



From Aspiration to Transformation: Myanmar Agriculture and the Rural Economy

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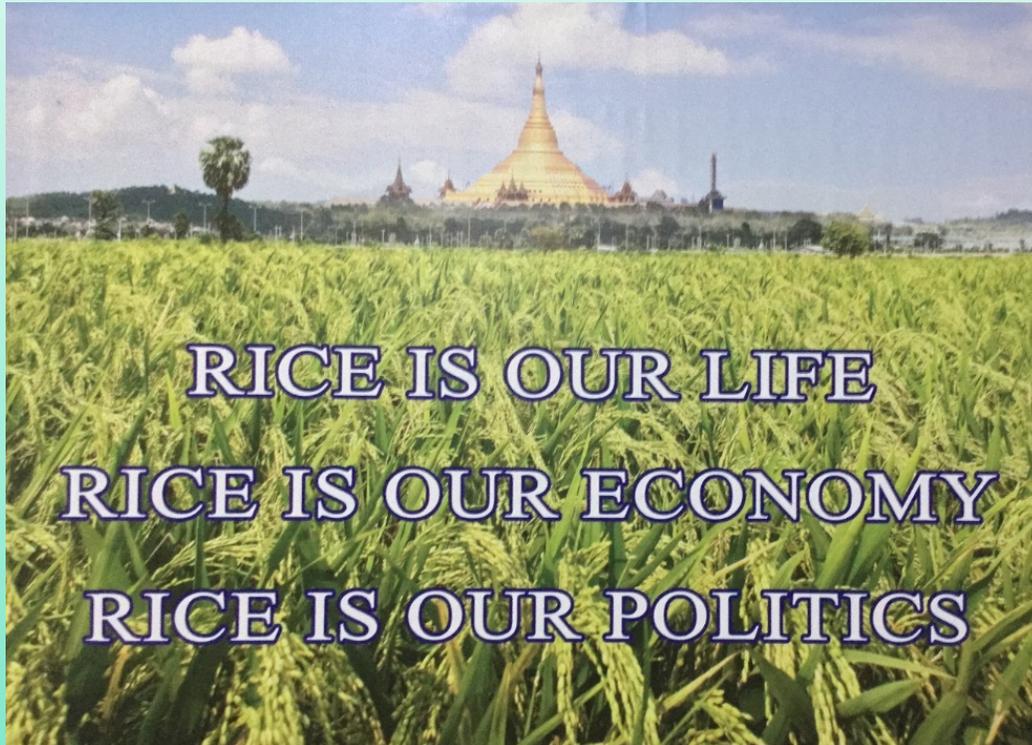
Yangon, June 1, 2018



Outline

- MOALI's Agricultural Development Strategy
- Summary findings on the status of ag and rural transformation
- Evidence on ag and rural transformation
 - Migration and wages
 - Mechanization
 - Agriculture and non-farm economy
- Outcomes (rural household incomes)
- Discussion

MOALI's Aspiration: Agricultural Development Strategy



MOALI Vision Statement: *“An inclusive, competitive, food and nutrition secure and sustainable agricultural system contributing to the socioeconomic wellbeing of farmers and rural people and further development of the national economy”*

ADS goals require decentralized and multi-sectoral approach

1. Improved production systems

- Diversified farming systems (food staple, high value, livestock)
- Improved Varieties (yield, quality, resilience, cycle)
- Integrated soil fertility/pest and disease management
- Mechanization for cost saving and precision agriculture

2. Access to sustainable, efficient irrigation services

3. Flexibility of enterprise choice for farmers

- Land policy, trade policy
- Efficient agribusiness linkages (seed, chemicals, mechanization services, processors and exporters)
- Financial services and business management skills

Ag and rural transformation summary (1)

- 1) Agriculture is the largest source of rural employment and, with growing urban demand for high quality and diversified food, a key potential driver of sustained growth in the rural economy.
- 2) Migration out of rural areas is accelerating, driving up rural wage rates and injecting liquidity into migrant households in the form of remittances.
- 3) Increasing wage rates, combined with bank finance for machinery rental services, is driving extremely rapid mechanization.
- 4) Access to a wide range of goods and services, especially transport and communications, has improved rapidly in rural areas.

Ag and rural transformation summary (2)

- 5) Agriculture is under-performing relative to potential due to:
 - poor water control (irrigation and drainage)
 - inefficient use of modern technology (improved varieties, fertilizer, pesticide)
 - lack of diversification into high value farm enterprises (aquaculture, livestock, fruit and vegetables)
- 6) Multi-sectoral (all hands) provision of public goods (research, extension, irrigation management, food safety) is needed to enable farmers to respond to emerging market opportunities.
- 7) The new Agricultural Development Strategy provides the framework for public sector reform but strong stakeholder engagement will be necessary to overcome organizational and human capacity constraints.

Evidence of agricultural and rural transformation

Survey Locations



- **2015: Mon State Survey**
- **2016: Delta Region Survey (with aquaculture VC)**
- **2017: Dry Zone Survey (with pulses and oilseed VCs)**
- **2018: Dry Zone Variety Adoption and Seed Demand**
- **2018: Southern Shan State (with maize and pigeonpea VCs)**

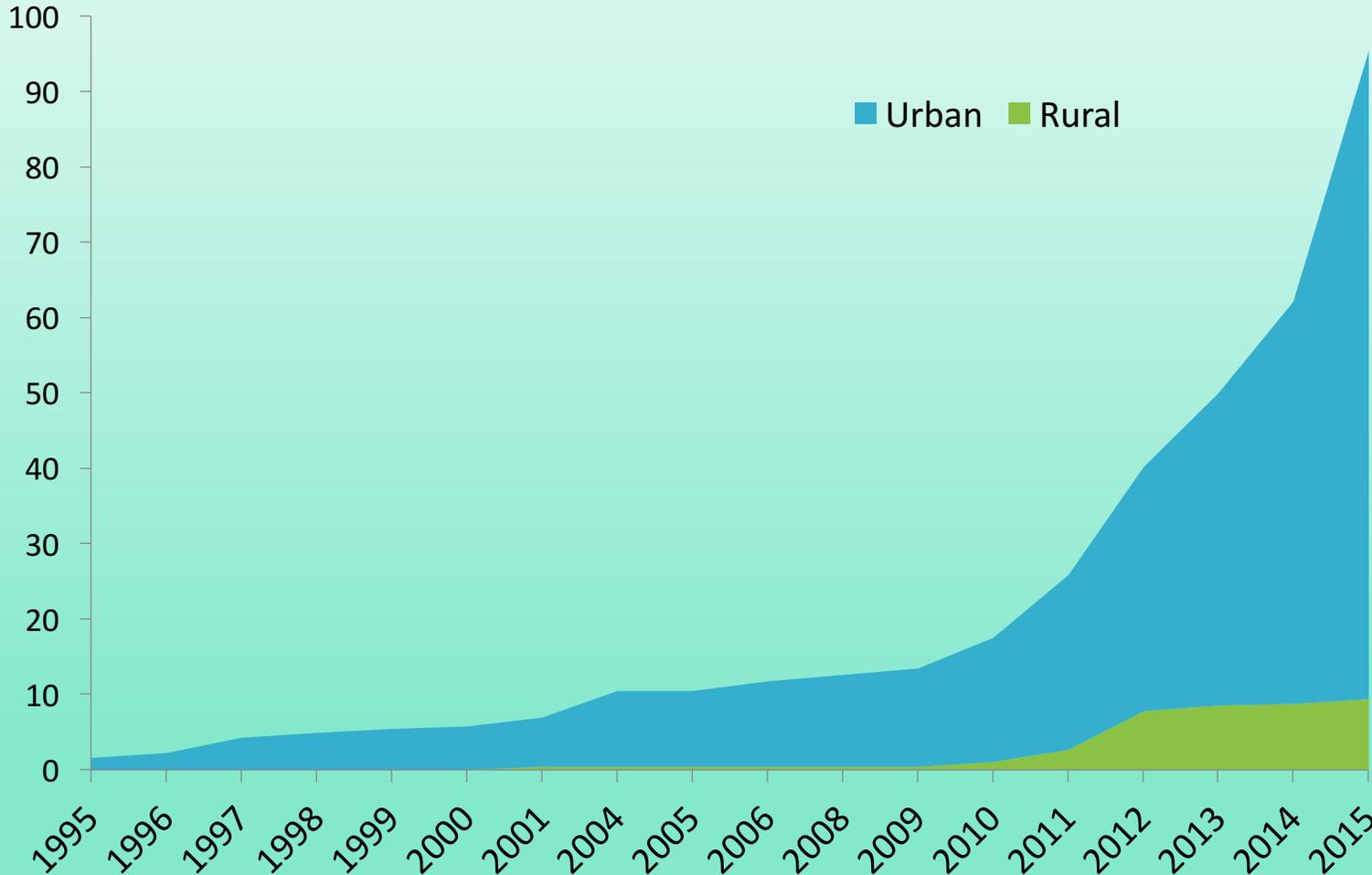
Survey Components

	Mon	Delta	Dry Zone	Shan
Scoping	1 week	3 months (fish VC)	1 month (mostly government) + 1 month (enterprises)	1 month (farmers; government; enterprises)
Household Survey	1600 HH	1100 HH	1600 HH Seed 1400 HH	1600 HH
Community Survey	137 villages	73 villages	300 villages	425 villages
Non-farm surveys	0	Machine & spare parts suppliers (49)	Machinery Dealerships (60) Service providers (123) Oil Mills (182) Traders (376) Total = 742	50 Dealerships TBD Service providers 350 Traders

