



ความมั่นคงทางสังคมของระบบวนเกษตรยางพารา สู่ความเข้มแข็งของชุมชนชนบทภาคใต้ของประเทศไทย วิโชติ จรุงรุ่งโรจน์

Social Security of Rubber-based Agroforestry System towards Strengthening Rural Communities in Southern Thailand

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บทคัดย่อ

กว่าร้อยละ 90 ของสวนยางพาราในประเทศไทย เป็นสวนยางเชิงเดี่ยวและขึ้นอยู่กับความไม่แน่นอนของราคายาง ส่วนที่เหลือมีการทำสวนยางแบบวนเกษตรเพื่อลดความเสี่ยงด้านเศรษฐกิจและฟื้นฟูสภาพแวดล้อม ในขณะที่ด้านสังคมศาสตร์ของวนเกษตรยางพาราดูเหมือนจะถูกละเลยโดยเกษตรกรและนักวิชาการส่วนใหญ่ การศึกษานี้มีวัตถุประสงค์เพื่อประเมินความมั่นคงทางสังคม ซึ่งเป็นคุณค่าที่ซ่อนเร้นของระบบวนเกษตรยางพาราในภาคใต้ของประเทศไทย และเชื่อมโยงสู่ความเข้มแข็งของชุมชนชนบทในอนาคต สำหรับระเบียบวิธีการวิจัยที่ใช้ เป็นการวิจัยเชิงคุณภาพ มีการพัฒนาตัวชี้วัดความมั่นคงทางสังคม รวบรวมข้อมูลด้วยการสัมภาษณ์เชิงลึก กลุ่มตัวอย่างที่เลือกมาแบบเจาะจง ได้แก่ เกษตรกรที่ทำวนเกษตรยางพาราในจังหวัดสงขลาและพัทลุง จำนวน 12 ราย และตรวจสอบกับเพื่อนบ้าน 36 ราย และผู้นำหมู่บ้าน 12 ราย แล้วนำข้อมูลมาวิเคราะห์โดยเทคนิคการวิเคราะห์เนื้อหา ผลการศึกษา พบว่า เกษตรกรกลุ่มตัวอย่างที่ทำวนเกษตรยางพาราทั้งหมด (1) มีความรู้ในการทำวนเกษตรยางพารามากขึ้นตั้งแต่ระดับมืออาชีพถึงระดับกึ่งทักษะ (2) ได้รับการยอมรับจากบุคคลและองค์กรต่างๆ ที่เกี่ยวข้อง และ (3) มีสุขภาพดีขึ้นเป็นผลจากการทำงานในส่วนที่ร่มรื่น สดชื่น และได้บริโภคผลผลิตพืชร่วมยางแบบอินทรีย์หรือใช้สารเคมีทางการเกษตรน้อย กลุ่มตัวอย่างส่วนใหญ่บริโภคผลผลิตพืชร่วมยางระหว่างร้อยละ 8-80 ของปริมาณผลผลิตพืชร่วมยางที่ผลิตได้และเข้าร่วมในเครือข่ายส่งเสริมการทำวนเกษตรยางพารา กลุ่มตัวอย่างครึ่งหนึ่งเข้าร่วมกลุ่มในชุมชนที่ส่งเสริมการทำวนเกษตรยางพารา และกลุ่มตัวอย่างจำนวนน้อยใช้และบริโภคผลผลิตพืชร่วมยางเพื่อใช้ในงานประเพณีต่างๆ นอกจากนี้ ความมั่นคงทางสังคมของเกษตรกรที่ทำวนเกษตรยางพารายังอาจช่วยสร้างความเข้มแข็งแก่ชุมชนเกษตรในอนาคตได้ แต่ระดับของชุมชนเข้มแข็งนี้ขึ้นอยู่กับตัวเร่งต่างๆ โดยเฉพาะอย่างยิ่ง การวิจัยระบบวนเกษตรยางพารา นโยบายสาธารณะที่ส่งเสริมการทำวนเกษตรยางพารา การเพิ่มจำนวนเกษตรกรที่ทำวนเกษตรยางพารา การขยายพื้นที่วนเกษตรยางพารา และความหลากหลายของชนิดวนเกษตรยางพาราในแต่ละชุมชนในอนาคตระบบวนเกษตรยางพาราอาจใช้เป็นมาตรการแบบประเพณีที่ช่วยเสริมโปรแกรมประจำด้านสวัสดิการทางสังคมของรัฐบาลในพื้นที่ชุมชนชาวสวนยางที่มีอยู่จำนวนมาก

