Myanmar: Analysis of Farm Production Economics: Preliminary Results for the 2013 Monsoon Season

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Why Do We Do This Work?

- Agricultural statistics and data are of poor quality in Myanmar
- Data is particularly weak on farm production economics:
  - Farm production costs, farm profitability, and returns to farm labor
  - Farm technologies (seeds, fertilizers, pesticides, machines, labor)
  - Differences by region, agro-ecological zone, and farm sizes
  - Dynamics between labor (own vs. hired) and capital (mechanization)
- Comparisons with other countries are limited to FAOSTAT and USDA
- **All this reduces the efficiency and effectiveness of the agricultural policy in Myanmar**

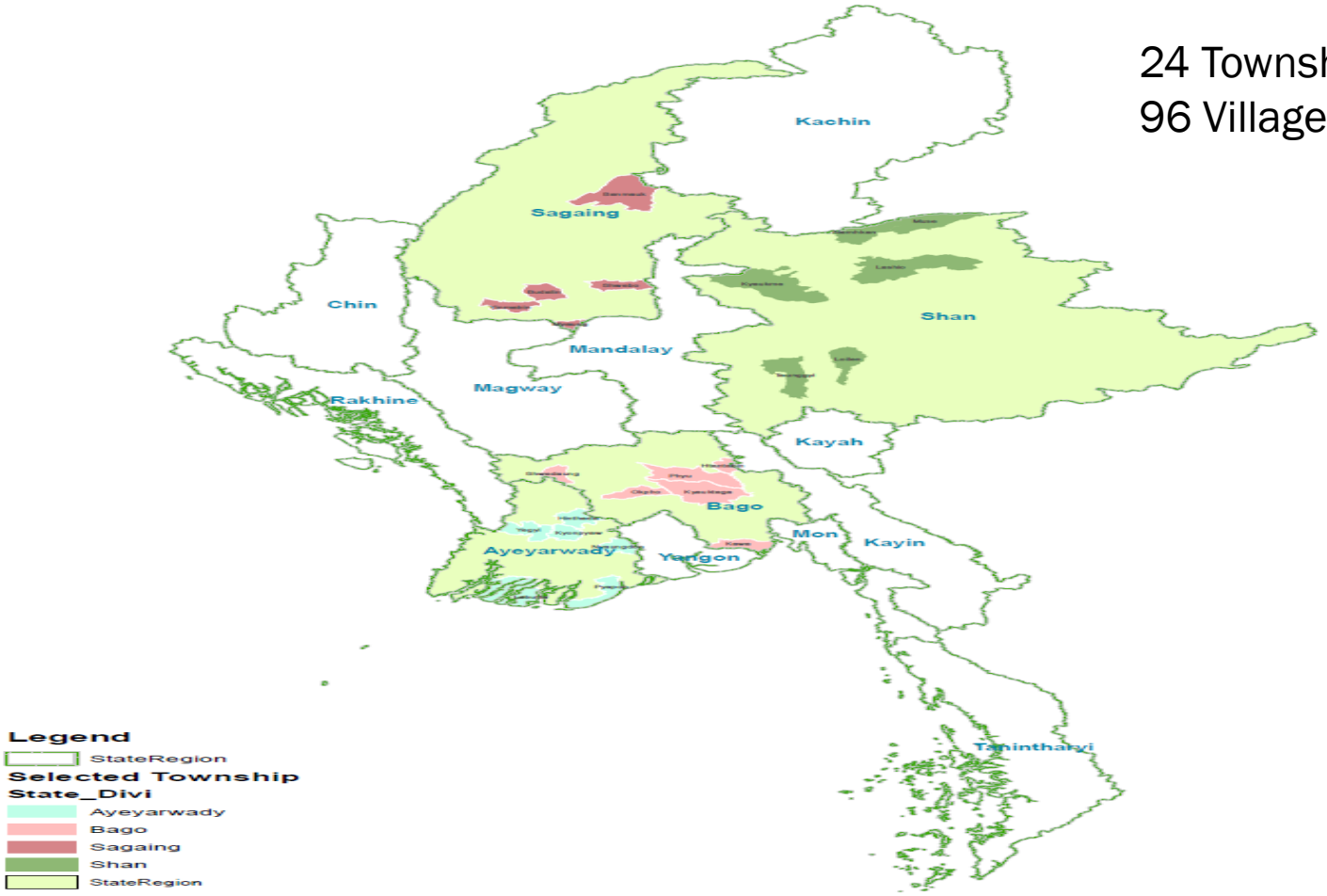
The Multi-Agency Project

- LIFT and the World Bank have initiated the project
- For the collection of primary data we partner with Myanmar Marketing Research Development (MMRD)
- Food and Agriculture Organization (FAO) and International Rice Research Institute (IRRI) help with design of the survey and quality control
- The AgriFood Consulting International carries out analysis of the primary data

The Survey

- Total sample is **1,728** farm households
- Ayeyarwady (484 HHs), Bago (380), and Sagaing (501) Regions, and Shan (363) State
- Two rounds of the survey: monsoon (Nov-Dec 2013) and dry season (Apr-Jun 2014)
- Agro-ecological zones:
  - Ayeyarwady *[salt water, brackish water, fresh water]*
  - Bago *[west alluvial, east alluvial, east/west flooded land]*
  - Sagaing *[irrigated, dry land, river area]*
  - Shan *[southern interior, northern interior, border area]*

The Survey Townships



24 Townships
96 Village Tracts

The Survey Focus

- This survey is not a farm census and is not representative to the whole country
- At this point it does not allow studying dynamics/changes
- The survey focuses on main village tracts
- These main village tracts are likely to be better-off performers:
  - They are most economic active, centers for government services and trade, and usually long established in areas with better soils and production environment
- More remote village tracts are likely to generate lower incomes and use more traditional technologies
- The focus on “main” villages allows better international comparisons