Accelerating migration, rising wages



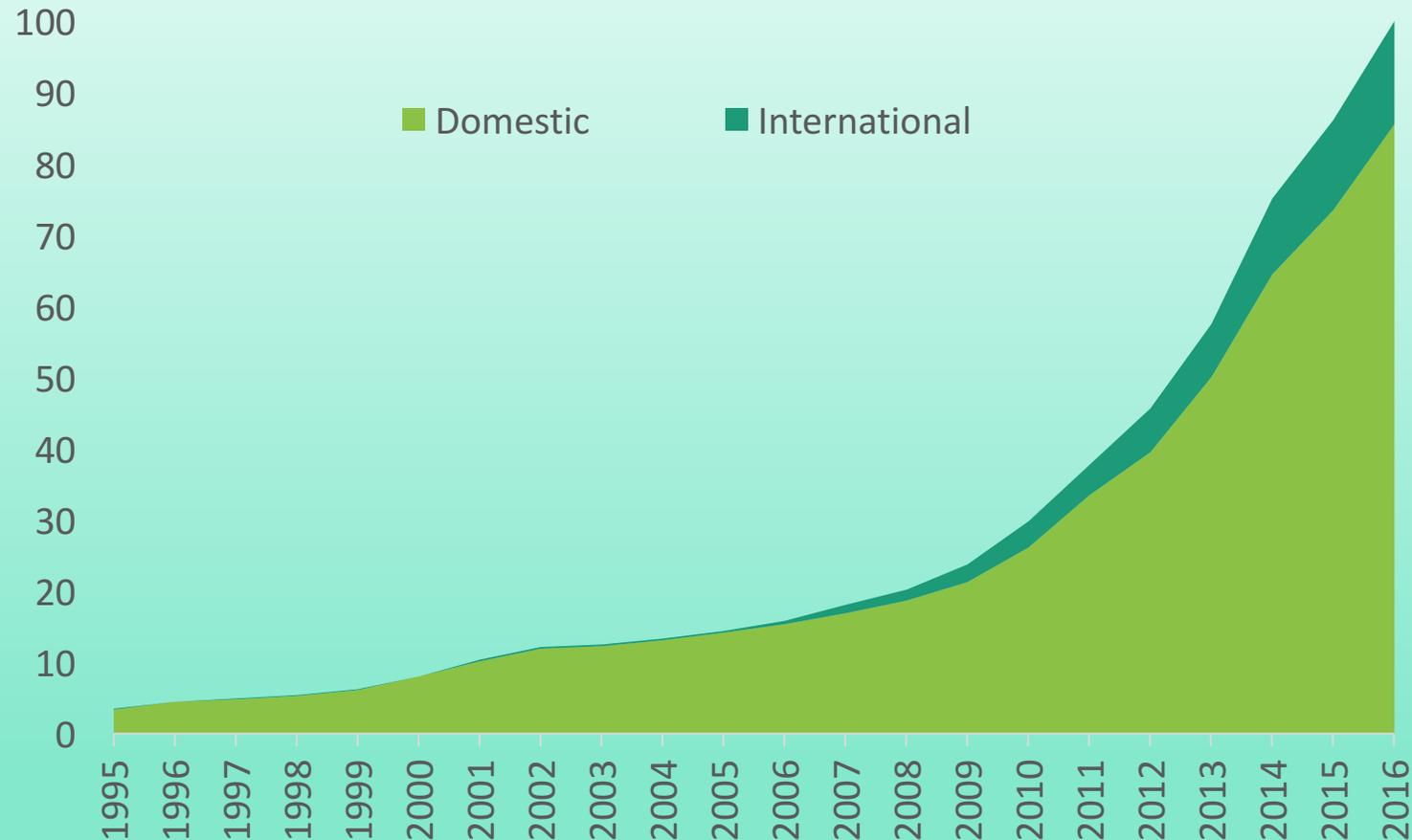
Accelerating migration in Delta...



- **90% rural-urban**
- **92% domestic**
- **1 in 6 HH have migrants**
- **Average migrant age 21**
- **55:45 male/female split**
- **70% employed in manufacturing**

Cumulative share of all migrants by year first migrated (%), 1995-2015

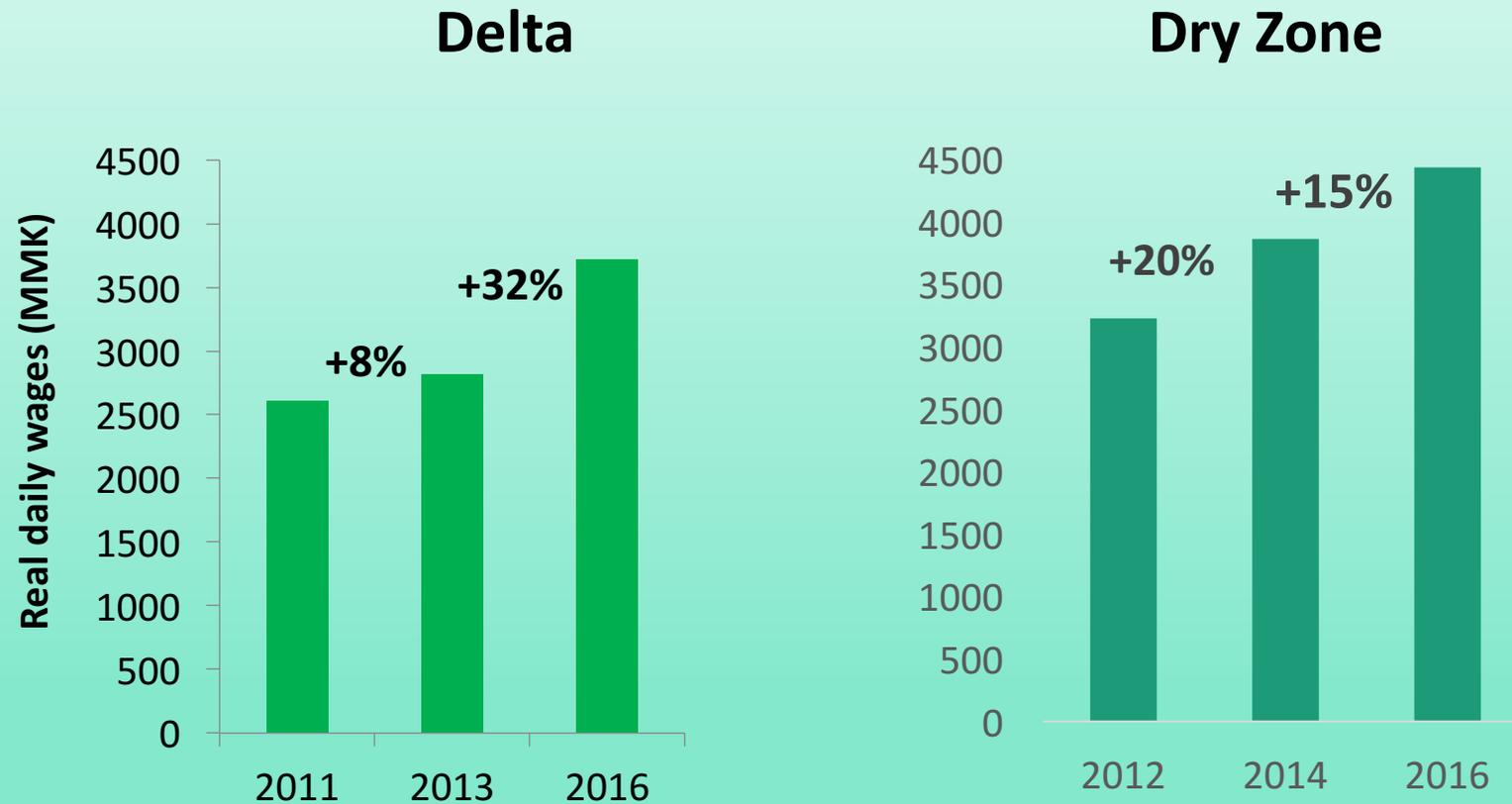
... and Dry Zone



- **86% domestic**
- **1 in 5 HH have long term migrants**
- **Average migrant age 24**
- **56:44 male/female split**
- **26% employed in manufacturing**
- **55% low-skilled informal jobs**

