

# Land-Use Change under the Management of the Agricultural Land Reform Office: A Case Study in Phuket

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## Abstract

*The aims of the research were to study how farmers use the land and become involved with agricultural land reform (ALR) in the Phuket province and to study guidelines for improving the regulations and management of ALRO4-01 land in the Phuket province. This research used qualitative methods, such as in-depth interviews with landowners involved in ALR, government officers of ALR in the Phuket province, and government officers of the agriculture department of the Phuket province. After collecting data in the first period, the researcher reported the information to an ALR expert. Determining the results involved the use of aerial photographs comparing land use between 2002 and 2007.*

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*An aerial photograph from 2002 shows a vacant area within the forest, as opposed to a 2007 photograph showing the vacant area covered by what almost look like rubber trees. The two patterns of the ALR area in the Phuket province were determined to be: 1) the areas designated for forestry preservation, for the community, and as an economic zone; and 2) the areas is not related to the economic zone. However, the areas of ALR that are far from the economic zone are nearly all vacant and feature a shrimp pond. Still, areas close to the economic zone include rented houses, restaurants, shops, rented rooms, and the Para rubber plantation. However, the survey found that the five land-use patterns were: 1) changed and no agricultural activity at the farm; 2) the owner rented out the area for a private tourism business; 3) a restaurant and shop located in the ALR area; 4) agricultural activity combined with a rented room or rented house in the area; and 5) the existence of agricultural activity on the farm. The five guidelines for land-use improvement in the ALR area in Phuket were: 1) Focus on the development and adjustment of farmer attitudes toward agricultural activity in the ALR area to improve the agriculture production system for high yield and high value; 2) improve the area to support eco-tourism activities; 3) farmers should manage the area, using some parts of the area for agriculture and others for supporting other businesses; 4) improve the Agriculture Land Reform Act, B.E. 2518 (ALRA 1975) to support the present situation because it presently does not consider the dynamic of socio-economics; and 5) if ALRA 1975 cannot be changed, make it illegal for the owner to use the Phayao model as a solution to the problem.*

**Keywords:** Agriculture, Land Reform, ALRO4-01, Land-Use Change, Phuket

## การเปลี่ยนแปลงการใช้ประโยชน์ที่ดินภายใต้ การจัดการของสำนักงานการปฏิรูปที่ดิน เพื่อเกษตรกรรม กรณีศึกษาจังหวัดภูเก็ต

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### บทคัดย่อ

วัตถุประสงค์การวิจัยเพื่อศึกษาเกษตรกรใช้ประโยชน์ที่ดินในเขต ส.ป.ก. จังหวัดภูเก็ตอย่างไร และศึกษาแนวทางในการปรับเปลี่ยนการใช้ประโยชน์ที่ดินทางการเกษตรในเขตพื้นที่ ส.ป.ก. จังหวัดภูเก็ต โดยเป็นการศึกษาเชิงคุณภาพ เก็บข้อมูลโดยการสัมภาษณ์เชิงลึกกับผู้ถือครองที่ดิน ส.ป.ก. เจ้าหน้าที่สำนักงาน ส.ป.ก. จังหวัดภูเก็ต และเจ้าหน้าที่ส่งเสริมการเกษตรจังหวัดภูเก็ต จากนั้นนำผลการศึกษาเบื้องต้นเสนอผู้เชี่ยวชาญเพื่อให้ข้อเสนอแนะ ผลการศึกษา พบว่า ข้อมูลจากภาพถ่ายทางอากาศเปรียบเทียบกันระหว่างปี พ.ศ. 2545 และ พ.ศ. 2550 โดยพบว่า ภาพถ่ายในปี พ.ศ. 2545 จะพบว่า มีพื้นที่โล่งรอบแนวป่าไม้ แต่ภาพถ่ายในปี พ.ศ. 2550 พื้นที่โล่งเหล่านั้นกลายเป็นป่า ซึ่งจากภาพถ่ายจะเห็นเป็นลักษณะสวนยางพาราเป็นส่วนใหญ่ ทั้งนี้รูปแบบการของที่ดิน ส.ป.ก. มี 2 รูปแบบหลัก คือ 1) รูปแบบที่มีพื้นที่ติดกับป่าสงวน เขตชุมชน และเขตเศรษฐกิจ และ 2) รูปแบบที่ไม่มีพื้นที่ติดการเขตเศรษฐกิจ โดยการศึกษาครั้งนี้ พบว่า พื้นที่ ส.ป.ก. ที่ไกลจากเขตเศรษฐกิจจะ