Example: International Study of the Phil Rice

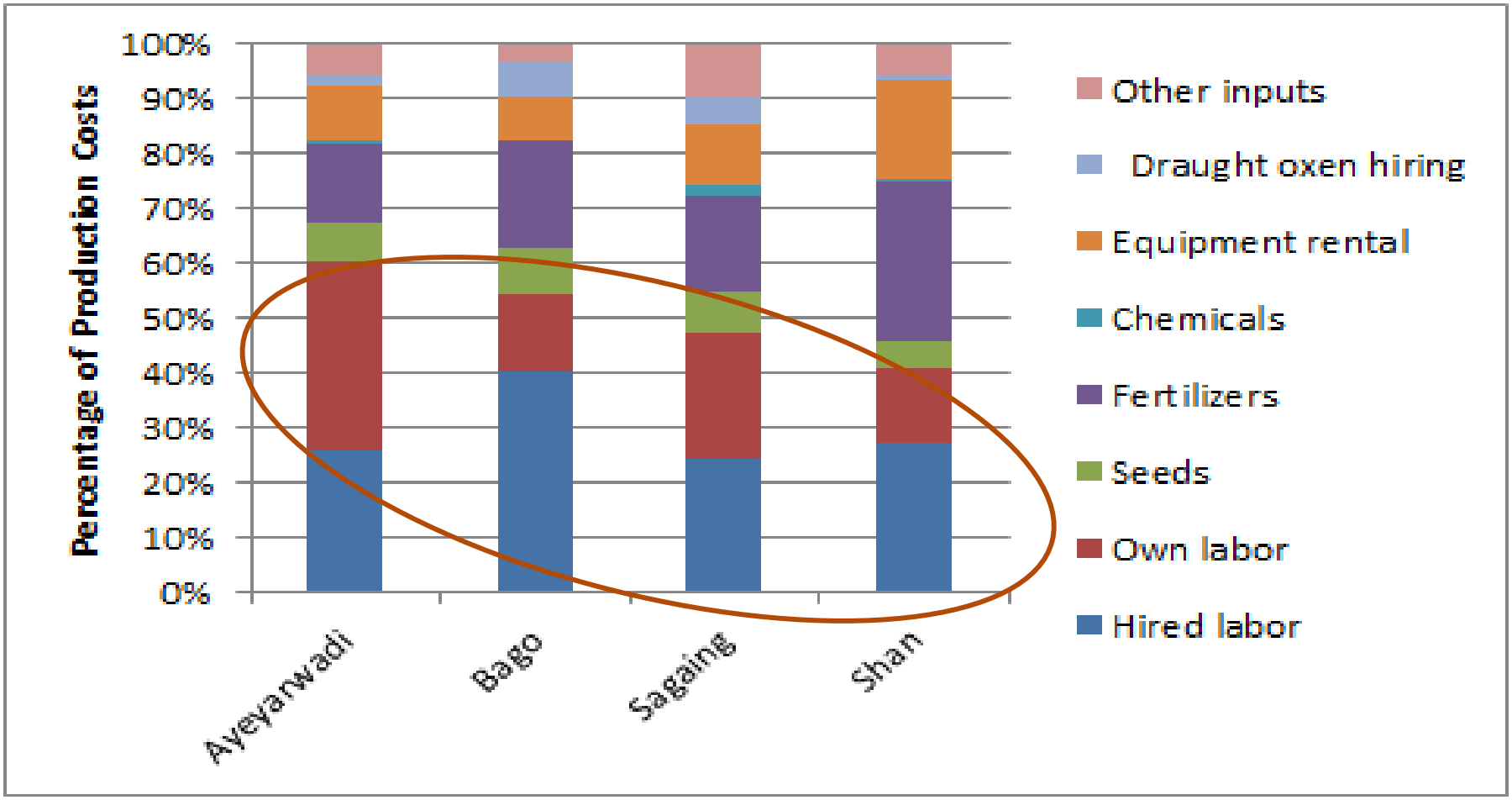
The Survey Sections

- Demography
- Education
- Assets and access to services
- Farm land (size, land use rights, taxes, rents, land use)
- Production of rice
- Determinants of rice productivity
- Consumption of rice
- Production of other crops: maize, groundnuts, sesame, sunflower, beans and pulses