คำสำคัญ: ความมั่นคงทางสังคม ระบบวนเกษตรยางพารา ชุมชนชนบท ภาคใต้ของประเทศไทย

Abstract

Over ninety percent of rubber plantations in Thailand are monocropping and depend on price uncertainty. The rest practice rubber-based agroforestry (RBA) to reduce economic risk and restore environmental conditions. Meanwhile, social science aspects of RBA seem to be overlooked by most farmers and academics. This study aims to assess social security, a hidden value of rubber-based agroforestry system (RBAS) in Southern Thailand, and link up with strengthening rural community in the future. Methodology adopted was qualitative research, indicators development of social security, in-depth interview with purposive samples, i.e. 12 sampled RBA farmers in Songkhla and Phatthalung and cross-check on 36 neighbors and 12 village leaders, and data analysis by content analysis technique. The results showed that all RBA farmers gained: (1) more RBA knowledge ranging



from professional to semi-skill levels, (2) respects from individuals and related organizations, and (3) better health as a result of work in farms under shady and refreshing circumstances and consuming organic or low-agrichechemical products from the associated crops. The majority of RBA farmers donated 8–80 % of the products for charity, and participated in networks promoting RBA. Half of RBA farmers joined their community groups promoting RBA. A few RBA farmers used and donated their products for traditional activities. The social security of RBA farmers might help strengthen their rural communities in many aspects but levels of the strong communities depended on some accelerators, especially RBAS research, RBA promoting public policy, RBA farmer number, RBA area expansion, and diversity of RBA types in each rural community. In the future, RBAS can be one of the traditional measures to supplement the routine social welfare programs of governments in many rubber cropping-based communities.

Keywords: Social Security, Rubber-Based Agroforestry System, Rural Communities, Southern Thailand

Introduction

Currently, social insecurity caused by domestic and international conflicts is a national agenda of many countries. Definitions of social security may vary. One is a concept that seeks to operationalize human security, human development and state-building paradigms at the local level (UNDP, 2009). Another is a good relationship in a household and a community where members help each other and have life and property safeguards (Piwnil, 2011). There are various measures to manage social security. In Thai rural community, it has been managed by both traditional ways and routine social welfare programs of local and central governments such as basic education, public health, and disaster mitigation. Basically, rubber-based agroforestry system (RBAS) could generate income from various species; increase food security and timber; provide environmental benefits, including biological diversity, carbon dioxide fixation, watershed protection and soil conservation (Joshi, Wibawa, Beukema, Williams, & Van, 2003). In the future, a traditional way to support the social security may be RBAS, although about 90% of the total rubber farms in Thailand were smallholding farms, focusing on rubber monoculture activities rather than diversity (Somboonsuke, & Wettayaprasit, 2013, pp. 56, 60). In a biodiversity

plot, species A constructs the environment in which species B must live. This point of view is useful in all ecological systems, especially in understanding the human/environmental dynamics inherent in the agricultural ecosystem (Goldberg, 1990). Hence, the objectives of this study aim to develop some indicators for social security and apply to scrutinize social security of farmers practicing RBAS and link it with strengthening their rural communities.