Cumulative share of all migrants by year first migrated (%), 1995-2016

Migration is driving large rural wage increases

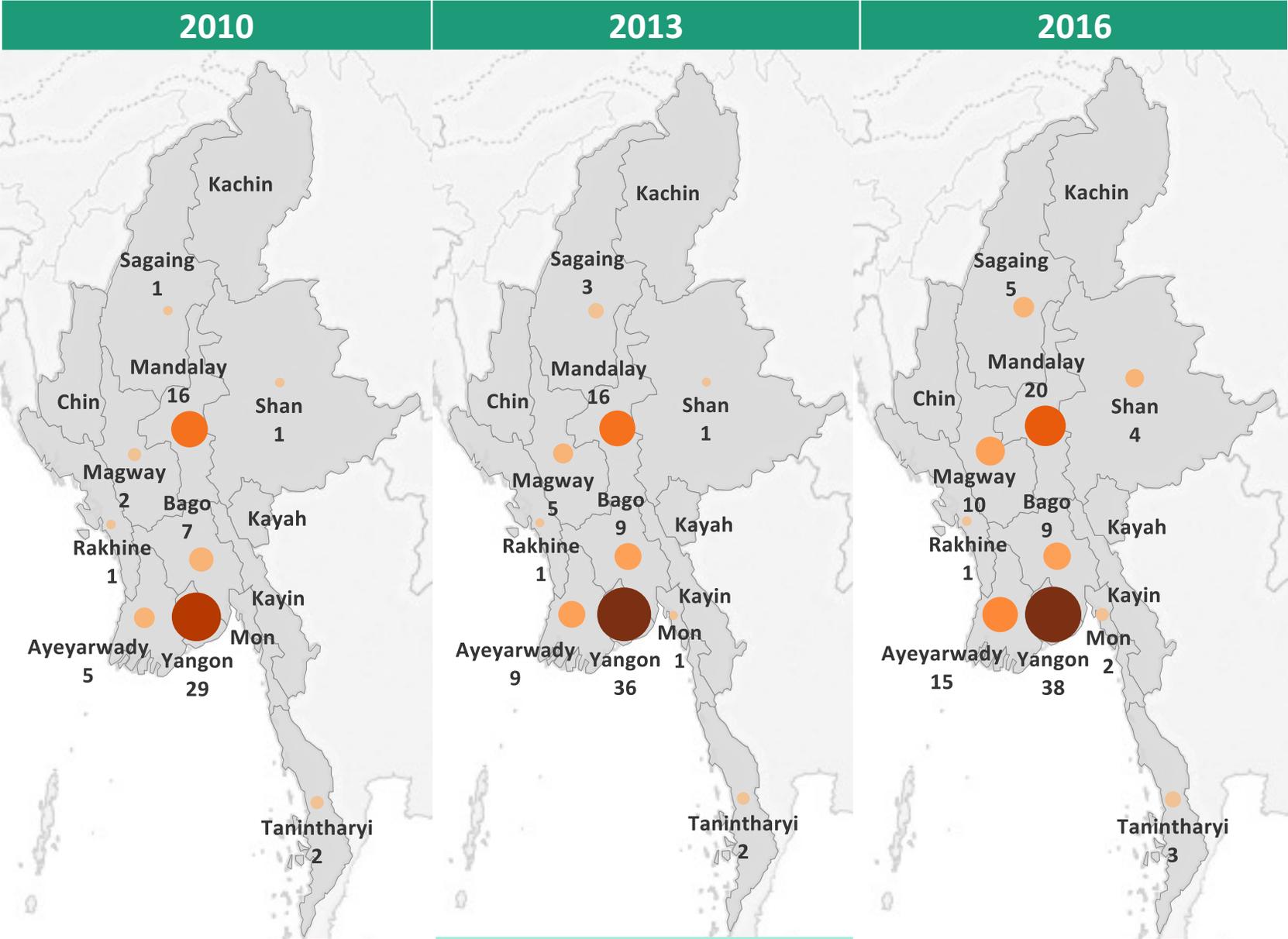


Change in real daily wages for male casual workers

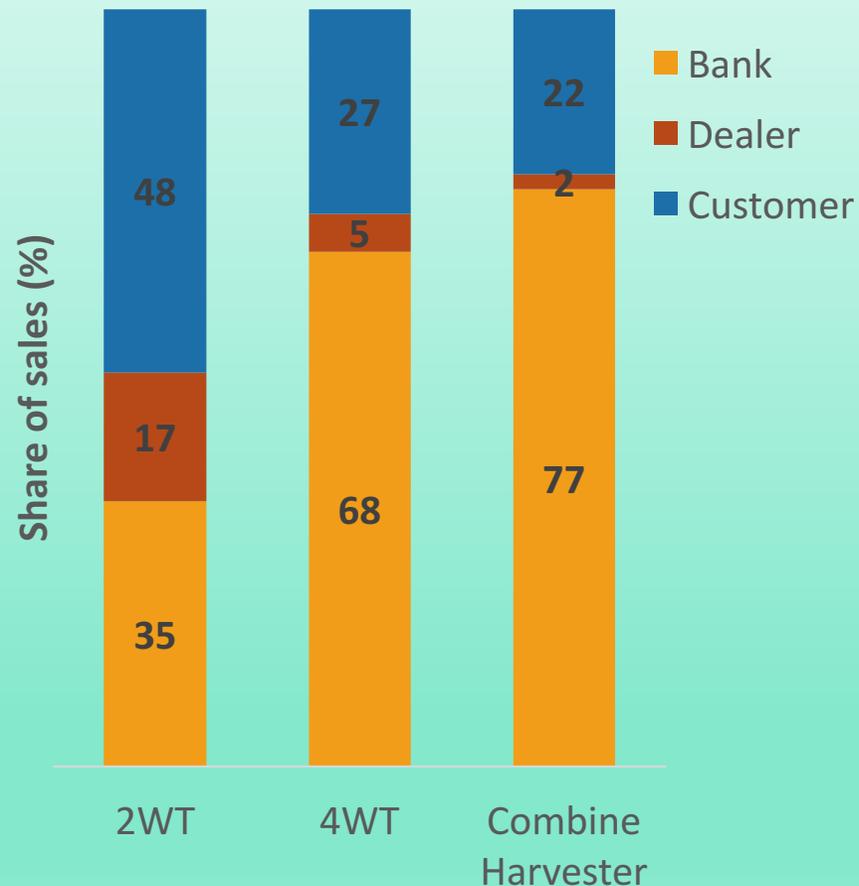
Agriculture mechanizing rapidly



Geographical spread of machine supply businesses



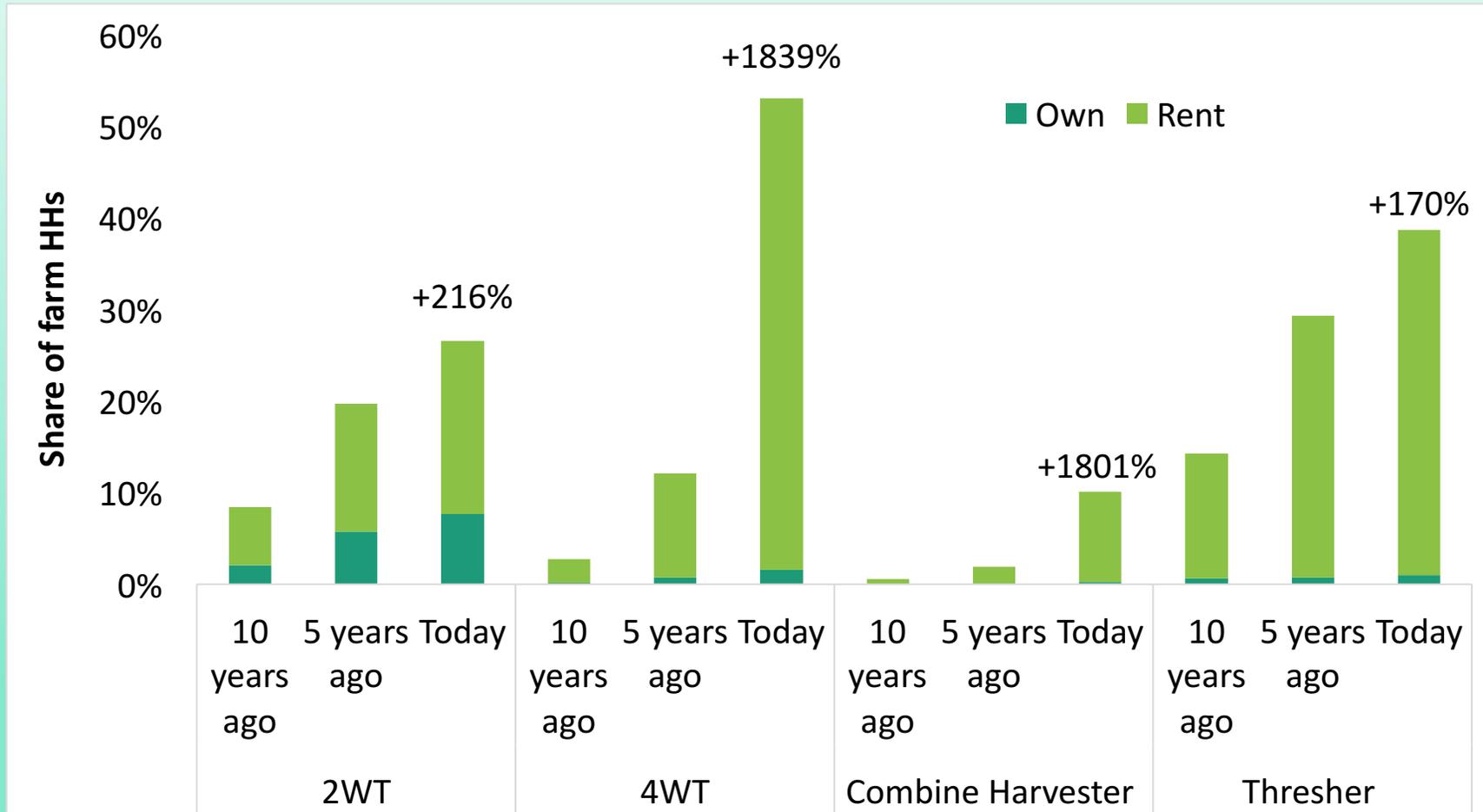
Improving access to formal financial services for machine purchases



- Hire purchase agreements with commercial banks began in 2013
- Reduced capital constraints for machine suppliers, cost of credit to buyers

Source of finance for machinery purchases, 2016 (MAAS)

