Labour productivity in rubber latex tapping among smallholder rubber farmers in the Kyarinnseikkyi Township, Kawkareik district, Kayin State, Myanmar

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Hanoi University of Science and Technology (HUST) 26-28, May 2017
Outline:

1. **Introduction** – labour productivity, role of Myanmar Agriculture and contribution in GDP, Environmental Problems and effect on human health, Relevant question, Objectives, Sources of Data and Methodology

2. **Background** – General consensus Study Area rubber underperformed

3. **Some Key Observations**

4. **Results and Findings**

4. **Some Suggestions**

5. **Conclusion**
Introduction

Labor productivity means the quantity of output per time spent or numbers employed (Overman, Redding and Venables (2003))

- agriculture is the mainstay of the economy of Myanmar
- 32% (contributing in GDP in 2014/15)
- 61.2% of employment in agri:
- 825.56 ha in 1996 (set-up) in Kyarinnseikkyi
- 58% (natural rubber production) of Kayin State (Land Record Department, Kyarinnseikkyi, 2015)
- 19406.33 ha in 2015
- 7844 farm households relying on rubber cultivation (21 village tracts)
Relevant questions of research for rubber smallholdings

What are the major driving forces for labour productivity?
What are the factors that constraints in rubber latex tapping?
How to control Labour’s Health problem by Rubber tapping?

Geographical Background of the Study Area

- Southern part of Myanmar
- Total area: 1389.52 km²
- 21 village tracts and
- 129 villages

Figure: Location of Kyarinnseikkyi Township, Kawkareik District, Kayin State

Plate: rubber tapping
Source: photo, 30.4.2015
Sources of Data and Method

Secondary Data

Official Data

1. Statistical analysis
2. Standard deviation by plant (NFD)

Quantitative

Spatial variation of labour productivity

Primary Data

-Semi-structured, open expert interviewed, talks
-Field work: observation, mapping

1. Constraints of rubber farmers by Likert scale
2. SWOT method
3. Multi-level analysis, triangulation

Qualitative

Labour Productivity

Figure: Conceptual Frame Work
Source: Author, 2015
Spatial Distribution of Rubber lands in Kayin State

58% of natural rubber production of Kayin

Exploratory spatial data analysis

16 village tracts - +/-1σ
Cultivated area and number of plants - more than others
- labour productivity is higher than others

-Consequently: Labour productivity is concerning with Rural Development: Sustainability

Figure: Rubber Cultivated Area (ha) of Kayin State, 2015
Source: Land Record Department, Kyarinnseikkyi, Tsp

Figure: labour productivity by plant level on normal frequency distribution curve

Source: Structure Interviewed (April, 2015), Land Record Department, Kyarinnseikkyi
**What is Labour Productivity??**

**A:** Table: Expenditure of smallholder farmers on labour for each plant per year

<table>
<thead>
<tr>
<th>No</th>
<th>Items of expenditure</th>
<th>Cost of each plant/ kyats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cleaning</td>
<td>1205</td>
</tr>
<tr>
<td>2</td>
<td>To burning</td>
<td>250</td>
</tr>
<tr>
<td>3</td>
<td>Lay foundation</td>
<td>125</td>
</tr>
<tr>
<td>4</td>
<td>For pit</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>To put fertilizer to ground</td>
<td>41</td>
</tr>
<tr>
<td>6</td>
<td>To grow sprout</td>
<td>125</td>
</tr>
<tr>
<td>7</td>
<td>To put fertilizer to ground (2\textsuperscript{nd} time)</td>
<td>24</td>
</tr>
<tr>
<td>8</td>
<td>To wait rain, 25 days</td>
<td>3125</td>
</tr>
<tr>
<td>9</td>
<td>To clean for grass by machine</td>
<td>625</td>
</tr>
<tr>
<td>10</td>
<td>To feed fertilizer</td>
<td>41</td>
</tr>
<tr>
<td>11</td>
<td>To maintain wet for stem</td>
<td>300</td>
</tr>
<tr>
<td>12</td>
<td>To control / burn fire</td>
<td>22.4</td>
</tr>
<tr>
<td>13</td>
<td>Bestir</td>
<td>1562</td>
</tr>
<tr>
<td>14</td>
<td>To collect latex</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>6473.4</strong></td>
</tr>
</tbody>
</table>