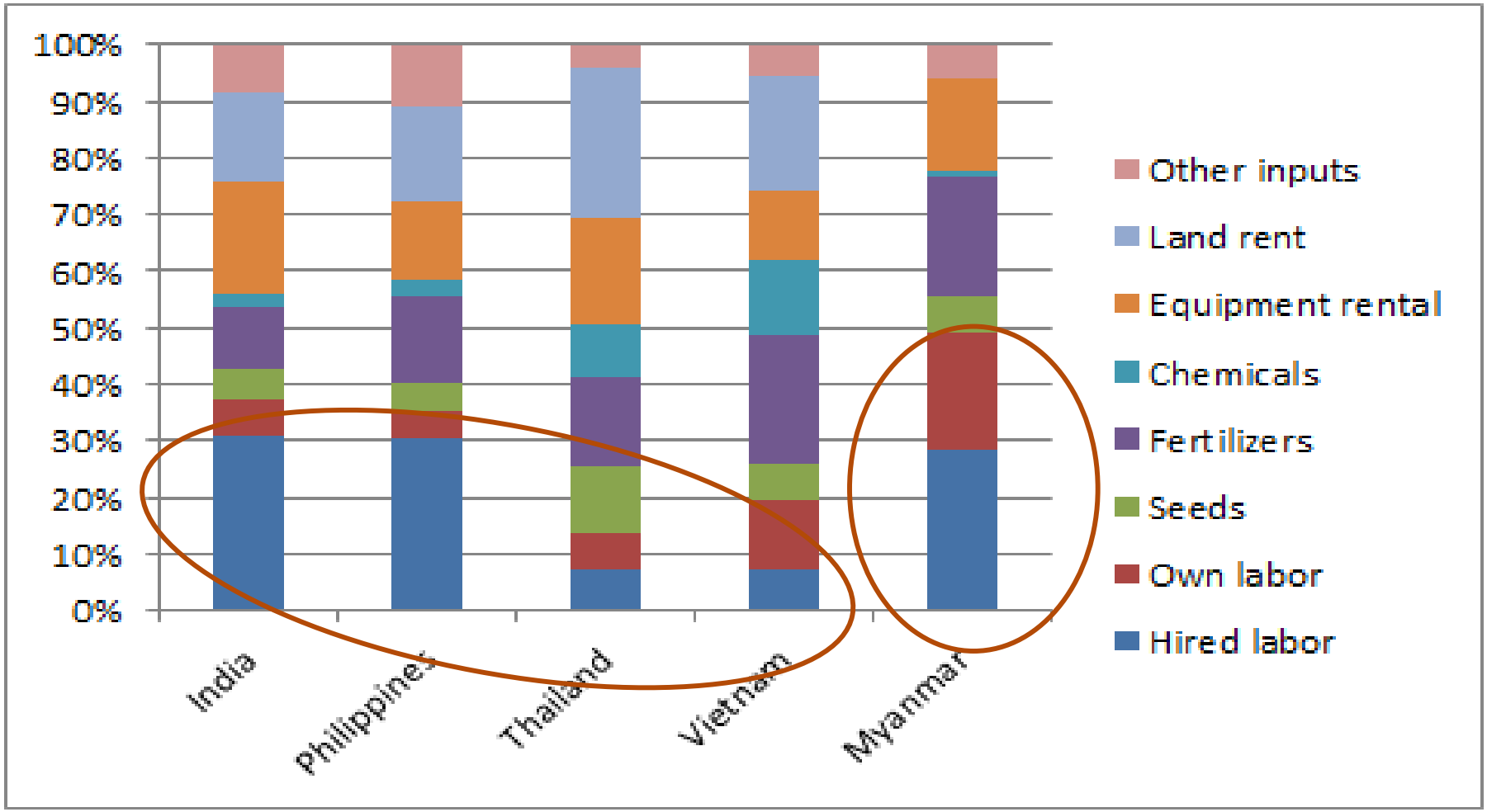
Selected Preliminary Results

1. Monsoon Rice Production Technology
2. Labor Dynamics
3. Monsoon Paddy Yields
4. Monsoon Rice Gross Margins
5. Differences by Technology and Farm Size

Message #1: Monsoon Rice Production in Myanmar is Labor Intensive, Mostly Traditional

