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How are vegetable markets in Odisha transforming?

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Key highlights

- Odisha's market environment for vegetables is a complex mosaic of diverse institutions – including marketplaces regulated by the Odisha State Agricultural Marketing Board (OSAMB), those under local governments and those that private and unregulated.
- Since the 2000s, the State's agricultural marketing policy has been progressively reformed to allow contract farming, establish private markets, free vegetable trade from regulatory purview and abolish fees associated with transacting in the regulated markets.
- This note presents results from a survey of 158 vegetable markets in six districts: Anugul, Bolangir, Cuttack, Ganjam, Keonjhar, and Koraput. It also covers four terminal markets in Bhubaneshwar, Puri, Rourkela, and Sambalpur.
- Contrary to popular belief about restrictive regulation and an overbearing state, over 90% of estimated vegetable deliveries in the study area arrive at unregulated markets.
- We estimate that each trader serves about 258-552 people and 4.1-8.39 operational holdings in the study area, depending on the season. There are approximately 18 retailers for every wholesaler.
- Vegetable markets have seen rapid transformation in recent years.
  - Markets, especially private markets, have proliferated. More of them have become daily markets operating more days per week and hours per day. In 2025, they have a greater proportion and number of permanent stalls than in 2015.
  - Both wholesalers and retailers have grown significantly in the past decade—wholesalers by 65% and retailers by 20%. Average quantities traded by both groups have increased, along with overall produce deliveries and transactions.

- Growth of volumes traded has been accompanied by market diffusion. The Hirschman-Herfindahl Index (HHI) for volumes delivered and traded declined to 7/10th and 3/5th of 2015 levels, respectively. An overwhelming 89% of the markets registered a growth in arrivals over the decade.
- This transformation is reflected in the villages as well, based on data from a survey of 154 villages in the study area. Two groups – retailers who purchase from farmers and sell within the village and farmers who retail their own produce – have a significant presence and have maintain their presence over the decade. More villages (about 38%) have transporters today who serve as market intermediaries compared to about less than 13% a decade ago. Today, a majority of villages have traders visiting the village during high season to collect produce just as village traders often collect vegetables from farmers to sell to traders outside even though on average there are just 1-2 per village. Collectively, these findings suggest that most villages have local marketing options available.

- A key finding, however, is that vegetable markets—where much of the trade occurs—have limited or poor infrastructure. Further, it may be useful to revisit the process of tendering the functions of market maintenance and operations for a system with greater accountability.

Background

As with much of the rest of India, Odisha's marketing context for vegetables is a complex mosaic of actors and spaces. Until the 1950s, much of Odisha's vegetable trade occurred in local village level markets or *haats* that predate India's Independence in 1947 even if the produce moved long distances. Trade operated largely in the private realm with virtually no state regulation. Unlike other crops favored by the colonial government, vegetables received minimal government involvement in market development.

This changed with the implementation of the Agriculture Produce Market Committee Act in 1956, that aimed to regulate the first point of sale between the farmer and the buyer. Market yards (mandis) established under the APMC were governed by Regulated Market Committees (henceforth RMCs) where farmers sold to licensed traders and the mandi collected a transaction fee.

These RMCs, comprising principal yards and sub-yards, were thus grafted on to a preexisting network of spot markets. The APMC notified the list of commodities that would come under its purview. Traders could only operate in the mandi if they secured a license. However, unlike many other states, the APMC in Odisha permitted wholesalers but did not recognize commission agents as a distinct category i.e. those who mediated a transfer without taking possession of the goods.

With the formation of the Odisha State Agricultural Marketing Board (OSAMB) in 1984, a dedicated body began to oversee market development and regulation. Since the early 2000s Odisha has progressively removed elements in the APMC Act that imposed various restrictions, first allowing contract farming and the establishment of private markets in 2006, then exempting most vegetables from the purview of the APMC Act 1956 and most recently removing mandi fees of 1% in order to attract more vegetable trade into the mandis. Simultaneously, the Government of Odisha has been investing in *Krushak Bazaars* (Farmers' Markets), establishing physical spaces to allow farmer-to-consumer transactions.