Materials and Methods

(1) Study period: Collected and analyzed data in 2014

(2) Targets and criteria: 12 sampled farmers practicing rubber-based agroforestry (RBA) in Songkhla and Phatthalung of Southern Thailand were selected based on the following criteria: 1) advice from community leaders and scholars; and 2) diversity of RBAS. 36 neighbors and 12 village leaders of the 12 sampled farmers were chosen based on the following criteria: 1) they are well known among the sampled farmer; and 2) most of them receive products from the associated crops in rubber plots from most sampled farmers

(3) Indicators development: In this study, seven indicators of RBA social security were developed. These consisted of: 1) products from the associated



crops for charity; 2) better health of RBA farmers; 3) more knowledge of RBA farmers; 4) products from the associated crops for tradition; 5) RBA farmers gained respect from individuals and related organizations; 6) RBA farmers joined their community groups promoting RBA; and 7) RBA farmers participated in networks promoting RBA.

(4) Questionnaires: Based on the seven indicators, three types of questionnaire were identified: firstly, a questionnaire for the 12 sampled farmers; secondly, one for the 36 neighbors; and thirdly, one for the 12 village leaders.

(5) Data collection: (5.1) Secondary data collected over the study period (5.2) Field survey and semi-structured interview: the 12 sampled farmers were interviewed and cross-checked by the 36 neighbors and the 12 village leaders (with a ratio of 1 sampled farmer: 3 neighbors: 1 village leader).

(6) Data analysis: A technique of content analysis was used to group the contents based on seven indicators. Then they were counted, analyzed, and synthesized.

Results

A. Social Security of the RBA Farmers

The social security of 12 sampled farmers can be described based on seven indicators as follows:

1. More knowledge: The knowledge that 12 sampled farmers gained from RBA practices is how to increase growth and products from rubber and the associated crops which could be classified as follows:

1.1 RBA balanced ecosystem: Plant diversity in RBA plots would increase soil fertility and humidity. The good soil was filled with a number of earthworms and microorganism that decomposed organic matter and improved the soil structure. Moreover, different types of tree canopies decreased

soil erosion caused by heavy rain and plant density in the plot mitigated storm damage.

1.2 Planting time and space: A single row of bamboo (*Bambusa sp.*) in the middle of rubber inter-rows should be planted when rubbers are 4–5 years old because their roots are far away from bamboo roots, so they do not compete for food. Single rows of Eagle Wood (*Aquilaria crassna* Pierre ex H. Lec.) in the middle of rubber inter-rows should be planted when rubbers are 7 years old as their roots can intertwine with those of Eagle Wood and help prevent the latter from being blown away during storms. Single rows of Mangosteen (*Garcinia mangostana* L.) in the middle of rubber inter-rows should be planted when rubbers are only 1–2 years old because a growing Mangosteen needs a lot of sunlight.

1.3 Miang + rubber: The plots had very humid organic matter because Miang (*Gnetum gnemon* Linn.) shed leaves continuously. Rubber roots extended laterally while those of Miang penetrated deeply into the ground, so they did not compete for food. Miang is drought-resistant and easily taken care of. They did not taste bitter because the trees grew under the rubber shade. A plot produced more latex than a nearby mono rubber plot on the same farm with the same varieties growing at the same time, under the same growing space and care.

1.4 Sala + rubber: Sala (*Zalacca edulis* Reinw.) did not shed their leaves. It covered the topsoil so well that there was more humidity in the plot. Watering Salas in summer increased latex yield for about 5–10 per cent.

1.5 Timber + rubber: Both rubber and Ironwood (*Hopea odorata* Roxb.) shed their leaves at the same time but in a different way. Rubbers shed all their leaves, while Ironwoods sprouted new leaves



before shedding the old ones. Hence, the plantation was not too dry in summer.

1.6 Bamboo + rubber: Soil in the plot had more organic matter and humidity with fewer weeds, resulting in the low cost of weed control and less soil erosion. Bamboos grew under the rubber shade and consequently produced fewer shoots than they would in the open air; their stems were straight and suitable for use.

1.7 Kor + rubber: The plot had many shady areas, resulting in soft rubber bark. Rubber roots extended laterally while those of Kor (*Livistona speciosa* Kurz) penetrated deeply into the ground, so they did not compete for nutrients.

1.8 Mangosteen + rubber: The plot had moist soil during the period when rubbers shed their leaves. Rubber bark was thick with soft tapped surfaces. Mangosteen growing under the rubber shade had glossy beautiful fruit.

