

# Rice Production among Beneficiaries and Non-beneficiaries of the Gulf of Muttama Project, Myanmar

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## Introduction

- Crop production accounts for about 80% of total agricultural income, rice occupies about 40% of the total agricultural area in the farm economy of Myanmar (MOAI 2014)
- Country average rice yield was about 4.1 tons/ha (MOAI 2010)
- Average crop production per hectare is still low due to poor soil, inadequate water supply, improper crop management and their income is very low and they have limitations to buy agricultural inputs (HELLETAS 2015)
- The Gulf of Mottama project (GOMP) is implemented by HELLETAS Swiss Intercooperation (Myanmar) with other local NGO and INGOs to conserve biodiversity and develop local communities sustainably

## Objectives

- Assess socio-economic characteristics of project beneficiary and non-beneficiary households, their constraints faced in rice production and rice productivity (yield)
- Investigate the influencing factors on rice productivity

## Methods

### 1. Households Interview

- Study Area** - 8 villages in Kyaikhto, Bilin and Thaton townships
- Sampling** - purposive random sampling
- Data collection**- personal interview by structured questionnaires (n = 106, beneficiary = 59, non-beneficiary = 47)



Figure 1: Household interview at Goe Phyu Gone Village

### 2. Focus Group Discussion

- Standard on Sustainable Rice Production (SRP) 1.0 (2015)
- From each village, usually a group of beneficiaries (6-9 farmers) and a group of non-beneficiaries (6-7 farmers)
- Total 14 FGDs



Figure 2: Focus Group Discussion at Boyargyi Village

### 3. Key Informant Interview

- With 10 experts from different departments and institutions that are involved in Myanmar rice production



Figure 3: Key Informant Interview at Department of Agriculture

### 4. Data Analysis

- Descriptive- Microsoft Excel program, Regression- R programming

## Conclusions

- Rice Production** is important in Gulf of Mottama region because about **55% of their income** come from rice
- Average productivity was 39 baskets/acre (about 2 tons/ha)** → **Lower** than the country average yield (4.1 tons/ha)
- Being **project beneficiary households** may help the farmers to get **more yield** and **reducing the number of tillage**
- Farmers have limited knowledge in using inputs in the best way and it is hard to be sustainable rice production
- Extension workers really **need to work** and there is a **gap** between extension agents and researcher
- It can be concluded that the **support of government institutions** plays a very important role to improve rice production

## Results

### 1. Socio-economic Characteristics of the Interviewed Households

- Average age of household heads (HH) = 53 years (t test, p-value = 0.248)
- Average experience in rice farming of HH = 27 year (t test, p-value = 0.373)
- Average farm size = 17 acres (t test, p-value = 0.768)
- Average family size = 5 (t test, p-value = 0.104)

