Putting sustainable intensification into context: A household level analysis for rice based-farming systems in Central Luzon, Philippines

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Outline of the presentation

I. Background and personal motivation

II. Longitudinal household survey
   A. Central Luzon loop survey

III. Key results
   A. Rice yield gaps
   B. Rice self-sufficiency
   C. Profitability of rice farming
   D. Household income
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IV. Summary and discussion points
Background and personal motivation

• Global food security is at stake! given prospects of population growth and changes in diets.
• Resources are scarce and highly disputed.
• Distribution of food worldwide and food waste are the biggest problem of our food system.
• But... transportation of raw materials across the globe incurs high energy and transaction costs.
• Food must be produced locally, as much as possible.
• Sustainable intensification: 1) yield potential, 2) soil quality and 3) precision farming.

My personal motivation was to explore how sustainable intensification could fit into the local context of rice farming households in Central Luzon, Philippines.
Central Luzon Loop Survey:
IRRI, 1966-2012

Farm household survey 1966 - 2012
Unbalanced Panel
Rice yield gaps in farmers’ field
(Silva et al., under review)

Large rice yield gaps persist in Central Luzon: great potential to increase rice production! But there are risks involved!
Rice self-sufficiency at household level (following Hengsdijk et al., 2014)

Most households surveyed met their rice consumption requirements!
Profitability of rice farming
(further details in Moya et al., 2015)

Profitability from rice farming declined over time in Central Luzon, particularly during the wet season.
Household income and income sources
(see f.e. Takahashi & Otsuka, 2009)

For many households off-farm income (employment, remittances, etc.) is the major source of income.

Total number of households
n = 38
Income from rice > 50%
n = 25

Income from rice

Farm household (#)

1987 DS

2012 DS

Household income (x1000 PhP/yr)

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For quality of life
Temporal changes in family and hired labour
(further details in Moya et al., 2015)

There is a sharp decline in family labour over time which has been compensated by increasing hired labour.
Summary of the results and discussion points

1. Large rice **yield gaps**: scope for sustainable intensification in the future
2. Most farmers met their **rice consumption requirements** over time
3. **Profitability** from rice farming declined over time, particularly in the wet season
4. Importance of **off-farm income** sharply increased over time
5. Share of **family labour** decreased and share of hired labour increased with time
Thank you for your attention!

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