1.9 Yellow palm + rubber: Yellow palm (*Chrysalidocarpus lutescens* H. Wendl.) could resist drought and flood. It grew under the rubber shade and consequently had soft leaves that met the market demand.

2. Respect from individuals and organizations: All 12 sampled farmers gained respect from individuals and related organizations, based on five indicators as follows:

2.1 Invitations: 5 out of 12 sampled farmers were invited to be guest speakers, committee members and consultants for RBA promotion. The invitations come from many organizations such as the Green World Foundation, schools, universities, local governments, the Bank for Agriculture and Agricultural Cooperatives, the Office of the Rubber Replanting Aid Fund.

2.2 Awards: 4 out of 12 sampled farmers received awards in relation to RBA practices.

Mr. Suchart was awarded an excellent farmer on forestry plantation from the Royal Forest Department. Mr. Hmadcha was a role model for the forestry village project under the Royal Forest Department. Mr. Vun was eligible for an award presenting to those devoting themselves for agricultural development under the Department of Agricultural Extension. Mr. Vitoon won the Green World Award from the Green World Foundation.

2.3 Learning plots: RBA plots of 12 sampled farmers were learning centers for their communities and the public. Some neighbors visited the plots and asked for best RBA practices. Some plots became research areas for students and scholars. Several plots were formally declared by the government agencies as their RBA demonstration plots.

2.4 Publishing and media: RBA best practices of 5 from 12 sampled farmers were published in the *Natural Agriculture Journal* and the *Rubber Replanting Aid Fund Journal*, and broadcasted via the Internet and radio.

2.5 Call advice: 4 out of 12 sampled farmers provide the public with call advice on RBA.

3. Better health: The result showed that all 12 sampled farmers had better health because they usually worked in farms under shady and refreshing circumstances and ate chemical-free products from the associated crops such as Sala, Mangosteen, Longkong (*Lansium domesticum* Corr.), Campada (*Artocarpus integer* Merr.), Rambutan (*Nephelium lappaceum* Linn.), Miang leaves and Bamboo shoot. Certainly, some stories regarding better health could be cited as follows: Mr. Suchart said, "I work in a shady farm where there are various kinds of trees and



birds. I can see spring, flowering and fruiting in my farm and eat my chemical-free products from associated crops. They make me happy and healthy.” Mrs. Sumruay explained, “Food from Miang leaves is tasty and good for health. This kind of tree can grow without pest so I never use any pesticides.” Also, eating Miang leaves could maintain tendons, bones and eyes (Julkaew, 1993). Mr. Koncharnart said, “My Bamboo associated crop provides a lot of oxygen and lower canopy, so my plot is cool and shady. It is good for my health. My neighbor who is tired from doing his daily farm work likes to get a rest and feel refreshed in my plot.” Mr. Hmadcha explained, “Because of my small rubber farm, I changed from monocrop to organic and associated crop. It improved my family’s health because we can sit in a shady and fresh farm during daytime and eat our organic fruits and vegetables.” Mr. Vitoon said, “I changed my rubber plots from monocrop to RBA since 1995. Nowadays, it is a high biodiversity and organic farm filled with local food and herbal plants, so my health is better than it was in the past.”

4. Products from the associated crops for charity: 10 out of 12 sampled farmers had 12 kinds of RBA products for charity. The ratios of donations ranged from 8 to 80 %, and the rest were distributed for sale and/or consumption. The ratio differences were influenced by the following factors: (1) prices of RBA products. The higher the price, the more the sale; (2) in a community where specific RBA was popular, the donation ratio would be small or none; (3) a farmer’s expectation of making friends and helping each other; (4) kindness to the poor; and (5) donation for charity in a rural community is a traditional way. Two types of donations were: (1) a specific donation for relatives, close neighbors and Buddhist Lent; and (2) random donation for weddings, house-warming parties, funerals, etc.