**B:** Experienced constraints of rubber farmers

- Incidence of fire
- Poor rubber prices
- Pests and diseases
- Inadequate research and...
- Lack of market information
- Inaccessibility to farm inputs
- Shortage and high cost of labour
- Land tenure problem
- Storage facilities problem

**B:** Source: Structured Interview (April, 2015)

**Note:** based on Likert scale (Osuala, 1993) method

**A:** The labour productivity measure by dividing gross value of individual plants at factor cost by the number of workers in that plant (Webber and Michael Horswell)
Overview results and findings
Rubber labour Productivity: Strength of productivity is determined by weakness

- low level of inputs
- poor quality of fertilizers
- outdated cultural practices - nursery, tapping
- lack of credit (MOAI)
- poor infrastructure farm roads, storage facilities

- lack of proper processing facilities
- high processing cost
- lack of Financing
- lack of waste-water treatment
- low quality output smoked sheets (colour)

- exports – inconsistency of quality and supply
- dependency on China and Thailand market
- lack of international markets information
- increasing border trade – especially to China
- high transportation, logistics and handling costs

Environmental Problems and effect on human health
- Smoked rubber effects on labours’ health
- Dried rubber sheet causes air and water pollutions, main concern is the smoke particles from fuel wood burning
- In rubber latex industry, main concern is wastewater and odour pollution (open interviewed, 2015)

Source: Author, 2015

Thank You!!

How to create Rural Development Partway??
How to control Labour’s Health Problem??
Environmental issues affecting on agricultural production in the Vietnam Mekong Delta

Duong Van Nha
Faculty of Agriculture and Rural Development
Kien Giang University

Ha Noi, 26-28 May, 2017
Contents

1. Introduction about The Mekong Delta of Vietnam (VMD)
2. Environment affecting on crop production
3. Environmental change creating a good opportunity for agriculture?
4. Discussion
People’s livelihoods in the Mekong Delta Vietnam
The Mekong Delta ranks amongst the top 5 deltas in the world most likely to be severely affected in terms of climate change (IPCC, 2007)

Expected environmental impacts on the Mekong Delta (Tokuko, 2011)

- **Primary Impacts**
  - Temperature Change: 1.1°C (2050), 1.5°C (2070)
  - Precipitation Rainy Season: -5 to 5%, Dry Season: -5 to 0% (2050)
  - Sea level rise: 12 cm (at present), 33 cm (2050), 45 cm (2070)
  - Increased frequency and intensity of typhoons

- **Implied Impacts**
  - More floods and droughts (less water during dry season)
  - Possible permanent inundation for some areas
  - Increased salinity intrusion (area and duration)
  - Increased risks of infectious diseases

Potential scenarios developing agriculture in the Mekong Delta (Mekong Delta plan, 2013)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Safe</em> (Required safety level, Costs of flood protection, Return on investment of safety level)</td>
<td>Very low</td>
</tr>
<tr>
<td><em>Prosperous</em> (competitive advantage, effective urbanisation and industrialization, Cost-effective infrastructure)</td>
<td>Low</td>
</tr>
<tr>
<td><em>Sustainable</em> (water, landuse, flood defence, coping with climate change and external economic development)</td>
<td>Low</td>
</tr>
</tbody>
</table>
Affecting on agriculture

Agricultural fields damaged by drought-salt intrusion in the Mekong Delta (2016)
Temperature, Precipitation affecting crop production

Drought caused a decrease of 20-30% of crop productivity (MARD)

+ 1°C, rice output will reduce 10% (MARD)
Global Warming: Who Loses—and Who Wins?
Climate change in the next century (and beyond) could be *enormously disruptive, spreading disease and sparking wars*. It could also be a *windfall* for some *people*, *businesses*, and *nations* (Gregg Easterbrook, 2017)

Is there any advantage for agricultural production in the Vietnam Mekong Delta under climate change condition?

i) *supporting and stimulating a diversified and specialised high value agricultural sector(s): utilizing brackish aquaculture, flood-base agriculture and fresh aquaculture, fruits etc.*) and;

ii) *Establishing a thriving agro-based research, development and innovation capacity that enhances the future adaptability of agricultural production systems to the changing resources dynamics* (Mekong Delta plan, 2013)
Adaption strategies to changing environment in the Mekong Delta