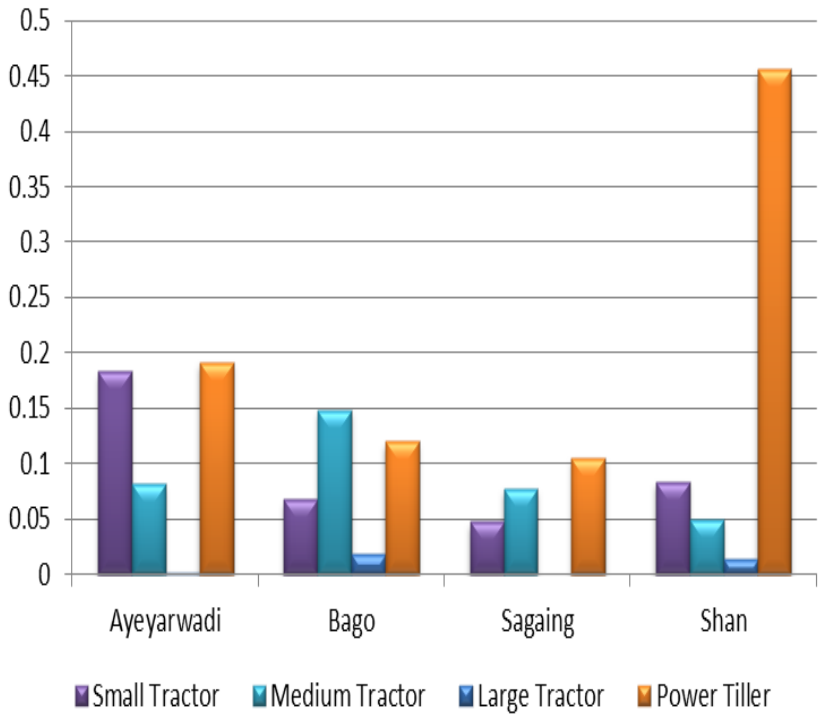


Competitors Use Less Labor-Intensive Technologies

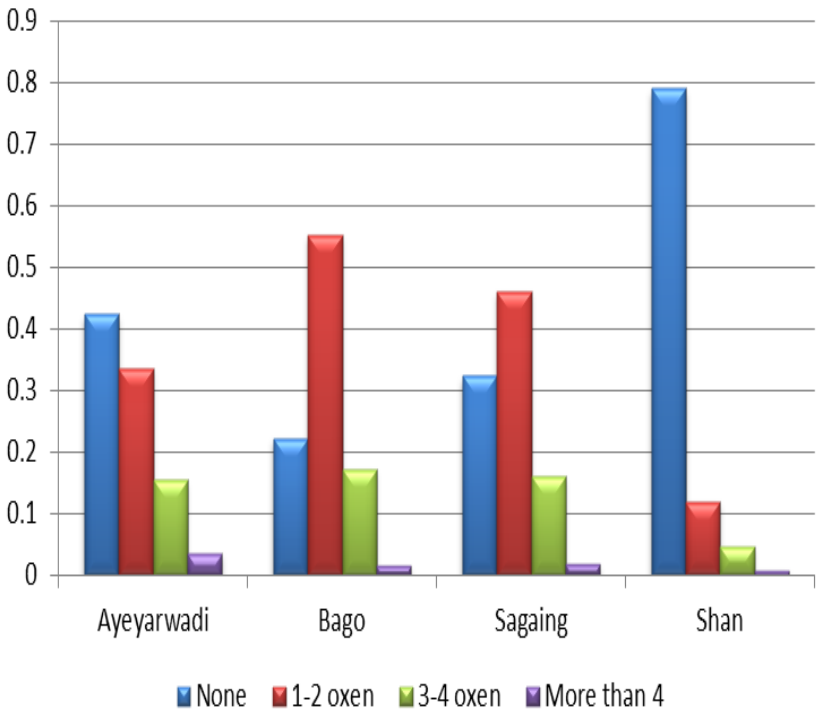


Agricultural Mechanization is just Starting in Myanmar

Possession of Agricultural Machinery

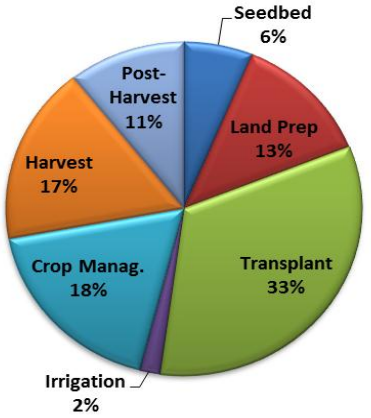


Possession of Draught Oxen



Message #2: Farm Labor in Myanmar is Increasingly in Deficit but Still Affordable Underpinning Traditional Technologies

- Rice production labor requirement:
  - 355 hours/acre
  - 42 days/acre
  - 104 days/ha



Average wage of hired labor: $2.4/day

- $1.83/day in Salt Water Area, Ayeyarwady
- $4.8/day in Border Area, Shan

Labor is More Expensive in Other Countries

Labor Use for Rice Production

	Days/Ha
Thailand	10
China	11
Vietnam	23
Cambodia	48
Philippines	69
India	78
Myanmar	**104**