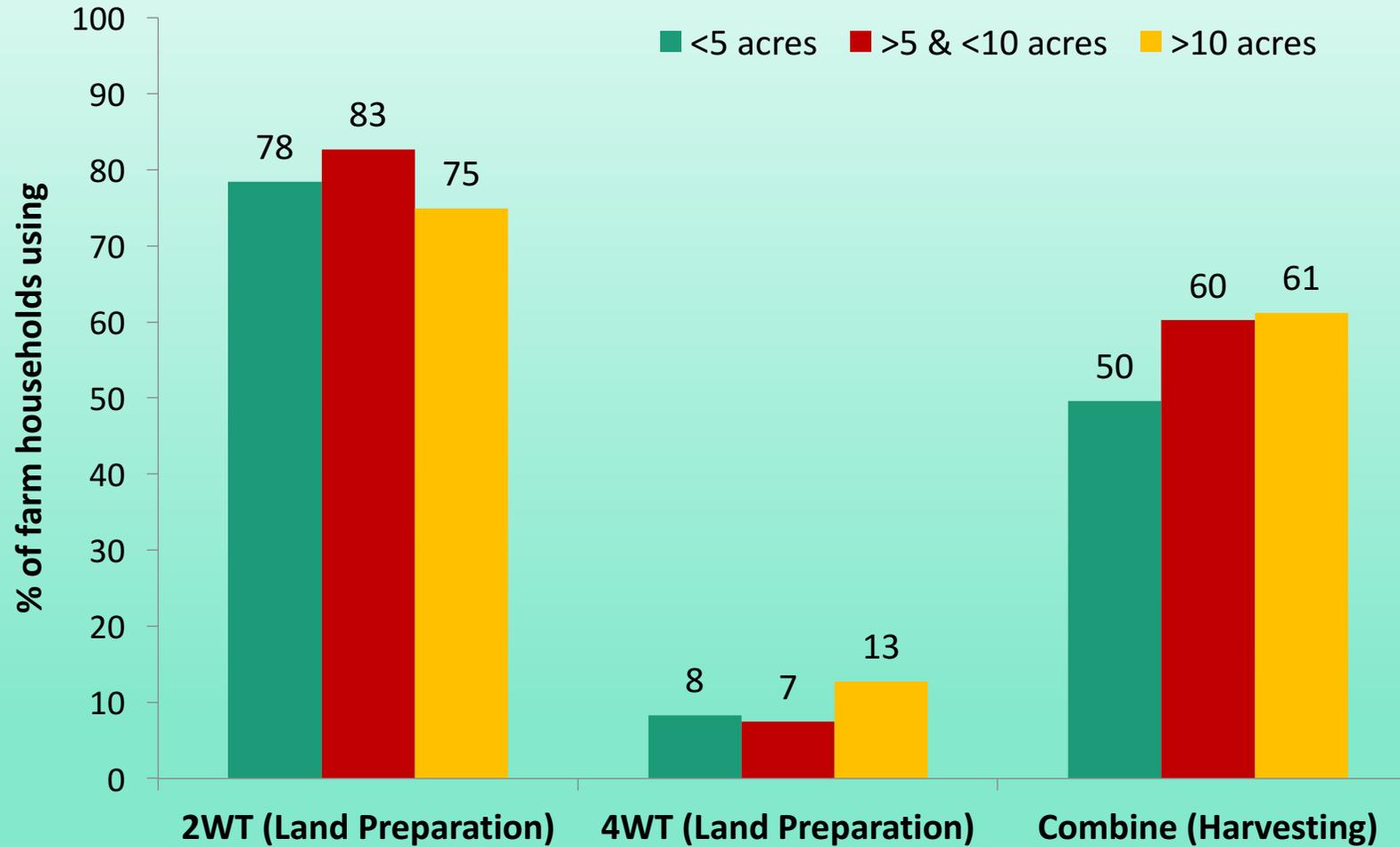
Rental services enabling access to machines



Share of farmers using machinery, by machine type, year and ownership status (READZ)



Scale-neutral technology



Share of households using agricultural machinery, by size of landholding (MAAS)

Access to formal credit is improving



Sources of credit diversifying



Share of villages with credit access by source, 2011 & 2016 (MAAS)

Credit becoming much cheaper as sources diversify

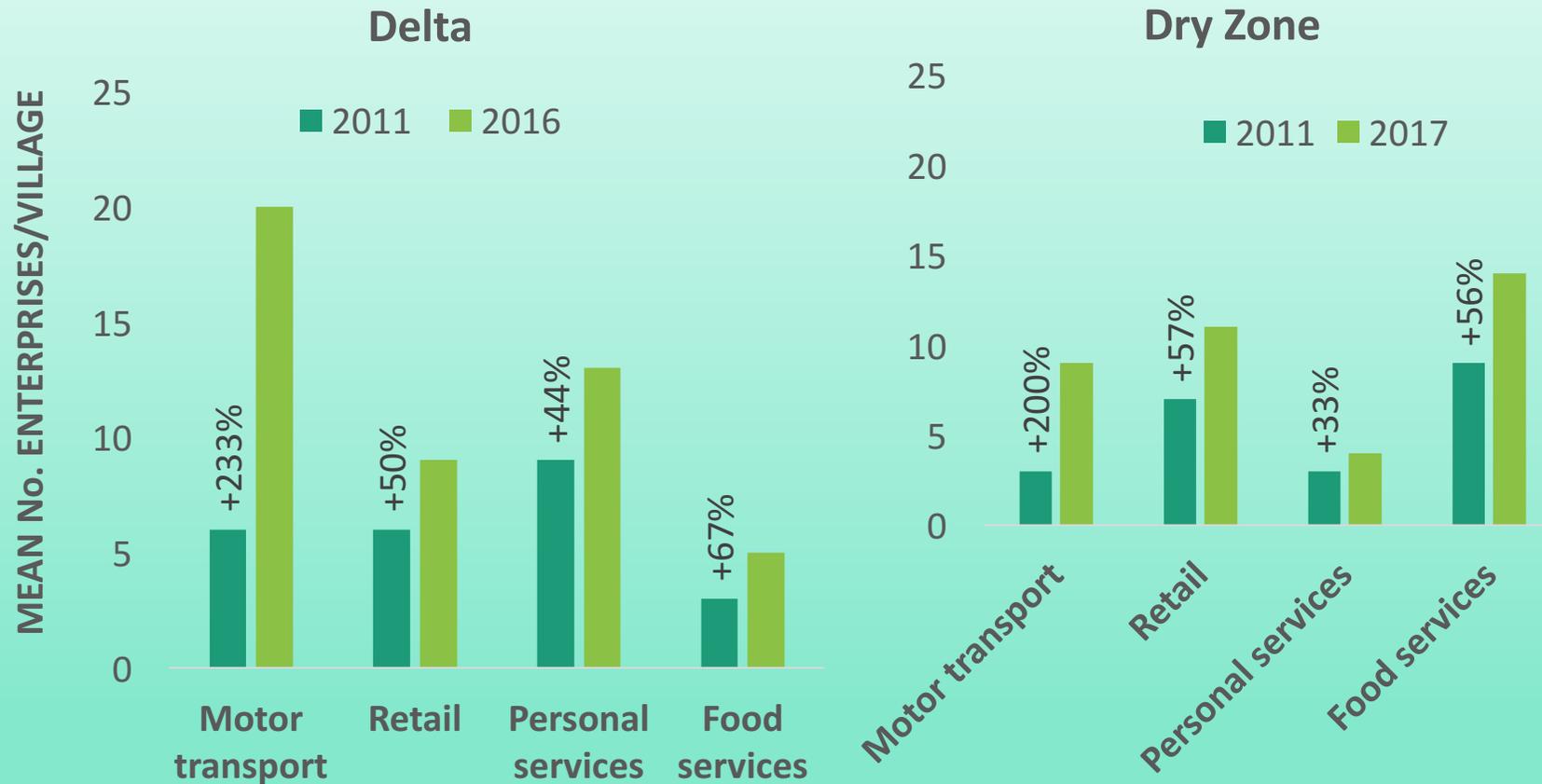


Monthly interest rates from informal lenders and microcredit providers, 2012 & 2017 (READZ)

Rural non-farm economy growing rapidly

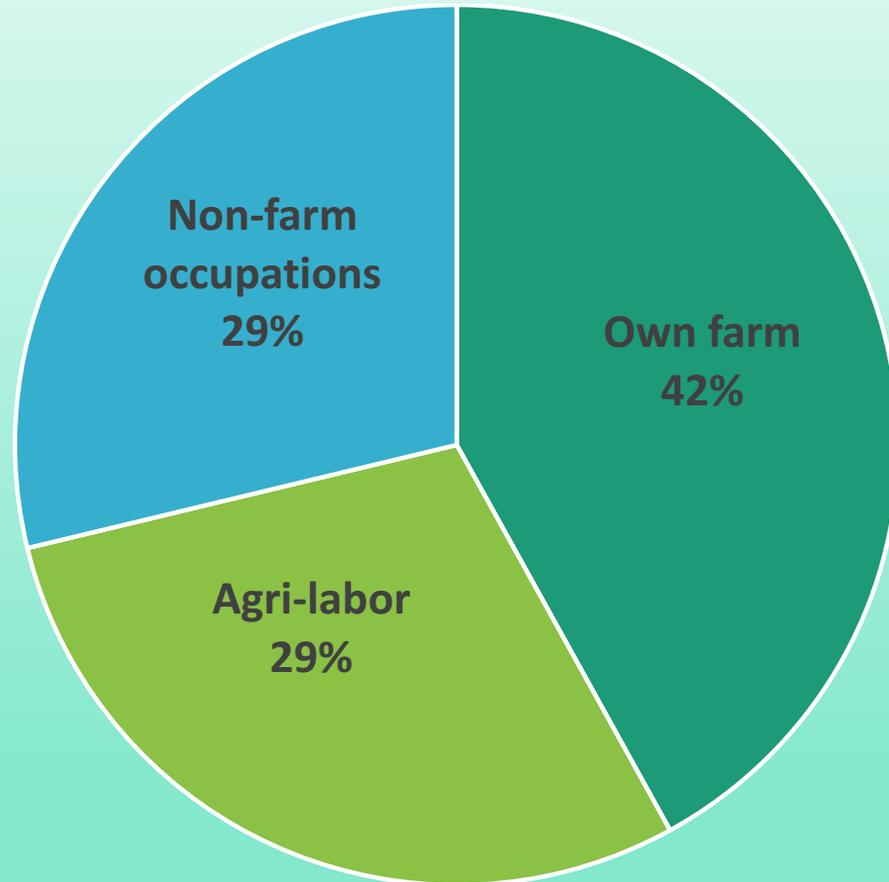


Numbers of non-farm businesses growing quickly



Mean numbers of non-farm enterprise per village by type, 2011 & 2016/17 (MAAS & READZ)

BUT: Agriculture still the main source of primary employment



Agriculture provides >70% of primary employment, plus indirect non-farm employment in value chains

Agricultural labor is 80% of off-farm employment in Dry Zone

Share of individual primary employment, by type (MAAS)

Gender wage gap smaller for non-farm work



Average daily incomes for men and women worker, by type of work, 2017 (READZ)