5. Participation in networks promoting RBA: 9 out of 12 sampled farmers participated in networks promoting RBA with varying sizes and numbers. Movements of these networks had some useful impacts as follows: (1) expanding RBA learning process via fieldtrip, seminar, workshop, and so on; (2) knowledge and experience from the networks were available for developing RBA farm and community groups promoting RBA; (3) having more RBA friends and partners from different areas; (4) RBA different roles but supporting each other, for instance, the Green World Foundation presented an award to an outstanding person who conserved natural resources; and (5) in the future, we hope that these networks might have important roles in actively advocating a national policy on RBA promotion.

6. Joining community groups promoting RBA: Half of 12 sampled farmers joined their community groups promoting RBA set up with two reasons: (1) some community core groups were aware of various RBA benefits to their communities for the present and future generations; and (2) RBA promotion via some government agencies and state enterprises, for example, the Royal Forest Department and the Bank of Agriculture and Agricultural Cooperatives. Their activities resulted in developing RBA learning process, charity and harmony among group members, while expanding RBA areas in the community which would be good for the rehabilitation of economic, environmental and natural resources. However, there were some operational constraints for these groups such as a shortage of plant supplies and uneven financial supports from outside.

7. Productions of the associated crops for traditional activities: 4 out of 12 sampled farmers donated each of 4 kinds of the products for traditional activities in their communities. For



example, bamboo stems were donated to build flagpoles for a monk's boat at the annual Shuk-Pra tradition. Farmers used leaves of Ka Pho (*Licuala paludosa* Griff.) to wrap stick rice mixed with coconut milk, salt and sugar; and then steamed them as sweet for the festival of Tenth Lunar Month or known in Thai as Sat Duan Sip. A shoot of Coconut (*Cocos nucifera* Linn.) was one of the traditional components for a house-warming party and yellow palm leaves could be used for decorations in weddings, cremations, festivals, and so on.

B. Strengthening Rural Community

Additionally, the social security of the RBA farmers might help strengthen their rural communities in these following aspects: (1) self-esteem that derived from the achievement of the farmers' RBA practices as well as respect from individuals and related organizations. So, increase in the number of RBA farmers and their RBA success in their community will expand the self-esteem; (2) increase in quality of life via farmers' better health, food security and more knowledge caused by the RBA practices; (3) capacity building through many activities of the community groups and networks promoting RBA such as training course, fieldtrip, RBA knowledge exchange and so on; (4) harmony derived from the charity of many products from the associated crops and activities of the community groups and networks promoting RBA such as visiting farmers' RBA sites, RBA knowledge exchange, help each other among the members and networks and; (5) traditional descent via the productions of the associated crops for traditional activities in the community.

However, the level of the community strengthening through the social security of the RBA practices was up to at least these accelerators: (1) RBAS researches should learn the lessons of the best RBA practices of many rubber farmers, review the past RBA researches and develop new researches into the RBA research gap. Also, many of the lessons and researches will be inputs to develop the RBA planting handbooks for rubber farmers and public who are interested in RBA practices; (2) the office of rubber replanting aid fund (ORRAF) has permitted farmers to practice some RBA since 1992 and later the permit has more released since 2014 but it is still not popular because farmers lack the RBA knowledge and confidence. Therefore, the RBA promoting public policy in central and local level should include transferring RBA knowledge and confidence to the farmers and public. Certainly, one of the significant transfer measures is the RBA planting handbooks as mentioned above; (3) nowadays, the number of RBA farmers and RBA areas are limited. Scaling RBA farmers and areas needs some knowledge-based public policies and active measures to distribute the RBA knowledge and confidence among the farmers and public; and (4) At a family level, several kinds of associated crop in a rubber plot help increase a diverse food security and distribute a farm economic risk caused by price uncertainty. So, this diverse RBA pattern will be more useful if it can be scaled up into a community level.

Certainly, the RBAS researches can serve as a precedent for the RBA promoting public policy which is a precedent for the number increase of RBA farmers, RBA area expansion, and the diversity of RBA kinds in the rural communities.

