disintermediation”

Wholesalers based in cities/towns are now buying directly from farmers (cutting out brokers):

... already common in Kenya: 77% (76% in the case of women traders)

... emerging (14%) in Odisha (plus 13% from own-farm)

→ **Farmers still sell mainly via traders, but increasingly directly to wholesalers in towns**

a.2) **use of Third-Party-Logistics (3PLS) (transporters) (a hugely neglected actor set!)**

... already common in Kenya: 52% of wholesalers use 3PLS

... emerging in Odisha (31%)

b) NEW PRACTICE

b.1) **OLD:** traders often pay in advance to “tie down” the farmer; **NEW:** few traders pay in advance to farmers

... in Kenya, 1%; in Odisha, 4-5%

b.2) **OLD:** traders pay farmers late to extract de facto credit
NEW: traders mainly pay farmers on time or soon

... in Kenya, 92%

b.3) **OLD:** training is by government, input sellers don't train farmers;
NEW: lots of input sellers train farmers

... in Kenya, 46% of farmers got training (49% women, 45% men), 87% of them from input sellers

b) NEW PRACTICE

b.4) OLD: farmers are left in the dark on market prices; NEW: farmers get price info from traders, friends and neighbors, brokers (but not from apps).

..... Kenya: price information provided by traders (46%), friends and neighbors (+60%), brokers (+60%), apps (2%).

b.5) OLD: No crop grading; NEW: grading before selling

.....Kenya: traders pay third party to do grading (75%) or grade the crops themselves (15%); Odisha: farmers grading before selling.

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