Agricultural Wages

	$/day
Thailand	16.5
China	19.3
Vietnam	8.9
Cambodia	4.5
Philippines	7.6
India	4.2
Myanmar	**2.4**

Message #3: Monsoon Paddy Yields in Myanmar are Low

- Cultivated Areas and Yields

	Ha	Tons/ha
Ayeyarwadi:	2.13	2.89
Bago:	2.19	3.11
Sagaing:	0.84	2.86
Shan:	0.99	4.30
Average:	**1.71**	**3.14**

- Smaller farms have higher yields (tons/ha):
  - Small farms (up to 1 ha) : 3.11
  - Medium farms (from 1.01 ha to 2 ha): 2.86
  - Large farms (larger than 2 ha): 2.89

Rice Yields: International Comparisons

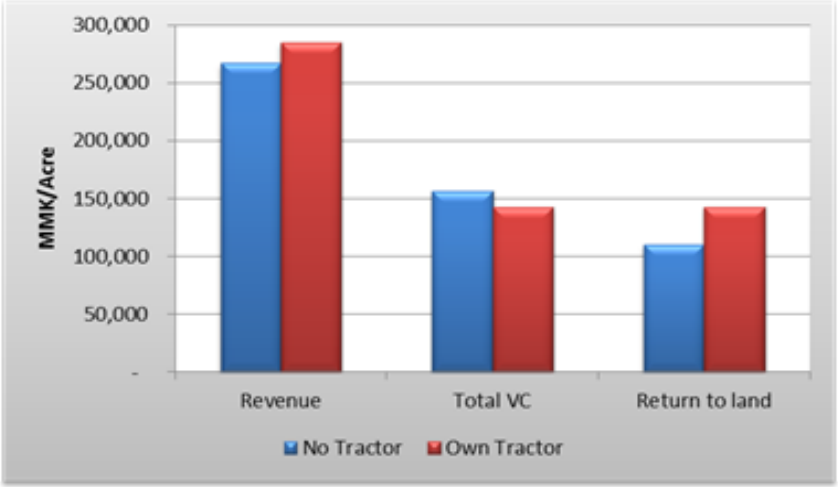
	Average (USDA) 2013/14-2014/15	Better Farms (Surveys)
Thailand	2.8	5.7
China	6.7	6.6
Vietnam	5.8	6.8
Philippines	3.9	6.3
India	3.6	4.7
Myanmar	**2.7**	**3.1**

Message #4: Monsoon Rice Gross Margins Vary Significantly

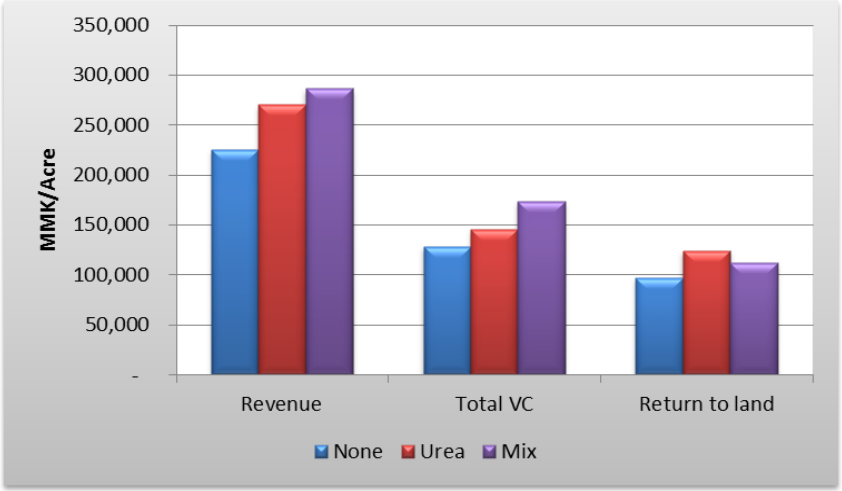
	Gross Margin, $/ha	Rice Area, Ha	Gross Margin per Farm, $
Dry Land/Sagaing	33	1.09	36
Salt Water/Ayeyarwaddy	202	2.49	503
Irrigated Tract/Sagaing	206	1.13	234
East Alluvial/Bago	392	2.33	913
Fresh Water/Ayeyarwaddy	241	2.22	536
River Area/Sagaing	271	0.41	110
Brackish Water/Ayeyarwaddy	321	1.85	595
West Alluvial/Bago	336	1.82	612
North Interior/Shan	380	1.09	416
South Interior/Shan	537	1.50	805

