

Analyzing Farmer's socio-economic condition by using farming record data through the Greenway mobile application

Introduction

- 70% of people live in rural areas (MOALI 2014) and 87% living under poverty line (1USD/day) (World Bank 2019)
- Agriculture which is high share of employment, major income, 30% to Myanmar's GDP and 25% of the country exports (Eurocham 2019)
- Use mass media extension method in Myanmar for sharing agricultural knowledge (Oo 2016)
- Rate of mobile phone and internet use in Myanmar is increasing very fast (39% in 2015 to 50% in 2018 & 0% in 2002 to 31% in 2018) (ITU 2020)
- Farmers' application "Greenway", provide agricultural and livestock information, link different stakeholders, and included farming record feature (FRF) (Greenovator 2020)
- Gulf of Mottama Project (GoMP) supported financial part to promote FRF in the Greenway app and trained the use of FRF to the GoMP region's farmers since 2019 (Braun 2019)



Fig 1: Greenway app with farming record feature (Greenovator 2020)

Objectives

- Evaluating the socio-economic condition of farmers
- Exploring household income situation of farmers and the influencing factor on paddy income
- Investigating availability and interest in agricultural information and technology through the Greenway app

Methods

- Study area** - Bago region and Mon state in the side of GoMP
- 3 townships in Mon state and 2 townships in Bago region
- Data collection** - Distance survey and Greenway app data through the 46 Greenway app using farmers
- Sampling** - Random sampling method
- Analysis method** - descriptive, two sided test, , multi-linear regression
- Software** - Microsoft excel, R studio (R Studio Team 2019)

Conclusions

- Majority of Greenway app users is male ,49 years old and primary education level**
→ age and education level were not significant different in the two regions
→ farm labor in Bago region was higher than Mon state
- Household income was not significant different between the two regions**
→ 2020 monsoon paddy income was higher than 2019
→ Non-farm income in Bago region was doubly higher than Mon
→ Education level, gender male and variety are positively influencing on monsoon paddy income
- Availability of Agricultural information and challenges**
→ All the farmers interest agricultural information were available in Greenway app
→ Challenges: poor digital literacy skill and poor internet, high internet cost

References

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Results

1. socio-economic status of the selected households

- Household head gender = Male 80%, Female 20% (FET, p-value = 0.698)
- Household head age = 49 years (WRST, p-value = 0.028*)
- Household head farm experience = 21 years (WRST, p-value = 0.032*)
- Average farm size = 6.27 hectare (WRST, p-value = 0.051.)
- Average family member = 4.5 (TST, p-value = 0.103)
- Average non-farm labor = 1.1 (WRST, p-value = 0.375)
- Average farm labor = 0.68 (WRST, p-value = 0.001***)

Note: WRST: Wilcoxon rank sum test, "*" significant at 5% level, "***" significant at 0.1% level