Currently, Odisha's vegetables can be sold at village *haats, Krushak Bazaars,* Regulated Market Committee (RMC) yards and private markets. Direct purchases via contract farming are also permitted implying that there are currently few restrictions on where trade can occur. In part because of the considerable diversity in the marketing context, there has been little systematic study of the nature and transformation of markets and marketplaces, although studies of specific markets and commodities exist (Chatterjee et al. 2020; Tiwari and Sahu, 2024). The INCATA study is an effort to fill this gap.

This project note draws on the INCATA Odisha Market Survey, 2025, documenting 158 markets in six districts in Odisha, including four terminal markets that lie outside these districts – Bhubaneshwar, Puri, Rourkela, Sambalpur. The market survey was conducted via Focus Group Discussion (FGD) in each market with a group of diverse participants including wholesalers, retailers, and, where available, with members who manage these markets. The goal of this exercise was to document the origin, features and facilities of the market and trace its evolution over the past decade.

Our survey covered a wide range of topics related to the establishment, infrastructure, operations and management of the market. For this note, however, we focus on two aspects: we characterizing the markets in the sample and documenting the nature of their transformation over the past 10 years, i.e. the period between 2015 and 2025. We supplement this with data from the INCATA Odisha Community Survey in 154 villages across 24 blocks in the six study districts, to map the transformation of the marketing context in the production zones.

Characterizing the markets

Our survey suggests that a significant proportion of the sample markets (40%) have been functioning for longer than the respondents can recall (In 2025, the 158 vegetable markets received 2.25 million tonnes of vegetables over the year; 90% of these vegetable deliveries arrive in markets not regulated by OSAMB. Terminal markets handle 1.5 times the volume of all the other 154 markets combined indicating the vast difference in the scales of operations. Over the course of the market survey, our listing process counted 11805 traders of all types, retailers (who may be farmers themselves), wholesalers and commission agents. This is about 1.9 traders per 1000 people (552 people per trader), 1 trader for 8.39 operational holdings ~ 12 traders/100 vegetable holdings. Our estimates from the market surveys which suggest a total of 23894 traders in high season, puts this ratio at 3.9 traders per 1000 people (or 258 people per trader) and 4.1 holdings per trader or 24 traders/ 100 vegetable operational holdings. There are an estimated 18 retailers per wholesaler.

). Among the markets with a known date of inception, the average age of markets is 32.37 years; half of the markets were established in the past 25 years. These markets were established in diverse ways – some splitting from older markets, some established by groups of traders or by farmers in the village and some others growing organically around demand centers. However, about 74% were established by a government, state or local body. Several private markets too may operate on government land.

As for regulation, as per our survey, just 29% of the markets were reportedly regulated under the APMC and fall under the purview of OSAMB. Thus, contrary to the popular notion that vegetable trade across India is heavily controlled by the state via the APMCs, Odisha's situation suggests that this is not the case.[1] A bulk of the rest are governed by local bodies, and the remaining are self-regulated or unregulated. Among those that are regulated by any government body, it seemed that the running of the markets was tendered out to private players annually for a fee, for rights to collect market user fees

[1] This echoes earlier studies by Sahoo (2015) and Sharma (2012) that a bulk of agricultural trade in Odisha occurs outside the RMCs.

while taking on the responsibility of maintaining and operating the market. This arrangement seemed common in both urban and rural centers.

What do these markets look like? Almost half of all markets are in rural areas and are essentially village marketplaces or *haats* (Table 1). Virtually all are located on or near an all-weather road. Although our survey was of marketplaces, more than half of the markets surveyed (51%) had vendors spilling beyond the recognizable boundaries of the marketplace. An overwhelming proportion of the markets are not specialized vegetable markets; most of the markets had vendors selling non-food items, for example. A third were part of a larger bazaar. These vegetable markets were invariably more than just places to buy and sell vegetables. They serve as hubs for different trades and related enterprises. Wholesalers operated in 63% of the sample markets; the others were exclusively retail markets. Close to a quarter have a self-organized traders' association, although their roles varied significantly across markets.

Figure 1 reveals that vegetable markets in the study area have widely varying levels of infrastructure development. Basic water and sanitation facilities are most common, with tubewell water supply present in 60% of markets and public piped water supply in 28% of markets. Drinking water points are available in only 27% of markets, suggesting a notable gap in basic amenities.