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เป็นบ่อกักและพื้นที่ว่างเปล่า ส่วนที่ติดกับพื้นที่เศรษฐกิจนั้น ก็จะมีการสร้างบ้านพัก ร้านอาหาร ร้านค้า ห้องพัก และสวนยางพารา ทั้งนี้จากการสำรวจพบการใช้ประโยชน์ที่ดิน จำนวน 5 รูปแบบหลัก คือ 1) มีการเปลี่ยนแปลงไปทั้งหมดไม่มีการทำการเกษตร 2) มีการปล่อยให้เช่าเพื่อทำธุรกิจประกอบการท่องเที่ยว 3) มีการสร้างร้านค้า ร้านอาหาร ในเขตพื้นที่ ส.ป.ก. ที่ตีนถือนีครอง 4) มีการทำการเกษตรประกอบกับการสร้างห้องเช่า หรือบ้านเช่า และ 5) มีการทำการเกษตรทั้งแปลง ทั้งนี้แนวทางในการปรับเปลี่ยนการใช้ประโยชน์ที่ดินทางการเกษตรในเขตพื้นที่ ส.ป.ก. ในเขตจังหวัดภูเก็ตพบว่า มีแนวทางในการปรับเปลี่ยนการใช้ที่ดินจังหวัด 5 แนวทาง คือ 1) การพัฒนาและปรับเปลี่ยนวิธีการเกษตรในที่ดิน ส.ป.ก. ซึ่งมุ่งไปสู่การปรับเปลี่ยนระบบการผลิตเพื่อให้ผลผลิตมีมูลค่าสูง 2) การปรับเปลี่ยนการใช้ประโยชน์ที่ดิน ส.ป.ก. เพื่อการท่องเที่ยวเชิงนิเวศ 3) การปรับเปลี่ยนพื้นที่ ส.ป.ก. บางส่วนเพื่อดำเนินธุรกิจ 4) การปรับปรุงพระราชบัญญัติการปฏิรูปที่ดินเพื่อเกษตรกรรมเนื่องจากสถานการณ์ปัจจุบันเปลี่ยนแปลงจากอดีตไปมาก พบ. บางมาตราไม่สอดคล้องกับสภาพความเป็นจริงในปัจจุบัน และ 5) กรณีที่ไม่มีการแก้ไขกฎระเบียบใด ๆ ของ ส.ป.ก. ในปัจจุบันและพบผู้กระทำผิดจากวัตถุประสงค์การครอบครองสิทธิจากที่ดิน ส.ป.ก. อาจนำไปเทียบเคียงกับสถานการณ์การจัดการปัญหาที่ดิน ส.ป.ก. ในจังหวัดพะเยาเป็นต้นแบบในการแก้ไขปัญหาดังกล่าว

**คำสำคัญ:** เกษตรกรรม การปฏิรูปที่ดิน ส.ป.ก. การเปลี่ยนแปลงการใช้ประโยชน์ที่ดิน ภูเก็ต

## Introduction

Most land reforms in developing countries in recent decades have followed a blueprint based on the *property rights theory*. This blueprint has been supported by Western government-backed development aid institutions and the World Bank and is intended to achieve the capitalization of property rights to land by formalization and individualization. Its supporters expect this to lead to higher efficiency in land markets and higher tenure security (Loehr, 2012). For instance, land reform has become a major component of agricultural policy in post-Soviet Moldova in terms of improved food security and higher family incomes in rural areas. However, the majority of rural Moldovans are very poor and are locked into subsistence production in the absence of other income-generating activities. Small-scale subsistence production is a symptom of poverty, not its cure. Thus, the challenges of agricultural land reform (ALR) in Moldova are not solely agricultural but also include the problems of former collectives in the non-agricultural sector (Gorton, 2001).