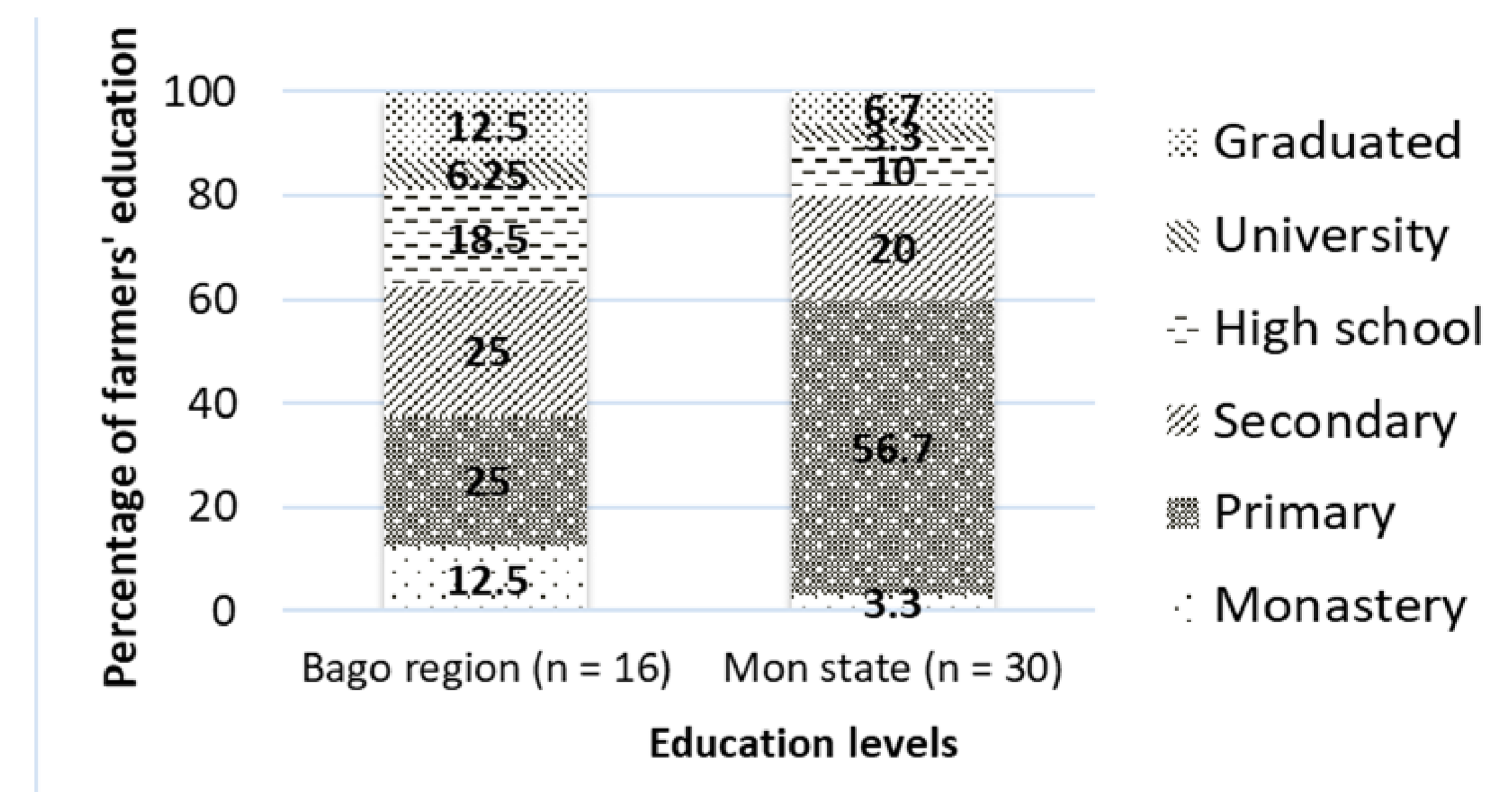


Fig 2: Education level of the selected households

2. Household income situation of the selected farmers

Table 1: Household income situation in the selected two regions

Average household income (USD/year)	Bago region (n = 16)	Mon state (n = 30)	T.test (p-value)	Test used
2019 monsoon paddy income	1580	1850	0.80	WRST
2020 monsoon paddy income	2880	2693	0.39	WRST
Non-farm income	3170	1491	0.36	WRST

Note: WRST: Wilcoxon rank sum test

Influencing factors on monsoon paddy income for both years

- Yield and price had positively and highest influencing factors
- Mon state has a negatively and significant influence ($p = 0.06$, effectiveness = -25 USD/ha and $p = 0.009$, effectiveness = -30 USD/ha)

2019 monsoon paddy income

- Education level: primary and graduated have positively significant influence ($p = 0.08$, effectiveness = 46 USD/ha and 51 USD/ha)

2020 monsoon paddy income

- Gender and Education: male and secondary education level had positive and significant influence ($p = 0.006$ & $p = 0.08$, effectiveness = 21 USD/ha)
- Variety: Paw San Bae Kyar had positively significant influence ($p = 0.003$, effectiveness = 42 USD/ha)

3. Agricultural information sources and interest

Major sources for agri-information

- Greenway app, GoMP staff, neighboring farmers, mobile, mass media (TV & radio), DoA

Usefulness of sources

- GoMP, neighboring farmers, mass media (TV & radio, mobile, DoA, Greenway app)