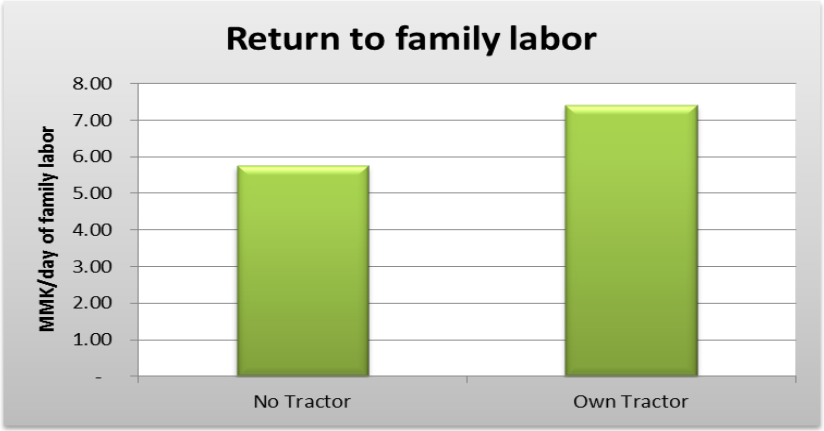
Message #5: Farmers Using Modern Technologies Generate Higher Returns to Labor but Not Always to Land

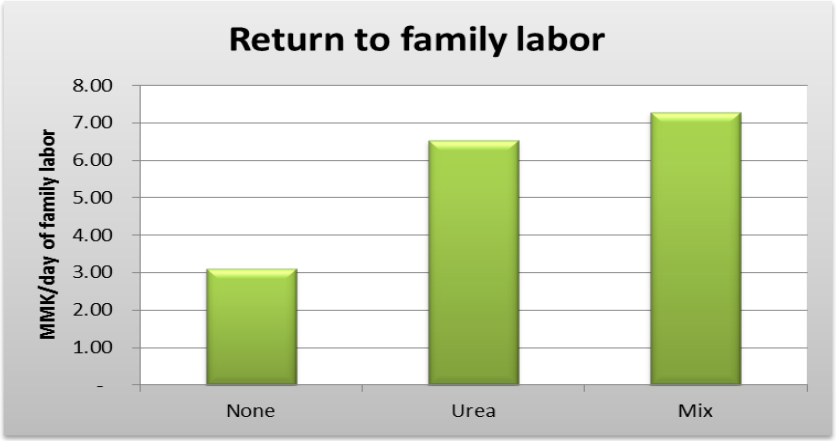
Tractor Ownership



Use of Fertilizers







Message #6: Smaller Farms Achieve Higher Rice Yields but Lower Returns to Land and Labor

	Average size, ha	Paddy yield, tons/ha	Gross margin (return to land), $/ha	Return to own labor, $/day
Small	0.55	3.11	208	2.92
Medium	1.53	2.86	252	5.84
Large	3.50	2.89	316	9.45

Next Steps

- Finalize the analysis of this first and second surveys (January 2015)
  - Develop more farm typologies (by size, technology, etc.)
  - Add more data on international comparisons
- Prepare the consolidated report (March 2015)
- Make the report and the data available to the public (May 2015)