With regard to agriculture and land use in the United Kingdom (UK), Angus et al. (2009) suggested that the next 50 years of land use based on the UK's future policy direction will be mainly directed toward the non-market issues of natural resources, environmental protection, and the provision of environmental services. In addition, they suggested that policies will be directed primarily toward environmental impacts, including the need to meet demanding targets for improved water quality, atmospheric pollution containment, and biodiversity. The UK's land will be required to deliver an increasingly diverse range of private and public goods to meet growing human needs and aspirations. This will require a balance between policy-driven goals and market forces. It will also require a more improved understanding of the trade-offs among food production, environmental goals, and the institutional arrangements required to achieve a balance of economic, social, and environmental outcomes.

The rising economic concerns of agriculturists are one reason why agricultural land is being converted to business use. Skalos, Molnárová, and Kottová (2012) found that in Sweden, changes in arable-land use have mainly been driven by economic forces. In addition, Bradstock (2005), who studied changing livelihoods and land reform in the Northern Cape province of South Africa, found that agricultural land programs face

challenges where the land concerned is distant from an infrastructure that gives people access to new resources, thus resulting in high transportation costs. The study also showed that affluent White people are able to benefit more from ALR programs than poor Black people are for many reasons. For instance, Black people lack both the human capital they need and the support of government agencies. While one of the objectives of the land reform program is to reduce poverty, the study found that rich households were the main beneficiaries of the program.

In Thailand, the Agricultural Land Reform Office (ALRO) was established on 6 March, 1975, under the Agricultural Land Reform Act, B.E. 2518 (ALRA 1975). The ALRO was founded for similar reasons to those outlined above, with agriculturists in Thailand being faced with many obstacles, such as the loss of rights to agricultural land, and transformation from arable land to rental land for agricultural production, with the high cost of rental land leading to a decline in production and many disadvantages for agriculturists. Thus, the ALRO has sought to preserve land for agricultural production, encouraged land redistribution, supported agriculture, and provided funding for agricultural production (Agricultural Land Reform Office, 2005). In addition, the ALRO aims to decrease the gap in social status between the poorest members of society and the middle and upper classes and to extend support to marginal occupations in areas where the number of farmers has been decreasing (Agricultural Land Reform Office, 2013).

From information that the Agricultural Land Reform Office (2005) provided, ALR is divided into three stages: land allocation, development, and increased income. Firstly, under the type of land allocation, the ALRO manages the allocation of both public and private land to agriculturists under ALRA 1975. For public land, the ALRO carries out cadastral surveys, carries out land rights investigations and redistribution, and reduces and divides the quantity of land controlled by individuals (in cases where holdings exceed the limits in accordance with the act) so as to fairly allocate land to agriculturists, both for rent and for purchase. Agriculturists can obtain a land-acquisition document (ALRO 4-28) and a land-use certificate (ALRO4-01) from the ALRO as set out in ALRA 1975. With regard to private land, the ALRO administers land purchased or expropriated from landowners who do not utilize the land themselves, or own land in excess of their rights in accordance with the act. This land is then allocated to farmers who have no land or have only small areas of land that are insufficient for earning a living, on either a hire-purchase

or leasehold basis. In addition, under the category of development, the ALRO is responsible for ALR (also referred to as ALRO 4-01 land) and supports the development of infrastructure, such as the construction and maintenance of access roads and the development of water resources, with the goal of improving the quality of life of agriculturists and the capacity of water resources for consumption in agriculture. Finally, under the category of increased income, the ALRO carries out the improvements of agricultural-production structures, establishes agricultural-land-reform cooperatives, provides financial loans to agriculturists and production inputs, and develops and supports on-farm and off-farm occupations. In addition, the ALRO enables farmers to participate in natural-resource and environmental conservation in their communities.