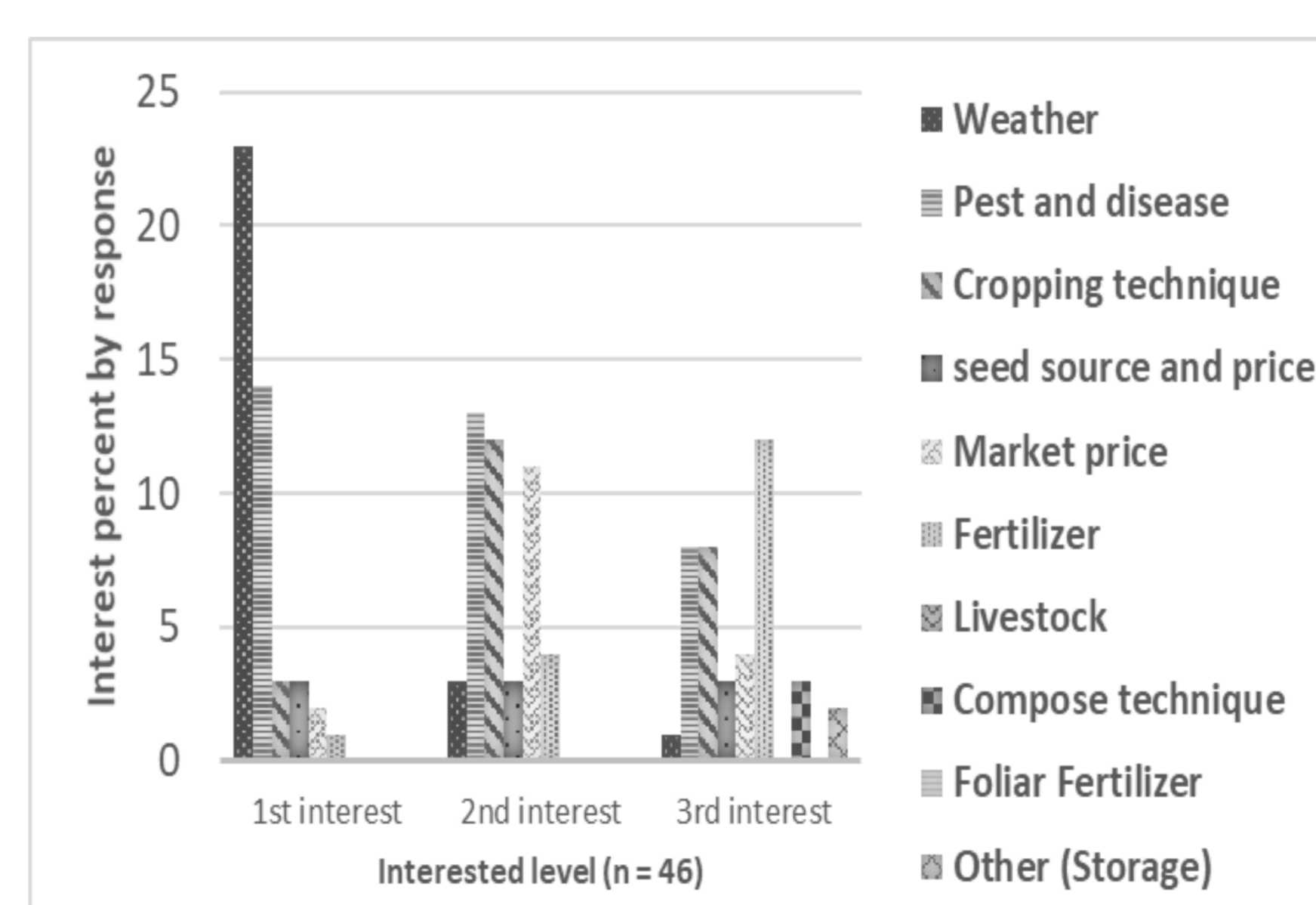


Fig 3: Farmers' interest agricultural information

Accessed information from the Greenway app

- Weather, "pest & disease", cropping technique, market price, compose technique, livestock, seed information, foliar fertilizer, storage

Main challenges to use Greenway app

- Not able to use high-technique mobile, poor internet connection & high internet cost