Beyond water, the next tier of facilities shows moderate provision: godowns (storage facilities) are present in half the markets (50%), while cold storage units exist in only 26%. Parking space, essential for the movement of produce and vehicles, is available in just 15% of markets.

More specialized facilities show limited presence. Only 12% of markets have metaled (paved) roads inside the market premises, and facilities like market offices (6%), weigh bridges (6%), and various display, grading, and quality control facilities each appear in 2% or fewer markets. Notably, no markets in the sample have career training centers, and only 1% have childcare facilities.

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Table 1: Sample markets at a glance, 2025

Characteristic	
Age (years) for those established in 1950 or after	32.37

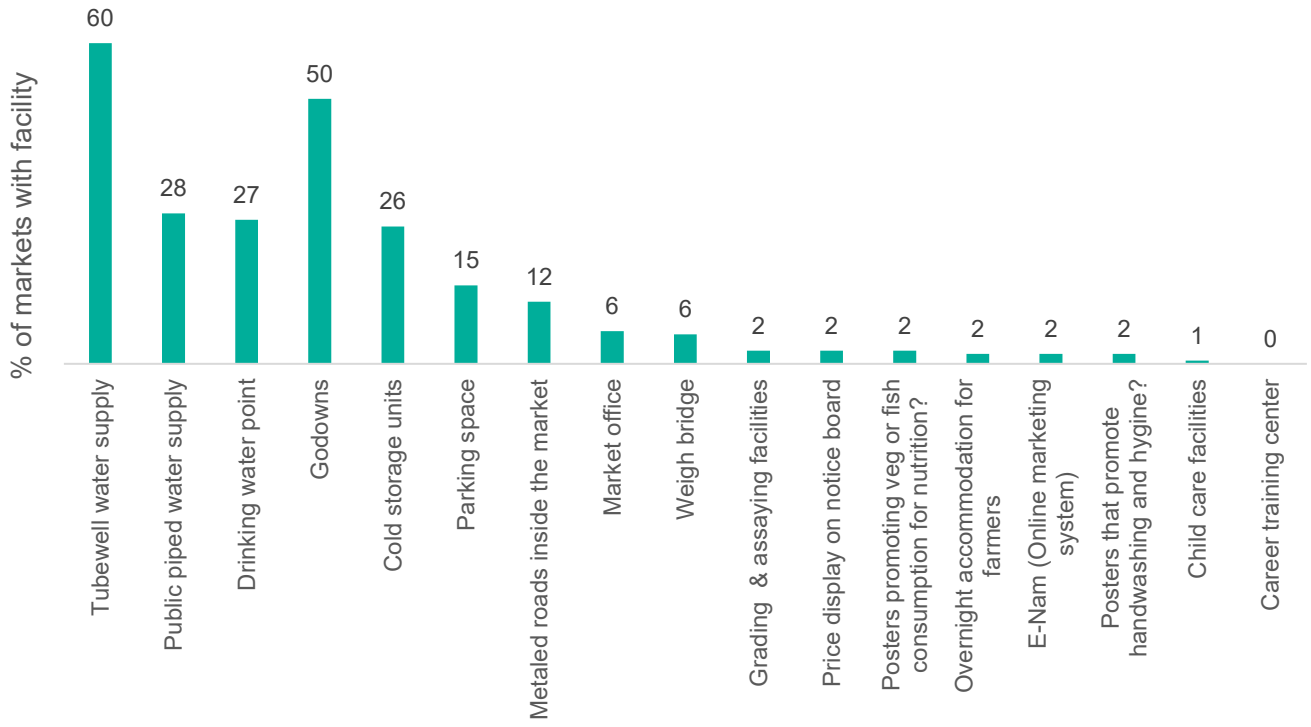
[2] Although Cuttack is a terminal market as well, we count this among the 154 markets surveyed, since Cuttack is a study district.

[3] We assume that the population of the 24 sample blocks and the four cities where the terminal markets are located total 6.16 million people as of 2025. For operational holdings we assume, based on the INCATA Odisha Houselisting 2025, that 25% of the 3.958 lakh operational holdings estimated in the Agricultural Census 2015-16 grow vegetables.