For many decades, the use of land falling under the responsibility of the ALRO has been changing through the efforts of agriculturists. However, several problems are associated with ALR in Thailand, for instance, inequalities in the distribution of land rights, with most agriculturists not owning land for agriculture, and with landowners forming a minority belonging to the middle and high classes. Further there are limitations in the applicability of ALRA 1975 in that it does not contain an efficient mechanism for the redistribution of land to poor agriculturists. In addition, there has been a reduction in the amount of agricultural land available because of the development of infrastructure, and Thailand has tended to focus on industrialization, with government policy also supporting tourism (Srisawaluck, 2014). In addition, Apinyawatcharakul (2011) studied the legal consciousness of farmers who purchase and sell ALRO 4-01 land. The study revealed that knowledge of the provisions of ALRA 1975 neither influenced nor affected the behavior of the farmers involved in purchasing or selling land. Although they were aware of the existence of ALRA 1975, they paid more attention to other factors relating to the problems they were confronting, such as socio-cultural considerations and land value, than to the risk of being punished by law. In addition, the results of the study show that ALRA 1975 has failed to control the trading of land in the land reform zone. Another factor is the differing economic points of view of agriculturists and the government, and the experiences of farmers who do not believe that law enforcement is seriously affected by disobedience to ALRA 1975. The perceptions of agriculturists and their disobedience to the law have resulted in conflicts between legislation and the real current situation. The government should resolve this problem by rethinking and improving the economy,

updating relevant legislation, and increasing land-value awareness among farmers.

Land right is currently a major problem of ALRO 4-01 because several farmers who have received ALRO 4-01 land have tried to sell the land to other people illegally (ALRO 4-01 land cannot be sold to another person, and the land must be used for only agricultural reasons). Also, farmers do not understand ALRO's objective, and in some areas, they use land illegally, such as for the construction of a hotel and accommodations in a tourist area. In some areas, a hundred people are occupying the ALRO 4-01 land illegally. However, for many decades, the ALRO has tried to solve these problems and has been looking for good solutions for implementing its regulations as well as for enhancing the operation of ALRO 4-01 land. This study will serve as a guideline that will help the ALRO to improve its administration, regulation, and operation in the future. Thus, the research question in this study deals with how farmers use the land and become involved with ALR in the Phuket province, and what the guidelines are for improving the regulations and management of ALRO 4-01 land.

### Objectives

The aims of the research reported in this paper were:

- 1) To study how farmers use the land and become involved with ALR in the Phuket province.
- 2) To study guidelines for improving the regulations and management of ALRO 4-01 land.

### Literature Review

Land reform entails major changes in the ownership of land between landlords and small farmers. Warriner (1969) defined land reform as the redistribution of land and property rights to the poor. Peru implemented agrarian reforms in 1964 and 1969, a process that Lastarria-Cornhiel (1989) reported on. The program involved the management of land, with the government allocating dry-land areas of about 1,500 hectares of either empty or natural pastureland and 450 hectares of irrigated land as land for poor people. Kawagoe (1999) reported that ALR has expanded worldwide and noted that ALR began in Japan in 1946, motivated by the Japanese government's desire to find a solution to problems between farmers and landlords, with the main strategy being the distribution



of land to the rural population. In Pakistan, land reform has been taking place since 1959 as Memon (1993) reported, with 500 acres of irrigated land and 1,000 acres of dry land being allocated for the poor to use for agriculture. The aim was to increase the income of the people and thereby decrease poverty in Pakistan. In the Philippines, a report by the Philippine Department of Agrarian Reform (2013) noted that the origin of the land-owning class was colonialism, and as a result, prior to 1946, mostly landlords controlled the land, while most people did not use the land for agricultural production. However, between 1946 and 1948, the Philippine government carried out land reforms that distributed land to poor people. In the main objectives, government land-reform programs conducted between the 1940s and the 1960s were instituted as a solution to the problem of poverty, and these reforms were largely possible because at that time, world development was bringing about a transformation from the agricultural era to the industrial era.