Agricultural performance lagging

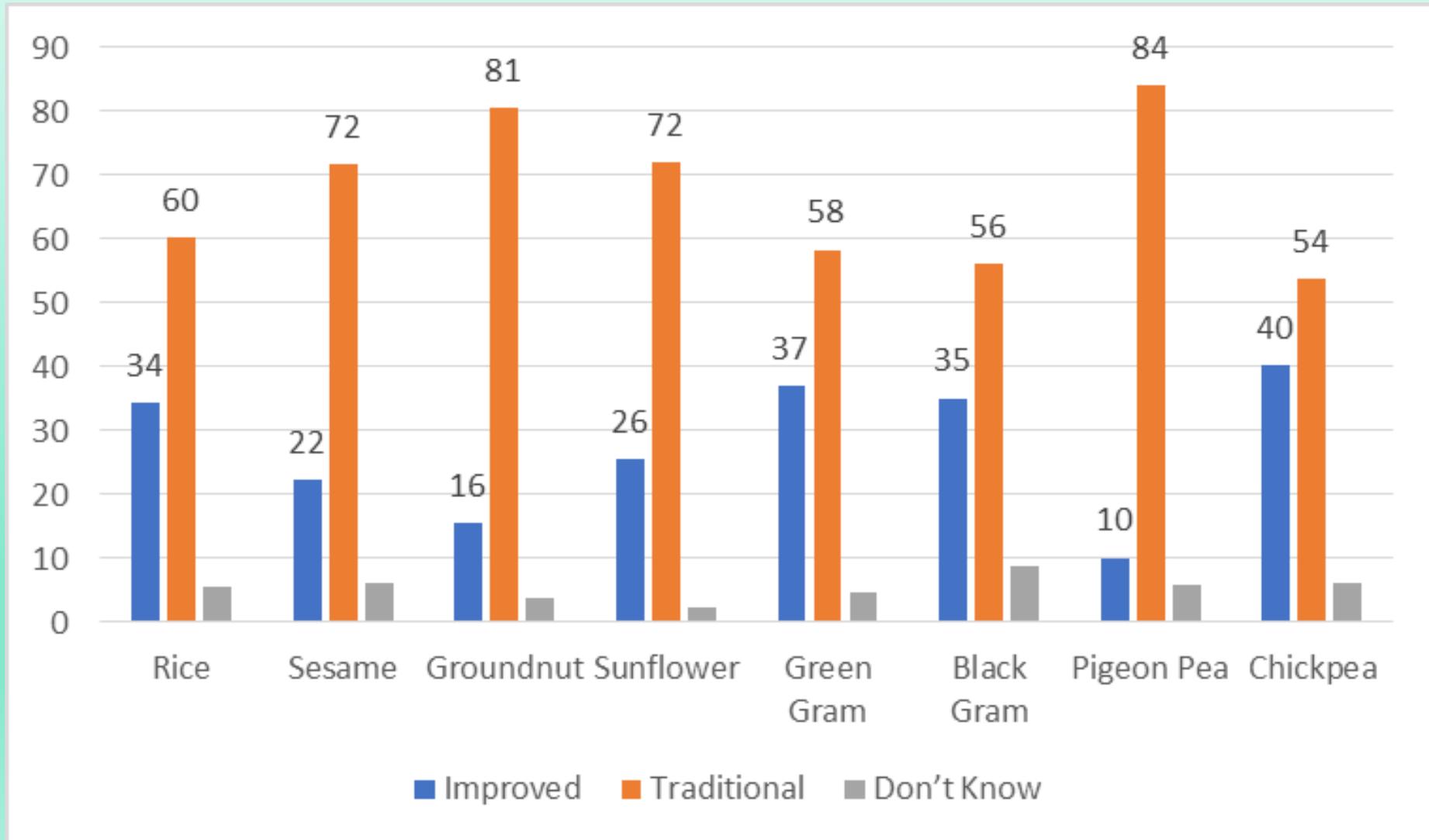


Only (post-monsoon) rice yields are improving

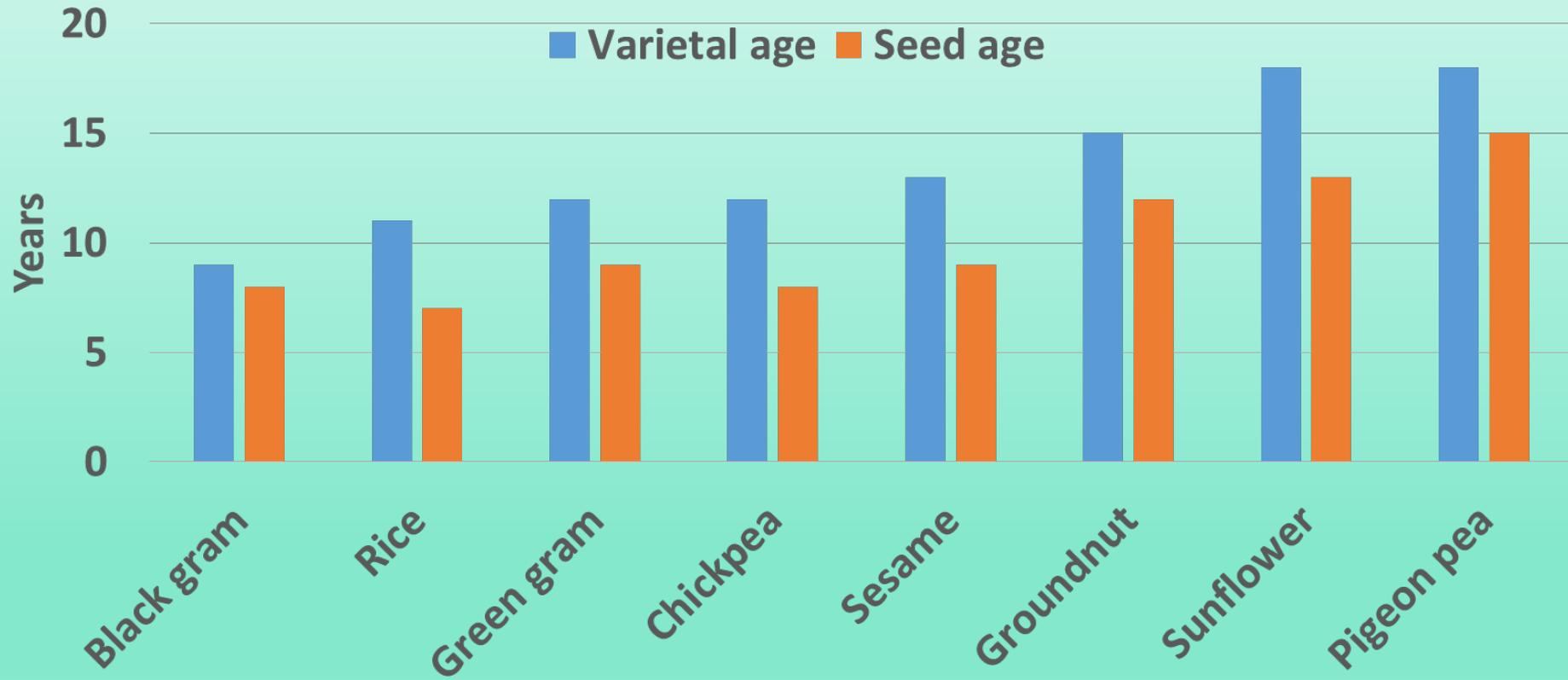


Reported average yields for selected crops (baskets/acre) in 2016, 2011, 2007 (READZ)