• Scientists
  – Water saving irrigation
    • Alternative Drying wet irrigation on rice [Hung, (2015), Tin (2012)]
    • Partial rootzone drying irrigation on sweet potato (Nha, 2016)
  – Mitigating impact of salt intrusion by applying chemicals: Si (Nhan, 2013), Ca (Thien, 2016)
  – Creating new salt tolerance varieties (Can Tho Uni., Omon rice research institute)

• Authorities
  – Building high dyke to prevent salt intrusion in dry season and store fresh water
  – Re-structuring agricultural patterns to adapt to “new environment”
Adaption strategies implemented by farmers in Kien Giang province (Dale, 2017)

Farmers’ future plans for adapting to saline in Kien Giang province (Dale, 2017)

• Adaption strategies implemented by farmers in Long An province (AGU, 2016)
  ➢ Choosing salt tolerance varieties
  ➢ Switching rice-rice to shrimp-rice
  ➢ Choosing salt tolerance varieties or long - day varieties
  ➢ Adjusting crop seasonal calendar
4. Conclusion

- Environment showed not only negative effects but also potential for agricultural activities in the Mekong Delta
- People in the Mekong Delta implemented several adaptations to existing environmental changes and adaptive strategies for future
- Environmental trend will be expected to be a big challenge for agriculture in the future

- **Recommendation:** stakeholders in agriculture working together to mitigate negative impacts of and to adapt to environmental changes based on potentials

Thanks for your attention!
Gender in Mangrove Resource Management: A case study in a coastal district of Quang Tri province, Vietnam

Presenter: Dr. Nguyen Thi Hong Mai

DAAD-Ha Noi: 26-28 May 2017
1. Background of the research

Quang Tri is a province in the Central Coastal region with a total coastline of 75 km. This is a place heavily influenced by extreme weather.

Trieu Phong is one of the two districts of Quang Tri province with a mangrove land area about 789 hectares (ha).

The study was conducted in two communes Trieu Do and Trieu Phuoc in Trieu Phong district, Quang Tri province, where mangroves disappear over a long time. The restoration and new planting process have started since 2011 (Trieu Phuoc) and 2015 (Trieu Do). At present, the total area of mangrove is newly planted in the area of 58.5 ha.

Household interviews were conducted by random sampling with 80 households in these two communes.
2. Objectives of the research

**General objective:**
To contribute to scientific and practical basis for research on gender role in usage and management of mangrove forests.

**Specific objective:**
- To understand the role of gender in exploitation and management mangrove forests.
- To propose solutions to involve gender issues in mangrove forest management.
3. Gender and Mangrove-based Livelihoods

- **Gender participation:**
  + Aquaculture: 1.7% Female
  + Fishing: 68.3% Female

- **Gender-based labor division:**
  + Men play the main role in both aquaculture and fishing.
  + Women: Minor role in mangrove-based livelihoods

  Housewife- Small business.

- **Other mangrove resources use**
  (24% surveyed Households):
  Bird trapping (Male);
  Vegetables (Female)

**Products exploited by Men are more destructive than by Women.**
3. Gender and Mangrove-based Livelihoods

- Positive changes related to Mangrove forest develop:
  - Increasing the natural products: shrim, fish, bird
  - Protecting dykes, preventing impacts of flood to shrim and fish ponds
  - Protecting aquaculture cultivation
  - Contributing to income increase from aquaculture production
- Negative changes
  - Difficult for catching fish/shrim → destroy forest
  - Increasing environmental pollution → difficult for aquaculture cultivation

No difference between female and male in perception of mangrove forest role.
3. Gender and Mangrove-based Livelihoods

- Changing job when mangrove forest develop:

<table>
<thead>
<tr>
<th>Observed communes</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trieu Phuoc</td>
<td>34 (85%)</td>
<td>6 (15%)</td>
<td>40 (100%)</td>
</tr>
<tr>
<td>Trieu Do</td>
<td>10 (25%)</td>
<td>30 (75%)</td>
<td>40 (100%)</td>
</tr>
</tbody>
</table>

Test Chi-Square P-value = 0.000

There is difference between Trieu Phuoc and Trieu Do commune in Mangrove-based job changing. Trieu Do has 2-year mangrove forest, while Trieu Phuoc has 7-year Mangrove forest.

Mangrove forest develop, local people tend to change their livelihoods
3. Gender and Mangrove-based Livelihoods

Changing job when mangrove forest develop:

- Women will be more likely to stay with mangrove areas than men.
4. Gender differences in planting, managing, and protecting the mangroves

Forms of mangrove forest protection in the study area

- Patrol: The management team of the commune patrol periodically or unscheduled
- Making fences to prevent the destroy of people’s activities and cattle.
- Divided forest for local people to exploit and protect.