### **The Concept of Agricultural Land Reform**

The aims of ALR are to reduce poverty and to decrease the economic gap between the upper and middle classes (renters and landlords) and the lower class (farmers and workers). Many national governments have used ALR as a tool for solving social and political problems. ALR programs, such as the redistribution of land to poor farmers, protect agricultural production and yield increases in income. Nanak (1980) defined ALR as a social welfare concept because it results in the more equitable sharing of resources among the people in a county. Ghatak and Roy (2007) described ALR in India, which has focused on increasing agricultural productivity and thus increasing farmers' incomes, thereby protecting their livelihoods. Land reform is therefore an economic tool for solving the problem of poverty. Similarly, Conning and Robinson (2001) viewed ALR as forming a part of the modern theory of agrarian organization, where the right to land is an economic solution to the problem of poor farmers. This concept is related to the political movement supporting ALR as a facet of agrarian organization whereby government organizations must either provide land for agricultural use or cause the redistribution of land rights from landowners to farmers, thus protecting agricultural production and empowering food producers, as a solution to poverty among farmers.

### Reform of Agricultural Land Tenure

Suthiwatananithi (2011) explained the report of Phongphaijit, which highlighted that in Thailand, 90% of the land is owned by about 10% of the people in the country, approximately 1.46 million people own land in Thailand, and more than 40% of farmers have tenure on fewer than 1.6 hectares of land. In addition, Suphathanawankun (2013) explained that 837 people in Thailand own 101,002.08 hectares of land, representing approximately 20% of the country's area, and of those 837 people, 2 people own a total of about 17,600 hectares. Additionally, 749,599 households (18.2%) own less than 6.4 hectares of land, and 402,145 households (9.88%) own more than 6.4 hectares. Based on these figures, more than 70% of the land in Thailand has no registered owner.

The reform of tenure in areas with agricultural land is important because it is closely related to the landowner's decision about the use of the land (Grover et al., 2006). A report by the Food and Agriculture Organization (2002) explains that land tenure is a significant social phenomenon and is related to the livelihoods of people. However, Rashid et al. (1986) in a study of land tenure in Illinois found that smaller farms are more efficient and that farmers who rented were more efficient than were those who did not rent or lease the land they farmed. Nevertheless, a report by the High Level Panel of Experts on Food Security and Nutrition (2011) reported a crisis in the issue of land tenure, with a growing trend throughout the world of landownership changing from farmers to new owners. For example, more than 80 million hectares of land in the world changed ownership in 2010, and it is possible that the land use has changed to non-agricultural activities.

### Agricultural Land Reform and Landownership in Thailand

ALRA 1975 formed part of the then-National Economic Plan of Thailand. At that time, the government of Thailand sought to greatly limit the private ownership of land and to give to the state the right to distribute and redistribute land. This act was notable in being the first legislation to succeed, at least partially, in the enforcement of these provisions (Suehiro, 1981). Despite this, however, a report by Reagan (1988) suggested that, of the people in Thailand, around 90% were poverty stricken and lived in rural areas. The report suggested that the solutions to this problem were: 1) the rural development of poor areas and 2) land reform, particularly ALR, since a large percentage of farmers

in Thailand still led very low-quality or even sub-standard lives.

Many reasons exist for this state of affairs, and landownership has been a major concern of the Thai government. The 1977–1978 holdings in land amounted to about 18,240,000 hectares: A total of 15,040,000 hectares, or 83%, were privately owned; 2,240,000 hectares, or 12%, were leasehold; and the remaining 960,000 hectares, or 5%, were worked on without any form of legal land tenure. While as much as 83% of the land is privately owned, in some areas, landownership is unequally distributed, as illustrated in Table 1. This problem is particularly significant in the central plain and also in some districts in the North.