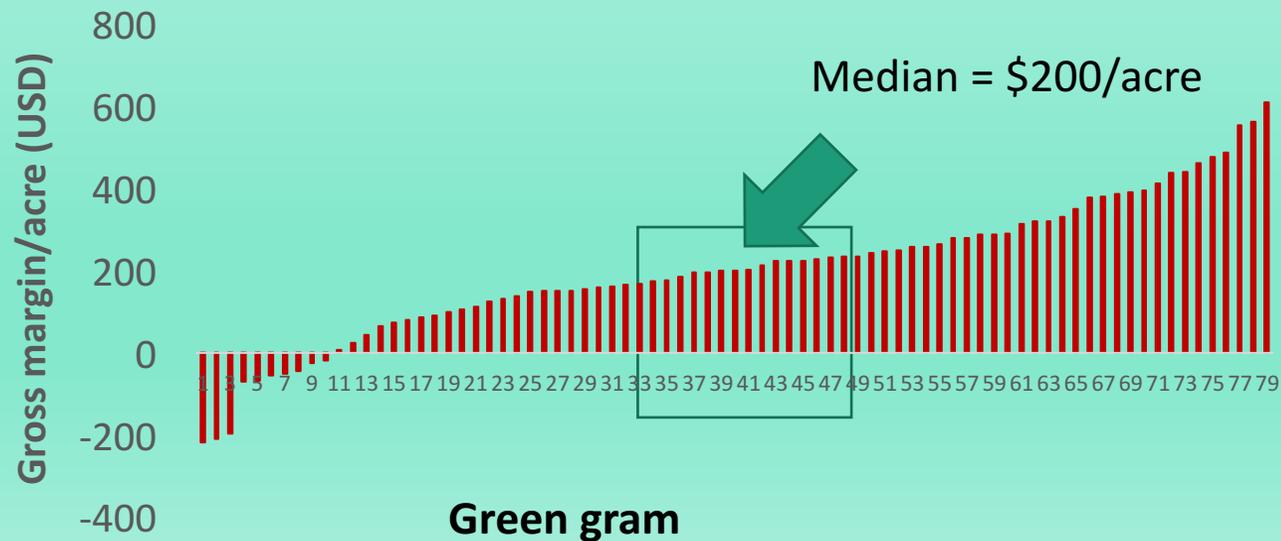
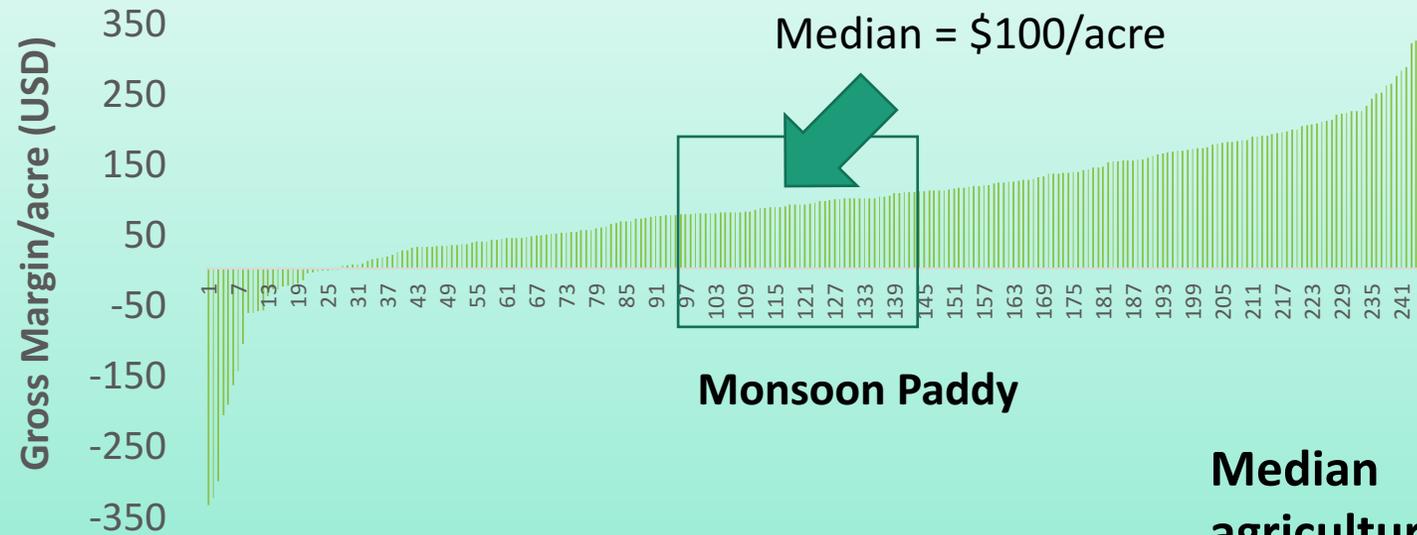
Use of Improved Varieties



Age of variety and seed planted in 2018



Agricultural productivity and profitability remain low



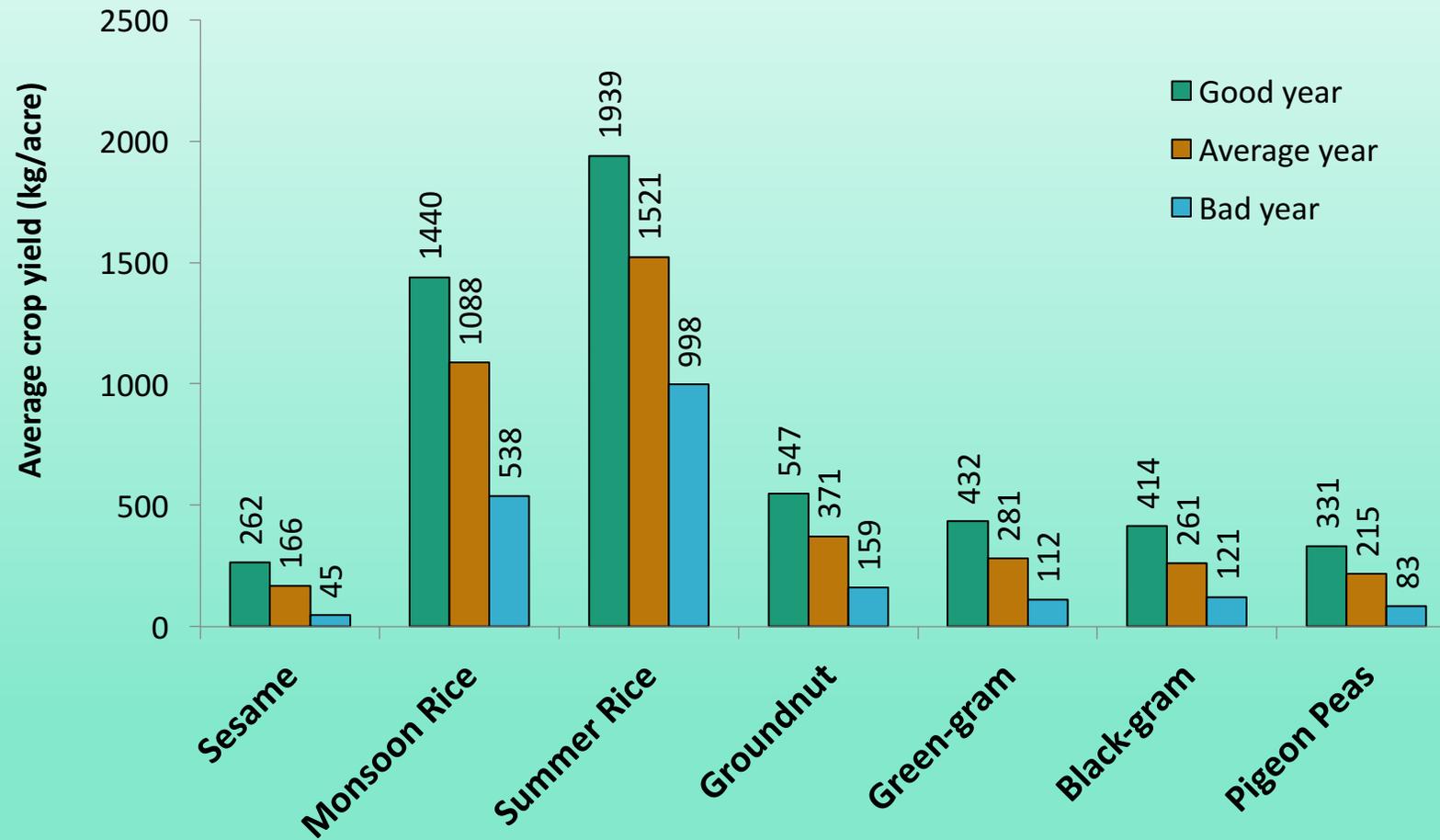
**Median
agricultural land
= 5.5 acres;
Typical annual
agricultural
income =
\$1650/HH, or
\$330/capita**

Returns in the Dry Zone are even lower, especially for upland crops



Mean gross margins (USD/acre) for selected crops (READZ)

Yields very strongly affected by climatic conditions

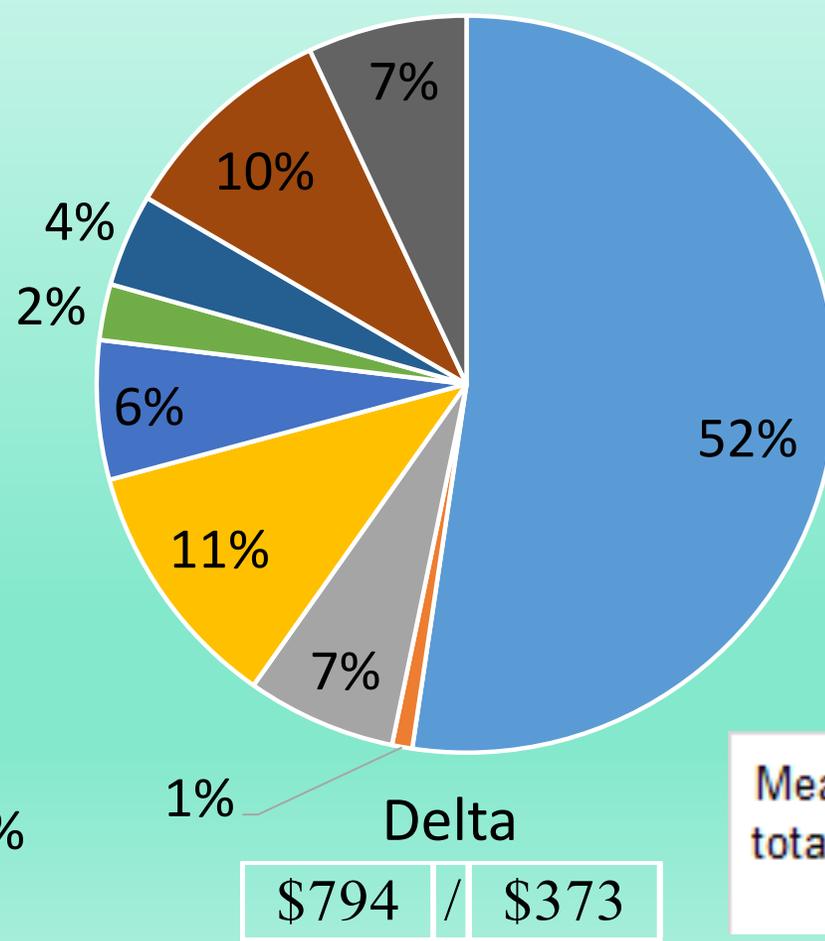
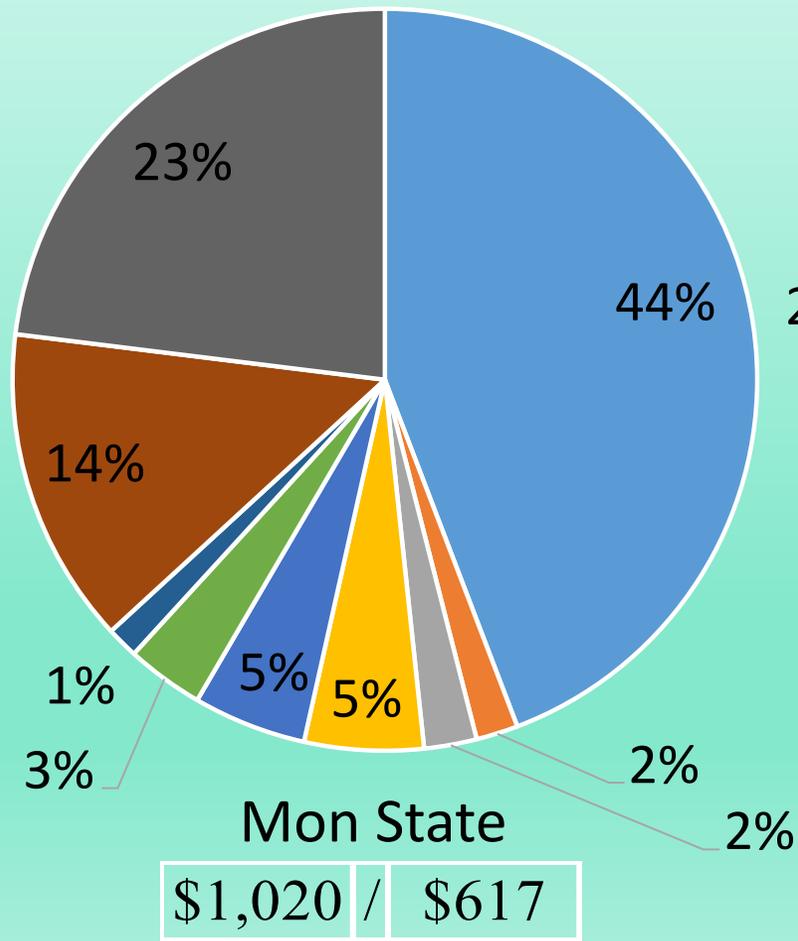