Proportion of markets (that are):	
• Older than the respondents can recall	0.40
• In a Gram Panchayat (Rural haat)	0.49
• Established by the government (GP/municipal or state government)	0.74
• Operate on government land	0.87
• Part of a larger bazaar	0.31
• Non-food items are sold in the market	0.85
• Vegetable vendors and traders also operate outside the main market	0.51
• Wholesalers operate in the market	0.63
• Regulated by any government/government-related body	0.72
• Regulated by OSAMB	0.29
• Market has self-organized traders association or union	0.24

Source: INCATA Odisha Market Survey, 2025.

Figure 1: Market infrastructure, 2025



Source: INCATA Odisha Market Survey, 2025.

How did these marketplaces transform over the decade?

More (private) markets and perennialization of markets

A key marker of agricultural commercialization is the “perennialization” of markets, i.e., that periodic markets become more permanent and regular. In the case of our sample markets in Odisha, the past decade has seen multiple markers of commercialization (

Table 2). First, there has been a proliferation of markets; furthermore, of the 154 markets surveyed they have transformed into daily markets from being weekly markets a decade earlier. In 2025 sample markets on average were reported to work more days per week and more hours per day than they did a decade earlier. This expansion in work hours is suggestive of either an expansion to accommodate production or consumption or greater pass-through of produce, both, each of which may necessitate extended working hours. The proportion and number of permanent stalls (or stalls that are *pucca* i.e., with permanent structure with roof and walls) increased as well (

Table 2).

Figure 2 shows a timeline for the proportion of present-day market that existed in a given year (x-axis).[4] Whereas a bulk of the public and other markets under local governments were established in the 1980s, a significant share of the private markets appear to have been established after the mid-1990s, dominated the growth of the former types of market. While the recent spurt has been gradual and does not specifically coincide with a key policy change, it is evident that private markets grew in the era of a more liberal regulatory regime.

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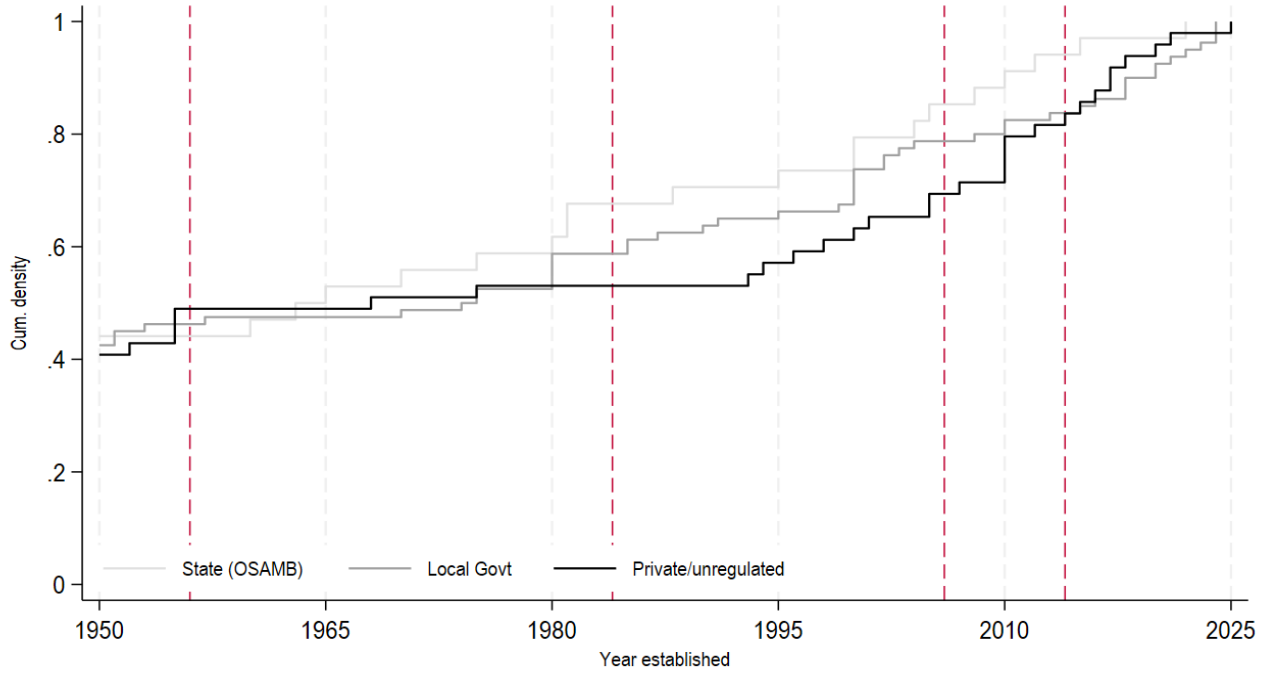
Figure 2: When were the markets established?