**Table 1: Percentage of Farming Families Renting Land, 1977–1978. Table Summarizes United States Presidential Agricultural Mission to Thailand (1982)**

Region	Total Farming Families	Families Renting Land	Percentage
North	1,124,100	266,411	23.70
Northeast	1,725,558	116,726	6.76
Central*	875,449	323,947	37.00
South	588,184	72,306	12.29
<b>Total</b>	<b>4,313,291</b>	<b>779,390</b>	<b>18.07 (average)</b>

\* Including Eastern and Western Thailand

Without land of their own, farmers have little incentive to invest in land conservation, nor are they concerned about long-term soil fertility. Working on rented land, they are hesitant to improve somebody else's land and therefore produce below the potential of the land, resulting in low economic returns. In addition, farmers are sometimes treated unfairly by landowners who charge unfair rates for their land, and in addition to having low incomes, these farmers are often in debt to landowners and merchants. To solve this problem, the government instituted a land reform program, but this has met with little success. The program has several objectives. One is to organize a land-holding program to provide land for landless farmers to use, with housing available on that land, by making public land available. This may be land that the government has bought or reclaimed from owners who do not make use of their land or who own more than the amount stipulated by law. Such land is distributed to landless farmers or to those with very small plots of land, or it is used in other ways. The government

also offers help with the production of resources, production inputs, and marketing. The second objective is to provide a better distribution of income between urban and rural areas, thus narrowing the economic gap. The third objective is to promote growth and progress in rural areas, thereby enhancing the country's security.

### **The Implementation of Land Reform in Thailand**

The Thai Office of Land Reform under the Ministry of Agriculture and Cooperatives conducts the land-reform program. As was noted above, in 1977–1978, the Central Plain had the highest percentage of leased land, followed by the North. Therefore, the land-reform program, which began in 1975, focused on the Central Plain and the North until 1980. Since then, a gradual shift has taken place in the program's emphasis on the Northeast. In these areas, apart from major infrastructural needs, such as land-distribution routes, water supply, and irrigation systems, farmers need access to loans, and training in agricultural production methods and marketing has also been provided in some areas.

During the fifth five-year plan covering the period of 1982–1986, the government allocated 3,176.5 million Baht (in 1982, 20 Thai Baht were equivalent to approximately one U.S. dollar) for the land-reform program. Of this amount, 2,160.6 million Baht (68.02%) were allocated for buying land for redistribution. The remaining 1,015.9 million Baht (31.98%) were earmarked for production improvement in land-reform areas. However, Phongsapich (2011) noted that when the government implemented the ALR program, farmers who obtained rights to land could not pass on their rights to their children for continued agricultural purposes, and the land could not be sold. As a result, the title deeds to the land were unable to be used to obtain mortgages or as guarantees to borrow money from banks even though the management of the ALRO were apparently under the impression that the title deeds could be used in these ways.

### **Situation with Land Corruption in Thailand**

Corruption in Thailand is a part of the bureaucrat's culture (Warsta, 2004; Damronchai, 2013), and it is a big problem that is hard to solve. Reasons for the corruption in the government include: the low salaries of public servants, a lack of transparency in terms of governance, and heavy bureaucracy. In most situations, the corruption occurs

between capital and government officers on multiple levels, but this has an effect on grassroots workers and on the public as a whole (Thornton, 2000). In addition, Phongpaichit et al. (2000) survey “Corruption in the Public Sector in Thailand: Perceptions and Experience of Households” reported that the land office is the first organization to which most people go to report their experiences with corruption in Thailand; of the sample, about 7.2% (of a 6,048-size sample of the whole country) reported corrupt practices in the land office contracted for a service (6.1% of 7.2%). Unfortunately, it is very complicated to present evidence of corruption in terms of land use in Phuket province, and studies have focused on land use and on the perception of the ALRO.

## Methodology

This study used qualitative methodologies to study land use by owners of ALRO4-01 land in Phuket province. The data that the researcher obtained were presented to experts to gather their comments before performing analysis of the data.

### Study Site

ALR in Phuket province

### Sampling

- 1) 29 landowners with rights related to ALRO4-01 land in Phuket province
- 2) 7 local ALRO officers in Phuket province
- 3) 14 experts

### Data Collection

The data were collected in the following manner:

1. Secondary data, including aerial photographs, were collected from the local government as well as from the central government and the ALRO in Bangkok.
2. Primary data were collected from landowners with ALRO4-01 land rights in Phuket province, local ALRO officers in Phuket province, experts in the ALRO, and academics with relevant specialized knowledge.