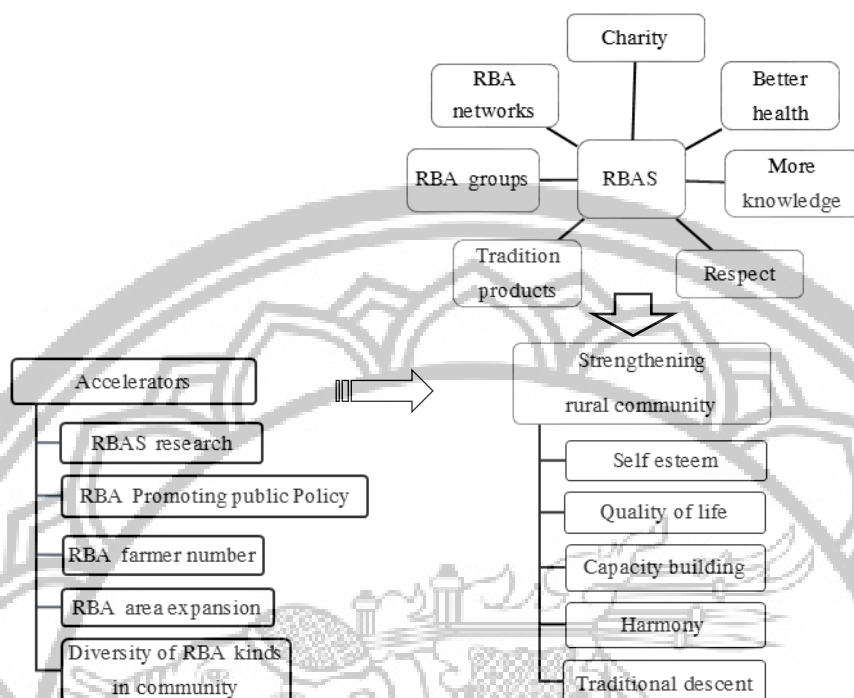


Figure1 RBAS Social Security towards Strengthening Rural Community and the accelerators

Discussion

This study aimed at examining social effects of RBAS adapted by farmers and linking it with strengthening the communities. It was different from other studies focusing mostly on economic and ecological affects such as the Resilience of Rubber-based Intercropping System in Southern Thailand (Jongrungrot, & Thungwa, 2014), the Diversification of Smallholding Rubber Agroforestry System (SRAS) in Thailand (Somboonsuke, Wetayaprasit, Kongmanee, Cherdchom, & Pacheerat, 2010). At the same time, the association of hevea with other tree crops could be more profitable than hevea monocrop during first 12 years (Snoeck, et al., 2013). Additionally, there were some restricts on this study, especially few available papers and documents about social aspects of RBAS. Also, this study was carried out in the context of Southern Thailand so that its adaptation would be more suitable

for the South than other regions with different contexts. However, amid the rubber price uncertainty and the current over-expansion of rubber plantation areas in many countries, the hidden value of social security of RBAS could be of great use to both domestic and international academic discussions as well as promotions of future sustainable agriculture and strength of rural community.

Conclusion

RBAS has socioeconomic and ecological benefits. This study showed many aspects of social security of RBAS. These might help strengthen rural communities, regarding self-esteem, quality of life, capacity building, harmony and traditional descent. But the levels of the community strength via RBAS depend on the accelerators. Also, in the future, RBAS can be one of the traditional measures to supplement all routine social welfare programs of



local and central governments in many rubber cropping-based communities.

However, there are some key drivers affected the overall social security in the communities. These are prioritized as follows: (1) central government as to a source of the largest budget and skill personnel (2) local government as regards the nearest development unit to the communities, its gradually increasing budget and improved personnel (3) traditional measures in the communities as to the measures being deteriorated by modernization and (4) RBAS as regards neo approach in the future that will help restore the traditional measures. Also, the promotion of the social security via RBAS needs some more researches, particularly the study of RBAS and social security in different area contexts, diversity of the best practices of farmers' RBAS, development of the RBA planting handbooks for rubber farmers and public.

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