[4] Note that there may be markets that don’t exist any longer.



Source: INCATA Odisha Market Survey, 2025

As part of the market survey, we asked respondents to discuss the trends in the block overall of different types of markets. Notwithstanding the differences in responses across respondents in different markets within the block, we report the response that had the maximum value.[5] Daily markets for vegetables in the sample blocks increased at a faster rate (a decadal growth of 49%) than the weekly *haats in* the block (39%) – confirming the findings from the sample markets, but also suggesting new weekly *haats* are mushrooming as part of the transformation. Noteworthy is that transportation hubs (i.e. spaces where trucks transporting vegetables assemble to aggregate or distribute to traders and other transporters) increased by 87%, likely reflecting the growing connectedness of production and consumption zones both within and outside Odisha.

Expanding traders and volumes, diffused growth and densification of ancillary enterprises

As one would expect, with the proliferation and expansion of markets, there has been a significant increase (88%) in the average number of stalls per market (Table 2). There has been a significant increase in the number of wholesalers (66%) and retailers (19%) in surveyed markets in 10 years (Figure 3), driven primarily by growth in the number of male traders (26% increase in total number of male wholesalers and retailers per market, in contrast to just 7% increase in total women traders).

The total volume of vegetables traded in surveyed markets increased 53% in 10 years. Low season volumes increased slightly faster than high season (58% versus 51%), suggesting likely growth in off-season production. Our data suggests growth in volumes of vegetables traded occurred more at the intensive margin so that traders were operating on a larger scale on average in 2025 than in 2015, and both segments became relatively less gender inclusive over time. Growth in volume of vegetables traded per

[5] On the one hand it is possible that those who report lower figures were not aware of all the markets; second, choosing the higher figure from a decade ago may ensure that we have a conservative estimate of the growth in the numbers of these markets.

trader is comparable to the growth rate at the market level in vegetable deliveries. Faster growth in retailer trade volumes than wholesaler, may indicate increase in sales of own/locally sourced produce**,**

Reflecting the overall rapid changes in transport and mobility, there is a marked shift in the modes of transporting produce (Figure 6). Deliveries by pedestrians and bicycles have given way to deliveries on motorbikes and in autos (which have larger capacity, are faster and convenient). It was not uncommon for farmers to share an auto to bring produce to the market for retail sales or for sale to traders. The increase in deliveries by larger vehicles, especially largest (20-ton truck deliveries up 144%). Together these trends suggest simultaneous increases in local and out-of-state vegetables supplies.

It is worth noting that the increase in the number of traders and volumes far outstrip Odisha's decadal population growth (an estimated 12%) so that more vegetables is traded per capita than a decade ago.

To better understand the nature of transformation, we computed the Hirschmann-Herfindahl Index (HHI), a measure of concentration, i.e. the weighted average share of each market, where the weights are their shares themselves. The resulting metric lies between 0 and 1 where 1 implies complete concentration (with one market conducting all trade) and a number closer to 0 indicating that all the markets are responsible for a small share of the trade each. We find a marked decrease in the HHI both for volumes traded and volumes delivered, suggesting that the growth has been even and come with diffusion across markets (

Table 2). Our data suggests that as many as 89% of the sample markets grew.

Borewell digging business, cold storage units and farmer producer company (FPC) presence in the marketplaces have increased dramatically, primarily on account of the very low base – suggesting that the recency of these enterprises and facilities (Table 3). Although the numbers of godowns and cold storage units, especially in public markets, those in active use tend to be few and far between. Interestingly, clusters of enterprises around markets providing ancillary services grew more quickly than the number of markets, suggesting cluster densification took place (Table 3).