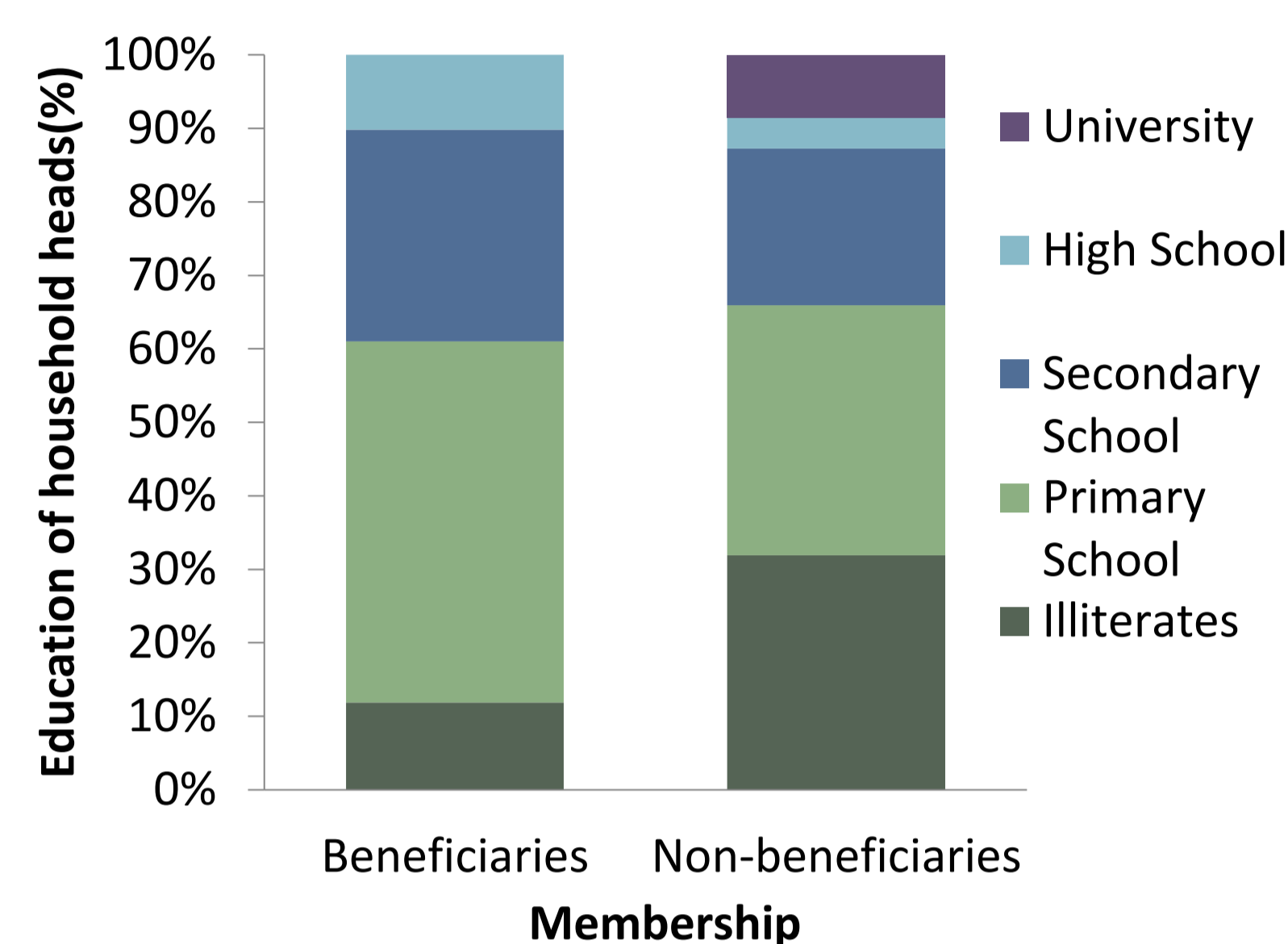


Figure 4: Distribution of education level among household heads of beneficiaries and non-beneficiaries (p-value = 0.009, Fisher's exact test)