Organizations supporting mangrove management: Commune People’s Committee, mangrove planting project and Forest Protection Unit of the district.
4. Gender differences in planting, managing, and protecting the mangroves

Participation in Forest planting

- Participation: 30%
- Non-participation: 70%

Participation in Forest Protection

- Participation: 46%
- Non-participation: 54%

100% of women participate in mangrove forest planting.

100% of women are excluded from forest protection.
5. Factors influence producing gendered differences in Mangrove forest management

- Women are excluded from the mangrove protection and management process, due to
  
  + Differences in gender perception on mangrove management shaping access, marginalization.
  
  + Labor division by gender.
  
  + Lack of the women’s voice in the community activities

- Lack of involvement of community organizations

- Lack of regulations for common resource use and management.
6. Some conclusions and recommendations

Conclusions
The majority of local people still bases on mangrove forest for their livelihoods.

The proportion of women involved in the cultivation and exploitation of mangrove products is less than men, while women are more dependent on and their exploitation is less destructive.

Mangrove planting has been intensified over the years in Trieu Do and Trieu Phuoc communes. But management activities are still difficult due to lack of regulations for mangrove forest management.

There are still many limitations on the role of women in mangrove management.
Some conclusions and recommendations

Recommendations

Enhancing the participation of community organizations to increase the voice of women and marginalized people

Developing mangrove conservation strategies that consider potential impacts on vulnerable groups such as women when changes occur due to mangrove restoration and development

Producing regulations on forest protection to be able to handle violations causing by both local people and external factors.

Training courses on forest protection and management should involve local people in considering gender issues.

Raising awareness on women's roles in natural resource management. Excluding negative thinking about women's predetermined roles such as women can not participate or do well in forest management.
Thank you for your attention!
workshop 3 Rural Development: sustainability-Ecology-Gender

"Ecotourism for environmental conservation of the Songkhla Lake Basin (SLB), Thailand".

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Assoc.Prof.Dr. Parichart Visuthismajarn Director
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Assoc.Prof.Dr. Umaporn Muneenam FEM
Dr. Utit Sangkarat Faculty of Liberal Arts
Dr. Nutthida Suwanno Faculty of Management Science
What is the problem and why?
What has been done about it?

1. To develop a master plan for Songkhla Lake Basin development.
2. To design approaches to implementation of the plan and to develop a cooperative plan.
3. To encourage community in development of conservation direction and sustainable improvement of quality of life and environment.

Ecotourism: alternative sources of income

Prince of Songkla University
Taksin University
Tourism resources survey:
212 tourism sites
- 79 natural tourism sites
- 133 archeological, historical and cultural tourism resources
What is the presenter doing (or has done)?

- **Strengthening human capital** for sustainable development by ecotourism learning and networks around the lake.

- **Output of research to community outreach**
  - Consolation regional best prize by the National Agricultural Innovation Contest with villagers in 2016 by the Office of Science and Technology.
  - Project of connecting shoot of pepper jack in related to Agri-Eco tourism in Khuan Kaeng swampy, Tha Samet sub-district, Songkhla Lake Basin (SLB), Thailand
What additional value does the presenter’s approach provide?

- **3V’s human capital by Prof.Dr.Chira Academy.**
  - Value added.
  - Value diversity.
  - Value innovation
- **Thailand 4.0 (Agritourism)**
  - The project will help address these issues by investigating the feasibility of sustainable community-based ecotourism as a means of raising awareness about the importance of the natural environment of the Songkhla Lake Basin and supplementing the income of local people through ecotourism-related activities.
Where do we go from there?

- Ecotourism for poverty.
- The purpose of ecotourism is to help visitors learn about the environment and culture of the areas they visit, whilst at the same time bringing benefits to the local environment and communities. Proposals for ecotourism activities will therefore meet the following criteria:
  - The local community should decide whether or not they wish to invite ecotourist visitors, and the number of visitors should be controlled by the local community, within the limits of the carrying capacity of the area.
  - Visits should not take place at times or to areas where there will be a significant impact on the wildlife and environment of the lake.
  - Benefits from tourism should be spread fairly through the local community.
Love Lake
Tour Lake
Preserve Our Lake