Table 2: Market transformation, 2015 and 2025

	Now	10 years ago	% change
Number of markets	158	154	2.5
Share of markets that operate daily	42	36	13
Days per week market is operational for all markets	576	475	21
Mean days per week is operational	4	3	33
Hours per week that the market is operational- mean (std deviation)	43 (42.2)	36 (37.0)	19
Share of markets with pucca stalls	49	31	57
Total number of pucca stalls	2322	1163	100
Average no. of stalls per market	30	16	88
Number of the following in the sample block in which the survey market is located			
Daily vegetable markets in the block	290	216	34

Weekly *haats* in the block	660	530	25
Transport logistics hub in the block	97	53	83
Hirschman-Herfindahl index for deliveries	0.23	0.30	
Hirschman-Herfindahl index for traded volumes	0.26	0.42	

Source: INCATA Odisha Market Survey, 2025. Notes: * this is derived from the year of establishment and is hence approximate, since it does not factor in markets that may have existed then but died since.

Figure 3: Average number of (a) wholesalers and (b) retailers operating per market during high season, 2015 and 2025

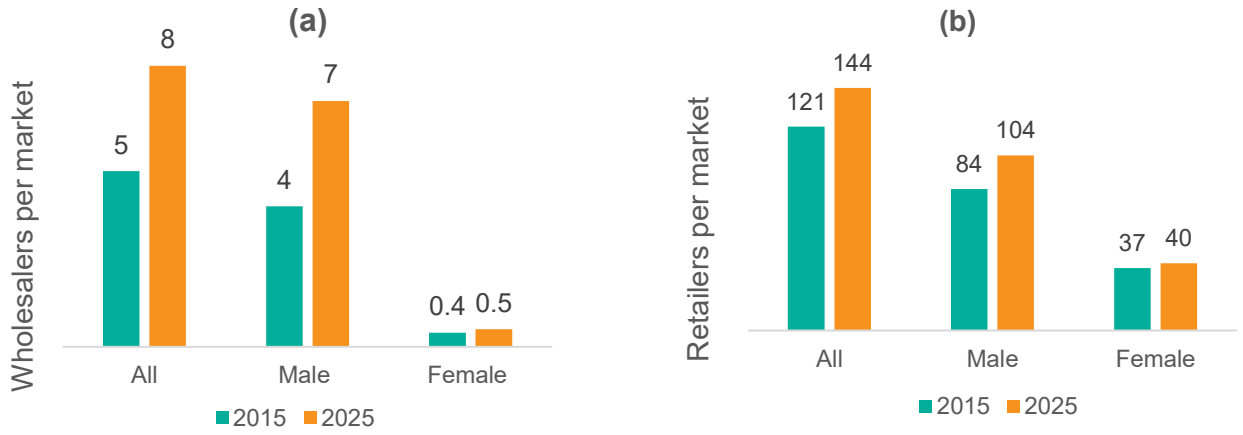


Figure 4: Average quantity of vegetables delivered per market: (a) t/year; (b) t/day, in high and low season (2015 and 2025)