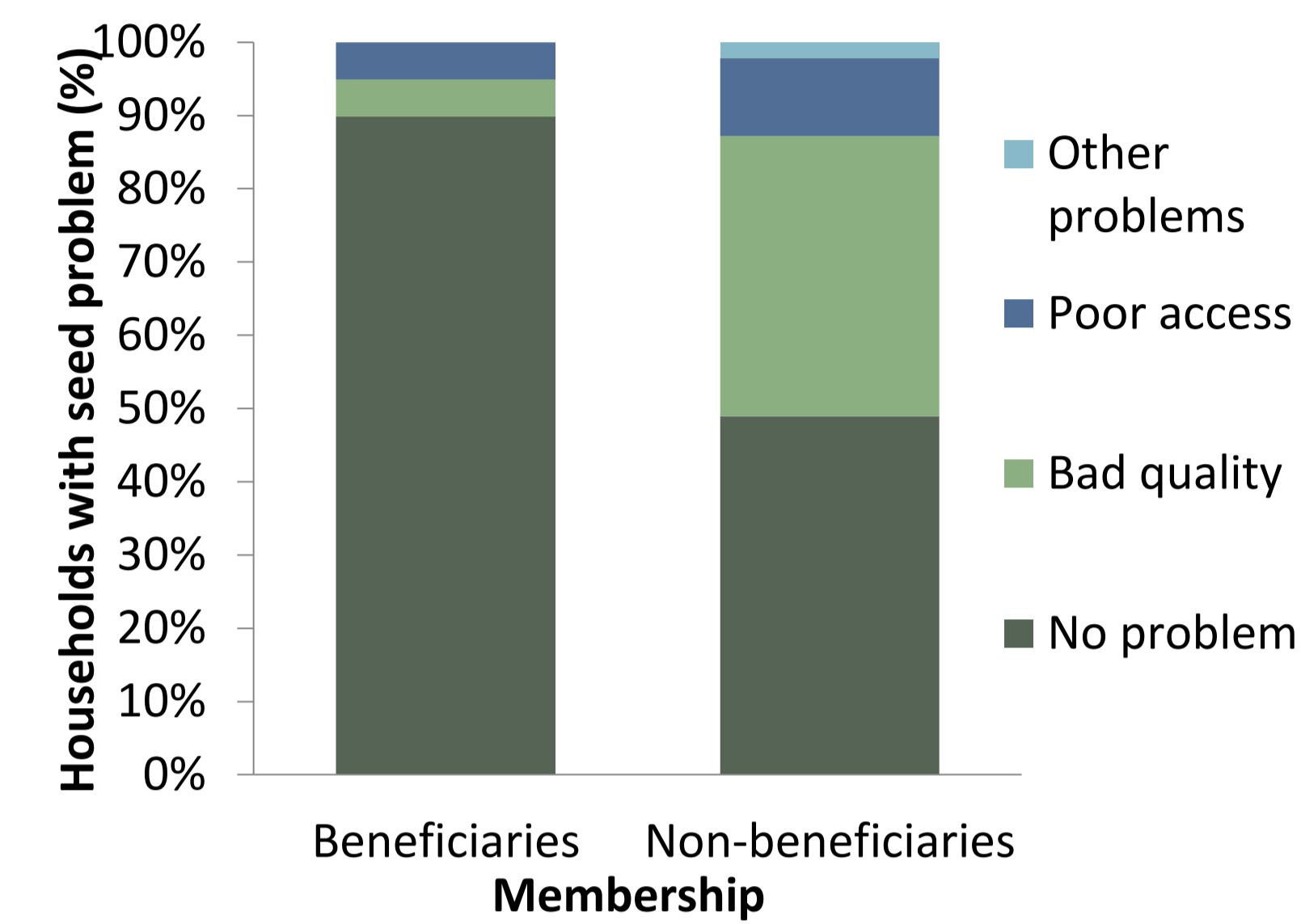


Figure 5: Percentage of beneficiary and non-beneficiary households who faced problems concerning seeds (p-value = 5.69e-06, Pearson's chi square test)

Table 1: Average household income from all sources by beneficiary and non-beneficiary households (in Thousand MMK)

Income source	Beneficiaries (n = 59)	Non-beneficiaries (n = 47)	t-test (p-value)
Rice sales	1,682	1,719	0.945
Other crops sales	46	76	0.565
Livestock sales	394	206	0.129
Non-agricultural activities	1,140	950	0.415

Table 2: Households using inputs for 2017 monsoon rice cultivation (in Percentage)

Items	Beneficiaries (n= 59)	Non-beneficiaries (n= 47)	Statistical test	p-value
Compound fertilizer	24	17	Pearson's chi square	0.545
Urea	69	62	Pearson's chi square	0.526
Triple Superphosphate	20	26	Pearson's chi square	0.688
Potash	12	4	Fisher exact	0.293
Mineral fertilizers	78	79	Pearson's chi square	1.000
Compost and FYM	22	6	Pearson's chi square	0.196
Pesticide	8	11	Fisher exact	0.748
Herbicide	10	23	Pearson's chi square	0.115

### 2. Determinants on Yield in 2017 Monsoon Rice Production

- Significant influence of being project non-beneficiaries on yield (p= 0.00596)
- Land preparation time also influenced negatively and significantly on yield at 5% level (p= 0.048)

Table 3: Yield (basket per acre) calculated with the model for direct seeding plots which used 1 basket per acre of seed rate and no herbicide use

	Beneficiary households	Non-beneficiary households
Tillage (1 time)	35.89	30.93
Tillage (2 times)	32.81	28.07
Tillage (3 times)	29.86	25.35

### 3. Sustainable Rice production and Role of Institutions

- One-third of the project farmers attended training
- Poor drainage (flooding and erosion)
- No soil test, apply fertilizers by observing plant and depending on financial situation
- Some non-beneficiary farmers still use legally banned chemicals that are used for control of wild ducks
- Not possible to harvest on time (labour and combine harvester problems), kept rice on the bunds and dried for 3 to 4 days without covering it at night
- Price of rice is low at harvest (no storage space and to repay bank loan)
- No government farm that provides seeds for rice production in study area
- Extension agents visit field 2-3 times/month and meet with key farmers
- No collaborations among government departments
- Inspectors for chemicals shops usually check the small retailers but never go to the large wholesalers, farmers can buy non-registered chemicals easily



Figure 6: Damage of drainage canal due to erosion

## References