Average crop yields (kg/acre) in years with “good”, “average” and “poor” climatic conditions (READZ)

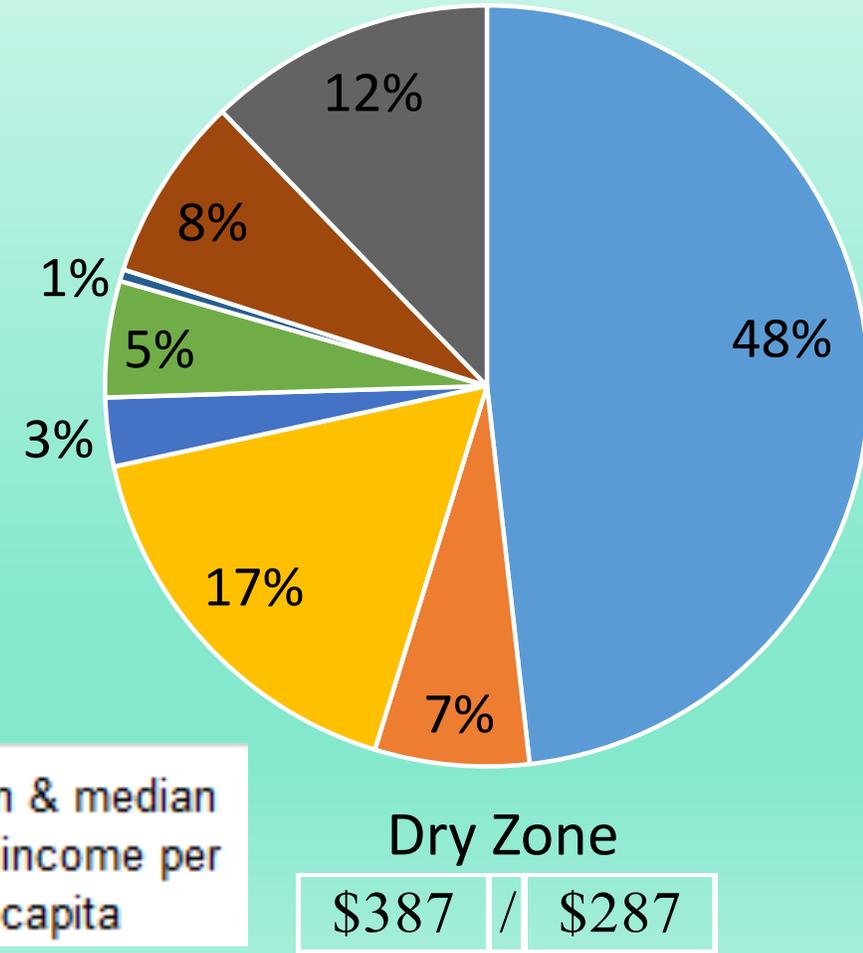
Transformation outcomes: rural
household incomes

Household Income Components (HHs with ag land)

- Crops
- Livestock
- Fishing/aquaculture
- Ag wages
- Non-ag wages
- Salaried employment
- Resource extraction
- Non-farm business
- Remittances

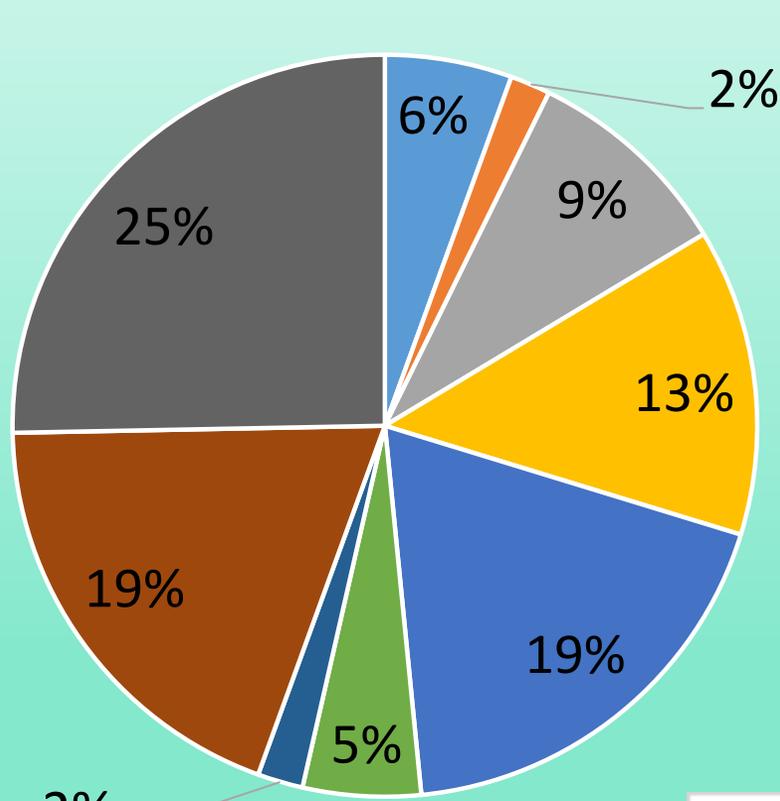


Mean & median
total income per
capita



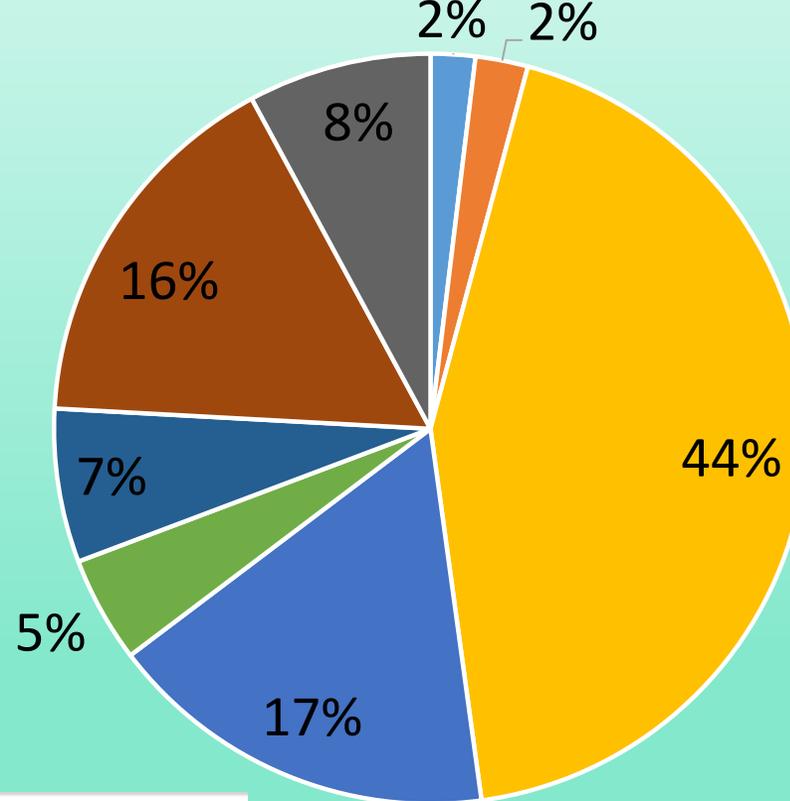
Household Income Components (landless HHs)

- Crops
- Livestock
- Fishing/aquaculture
- Ag wages
- Non-ag wages
- Salaried employment
- Resource extraction
- Non-farm business
- Remittances