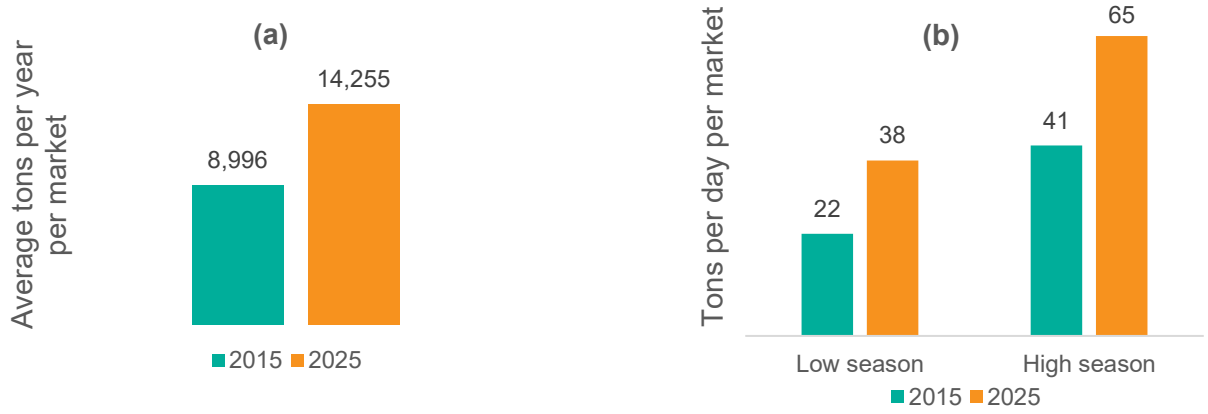
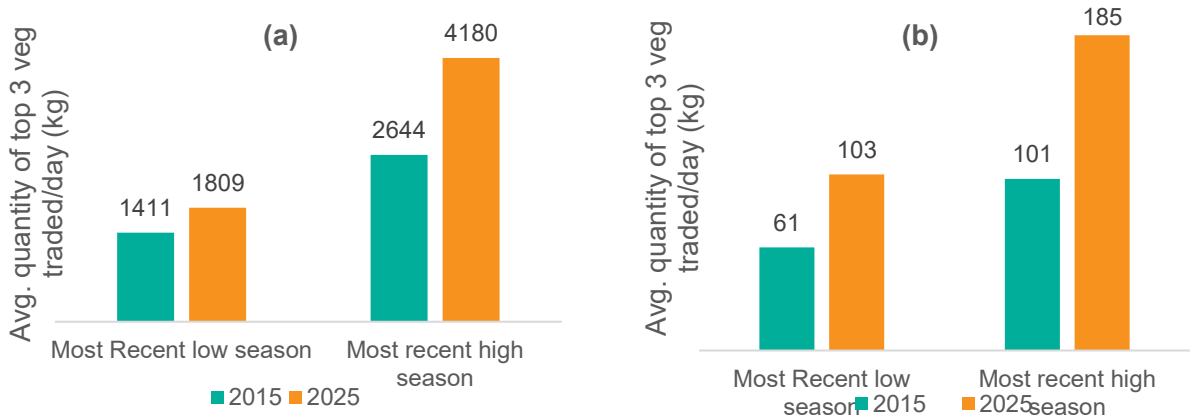
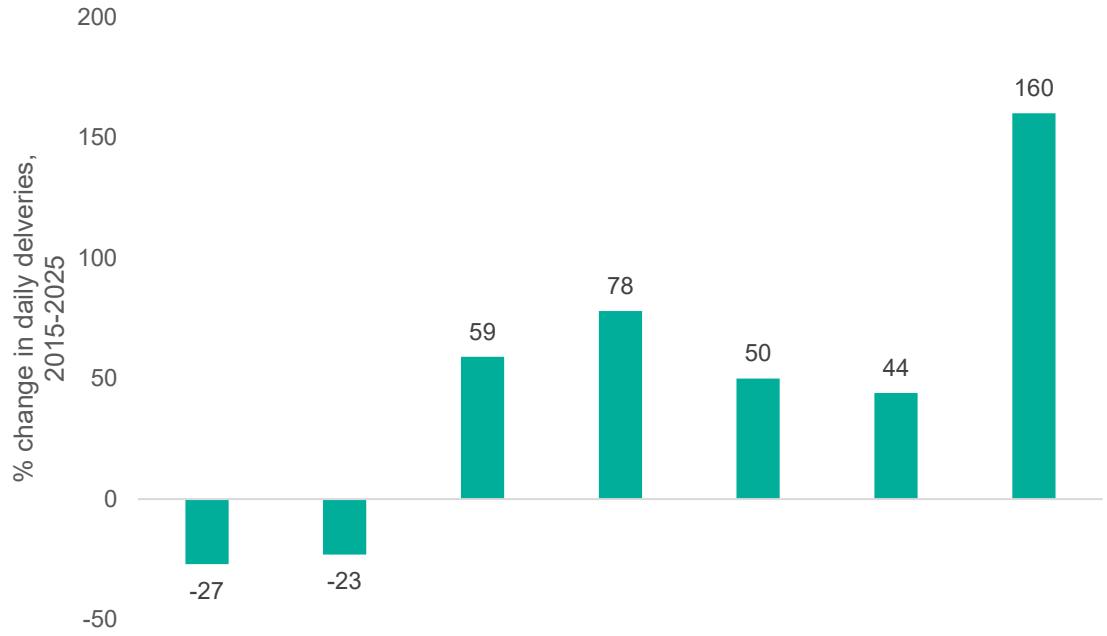


Figure 5:: Average quantity of the top three vegetables traded by (a) wholesalers and (b) retailers during high and low season, 2015 and 2025 (kg/day)