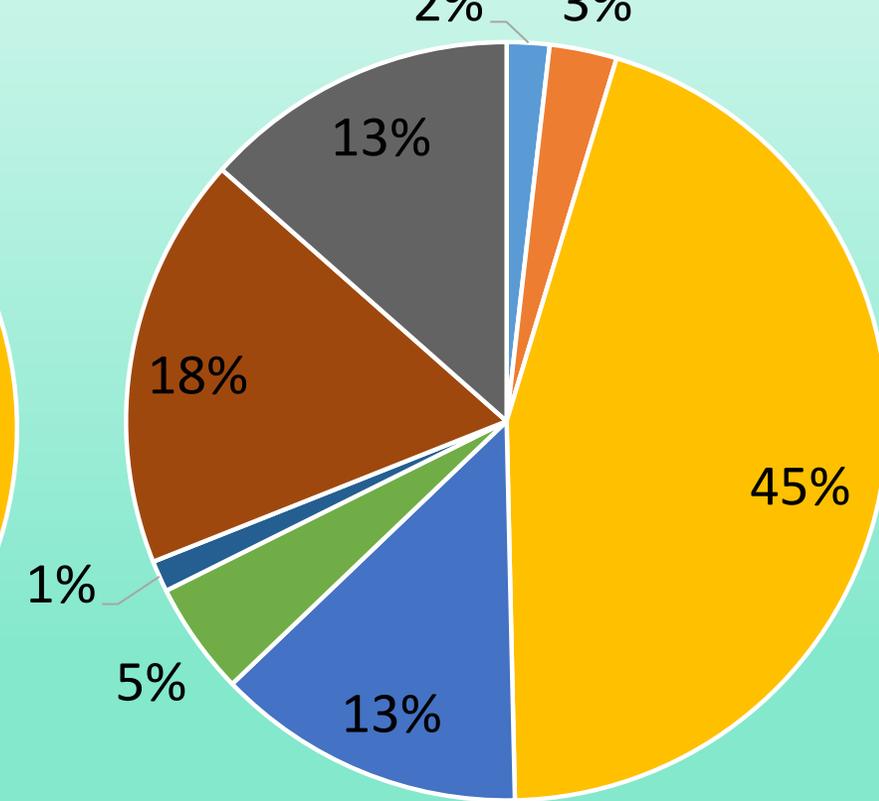
Mon State

\$690 / \$475



Delta

\$331 / \$259



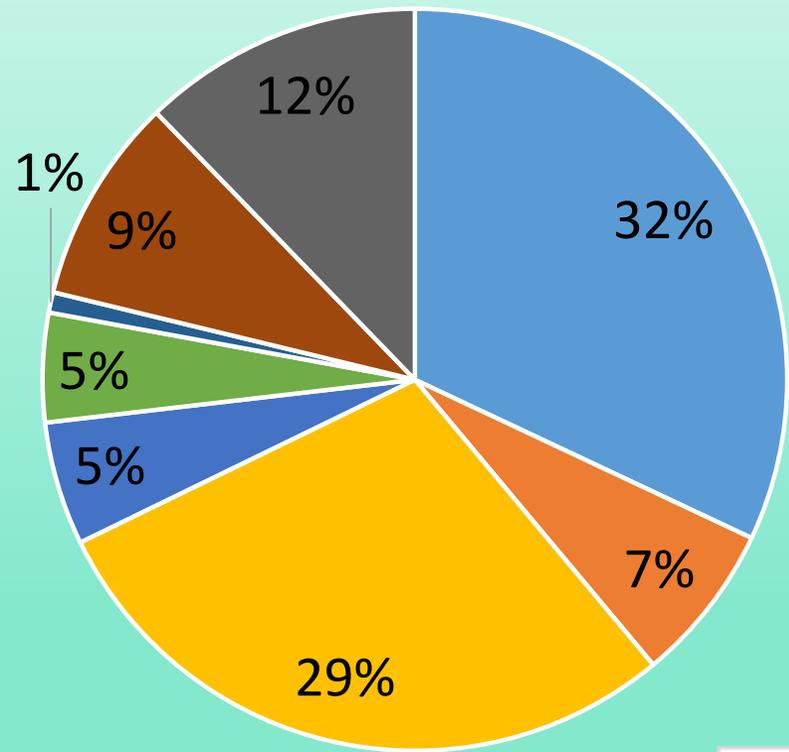
Dry Zone

\$414 / \$280

Mean & median
total income per
capita

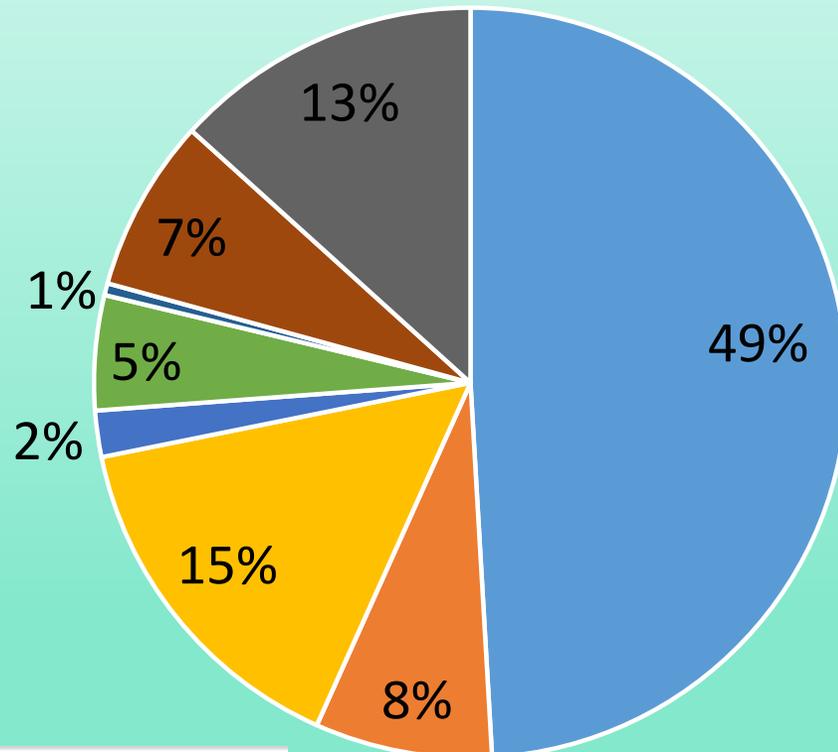
Household Income Components (land terciles) Dry Zone

- Crops
- Livestock
- Aquaculture
- Ag wages
- Non-ag wages
- Salaried employment
- Resource extraction
- Non-farm business
- Remittances



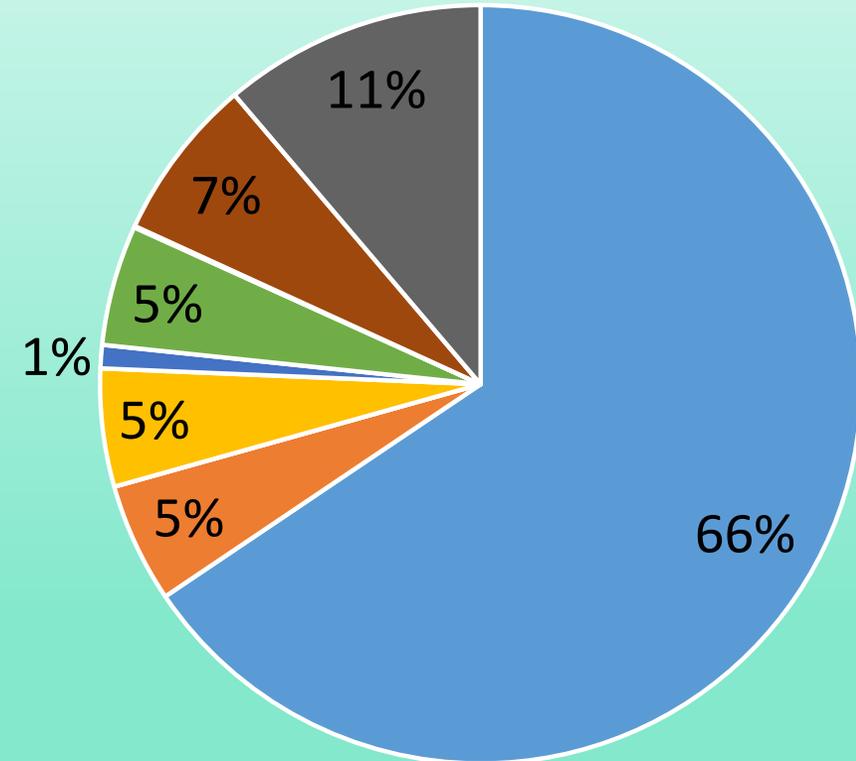
Tercile 1 (low)

\$347 / \$257



Tercile 2

\$366 / \$290



Tercile 3 (high)

\$450 / \$322

Mean & median
total income per
capita

Thanks to our CESD research team



ADS case study: Decentralization of Agricultural Research

Is Myanmar's Agricultural Research and Extension System equipped to support ADS?

1. Scientists are well trained and highly dedicated – important successes achieved despite obstacles
2. Research human resources extremely limited
 - One tenth the size of neighboring countries
 - Critical capacity gaps in almost all disciplines
3. Research is organizationally fragmented
 - Limited research capacity spread across multiple units (DOA, DAR, YAU)
 - Very limited collaboration between research and extension
4. Research staff geographically over-centralized
 - 80% of DAR PhD and MS level staff at Yezin
5. Slow research career progression discourages talent

Consequences for Research Effectiveness?

1. Discipline-focused rather than production system focused
2. Laboratory and research station focused rather than farmer focused
3. Limited capacity to take advantage of global science
4. Limited capacity to translate research findings into improved farmer production and income increases
5. Limited talent acquisition and retention



Potential impact of research on farmer welfare and economic growth not fully realized

ADS Opportunity for Research and Extension System Reform: “Harvesting the Future”

1. Large-scale research human resource recruitment and graduate training to address capacity gaps
2. Re-organize existing units to achieve critical mass in short-term (e.g., Biotechnology)
3. Decentralize research and extension: joint regional, multidisciplinary teams to address farming system problems
4. Expand long-term international partnerships linking capacity building and farmer problem solving
5. Increase amount and flexibility of funding



High impact of research on farmer welfare and growth

Potential areas for engagement

- Linkages between USAID funded projects and regional research centers
 - Facilitating farmer visits and participation in variety evaluation on research or seed multiplication farms
 - Expansion of on-farm evaluation of varieties and management practices
 - Models of local commercial seed multiplication by farmers
 - Training of farm service providers
- Regional commercial tissue culture labs