Source: INCATA Odisha Trader Surveys 2025

Figure 6: Percentage change in mean number of vegetable deliveries per market per day in high season 2015 and 2025, by mode of transport



Source: INCATA Odisha Trader Surveys 2025

Table 3: Total and mean number of ancillary enterprises and services in the vicinity of surveyed vegetable markets, 2015 and 2025

Number of…	2015	2025	% change (2025/2015)	Avg. number/ market (2015)	Avg. number/ market (2025)
Markets	154	158	2.5	-	-
Agricultural input shops	232	340	47	1.5	2.2
Agricultural machinery shops	58	98	69	0.4	0.6
Borewell drilling businesses	6	24	300	0.04	0.2
Farmer producer companies (FPOs)	13	41	215	0.08	0.3
Private cold storage businesses	4	13	225	0.03	0.1
Trucking logistics companies	107	160	50	0.7	1.0
Bag sellers	978	1415	45	6.4	9.0
Bank branches	78	125	60	0.5	0.8
ATMs	51	111	118	0.3	0.7

Source: INCATA Odisha Market Survey 2025

How did the marketing context in the villages change?

Thus far we have been focusing on the transformation of marketplaces. Yet these are not the only points of first-sale of vegetables. To examine how these other channels transformed, we draw on the Community Survey of 154 sample villages, where we ask respondents about the types of traders who operate in the village and how the mix of marketing options has changed over the period 2015 to 2025. Four features stand out. First, vegetable farmers who retail their own produce have been common and maintain continue to be with 58 and 67% of the villages having at least one farmer who retails his/her own produce. Second, in 2015, just 8 and 12% of the villages had transporters (from within the village and outside respectively) collecting and moving produce for sale outside. By 2025, 38% of the villages had these transporters, even though there are not many serving each village. Third, there has been a noticeable growth in local village retailers who procure from farmers and sell to consumers. Many of them are itinerant vendors who go door to door. Fourth, a significant share of the villages is well served by market intermediaries, even if on average they are not numerous.

Table 4: How did the marketing context transform in the villages? (154 villages)

Type of market actor	Total	Mean num-ber/vil-lage	Propor-tion of villages with type of actor	Total	Mean	Propor-tion	Decadal growth in total number ac-tions(%)
		2025			2015		
Village traders -sell to outside traders	288*	1.9	0.38	137*	0.9	0.25	110
Village retailers – sell to local consumers	436	2.8	0.49	251	1.6	0.35	74
Outside traders collect from farmers	241	1.5	0.48	142	0.9	0.31	70
Village transporters – outside	131	0.8	0.38	21	0.1	0.08	524
Outside transporters collect from farmers	135	0.9	0.38	36	0.2	0.12	275
Vegetable farmers retail vegetables	3,029	19.42	0.67	2,038	13.06	0.58	49

Source: INCATA Community Survey, 2025. Notes: * Some of the traders are common across several villages. We counted them in all the villages since our aim was to ascertain if the village was served by a trader.

Concluding remarks

This project note distills a small set of key results from the INCATA Market and Community Surveys to characterize vegetable markets in the study area and map their transformation between 2015 and 2025. An important insight is that over 90% of the estimated 2.25 million tons of vegetables that are delivered go to unregulated markets, contrary to the popular notion that government markets dominate agricultural trade across India. These markets show markers of early stages of commercialization with the perennialization of markets. Even as new periodic markets develop, markets are becoming more permanent, operating longer hours and hosting more traders. Our survey suggests that wholesalers have grown more than retailers, both have grown more than overall population and volumes transacted per trader have grown.

There is evidence that this growth has been diffused with the concentration of trade and deliveries reducing over the decade. There is also a marked change in how produce arrives in the market, increasingly by motorized vehicles and larger trucks with transporters proliferating from a low base as market intermediaries in the production zones. In the production zones, a significant proportion of the villages are well served by a multiplicity of marketing channels.

Our preliminary analysis points to a few areas that would benefit from policy attention. First, several marketplaces continue to have limited if not poor infrastructure. Upgrading infrastructure in “real” trade occurs would go a long way in ensuring safe and comfortable spaces for traders and for produce to move safely and efficiently via these spaces. Second, the current practice of tendering the operations and maintenance of markets appears to compromise the quality of infrastructure. The present results are preliminary, and more research is ongoing to understand some of these aspects in greater depth.

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