### Stages of Data Collection

1. After studies of the secondary data were completed, surveys in the field were conducted through in-depth interviews relating to ALRO4-01 landownership in Phuket province, based on recommendations from local officers from the ALRO. The studies focused on: a) the current land-use situation, b) changes in land use, c) land-use trends, and d) illegal land use. The tool used semi-structure interviews (SSI) mainly to collected data.

2. Investigation of the trend of changes in agricultural land use in the ALRO area in Phuket was conducted using the Delphi technique; in the first stage, the information obtained was recorded in a report that was then submitted to experts along with a questionnaire containing open-ended questions for them to comment and make recommendations.

3. A survey on agricultural productivity in Phuket was conducted via interviews with agriculture officers in Phuket province to gather information about the value of the agricultural production and consumption of the population in Phuket province and to survey the market in the province. The tool used semi-structure interviews (SSI) mainly to collected data.

### Method of Analysis

The data were analyzed using content and descriptive analysis. For the presentation of the data using the Delphi technique, a preliminary report was prepared that included the information obtained relating to ALRO 4-01 land use. The report was to be presented to experts for their comments, recommendations, and agreement with the content before the results could be concluded.

## Results

### The Situation of Agricultural Land in Phuket

Phuket province has an area of 867 km<sup>2</sup>; the geography of the area is 70% uplands, of which the highest peak, “Maitouw-sip song” (top mountain), is 529 meters above sea level. About 30% is flatland in the center and in some eastern parts of the inland. The climate of Phuket is affected by two monsoons; the dry season (April–May) is relieved by the Northeast monsoon (June–October), and the rainy season (September–October) is

relieved by the Southwest monsoon (November–March). The areas affected by ALR in Phuket make up 239.353km<sup>2</sup> (27.61% of the area of Phuket); these areas consist of five types of land as shown in Table 2.

**Table 2: Type of Land for Agricultural Land Reform**

Type of Land for ALRO	Number of Square Kilometers (km <sup>2</sup> )
Area from forestry department following resolution of the cabinet	53.432 km <sup>2</sup>
Area given under royal decree	13.689 km <sup>2</sup>
Area survey from mapping	45.304 km <sup>2</sup>
Area screening (has document, forest, road, etc.)	21.216 km <sup>2</sup>
The ALRO area for ALRO organization management at present	24.088 km <sup>2</sup>
<b>Total</b>	<b>239.353 km<sup>2</sup></b>

The right to take possession of agricultural land under ALRA 1975 falls under two categories. The first is farmers, that is, people who are engaged in an activity related to agriculture in the area and have held it for one year; they must have the objective of conducting an ongoing agricultural activity. However, people who have not held land for one year can also receive land if they are poor, have education in agriculture, or have inherited agricultural land. The second category is agricultural institutions, such as farmers' co-operatives, farmers' groups, etc.

#### **Activities Conducted on Agricultural Land in Phuket**

Our survey of the area of ALR land in Phuket found the following activities taking place:

1) Villagers in agricultural areas still conduct agricultural activities, such as growing and tapping rubber, as well as growing vegetables or coconuts.

2) Agriculture is also conducted in semi-business areas, where businesses such as restaurants, mini-resorts, or guest houses are located but where there are also areas for agricultural activity.

3) Agriculture is conducted in residential areas as well. However, agricultural activity is confined to areas where the sizes of dwellings allow it since many residential areas consist of apartment buildings or big houses.

4) Business areas used for tourism are occupied by businesses such as hotels, shops, restaurants, or elephant camps, and no agricultural activities take place in these areas.

### **Types of Owners of Agricultural Reform Land in Phuket**

The study investigated the types of owners of agricultural-reform land in Phuket, and they were also classified according to how they obtained their rights to their land. Three types of owners were identified:

1) The owner occupied the land as a villager before the passage of ALRA 1975 by the parliament, but he/she had no title deed (In Thai: *Chanod-Tee Din*). He/she held documentation showing that he/she had paid the local land tax. When the government announced the right to register the land in his/her name, the individual followed the procedure outlined in the act and was able to obtain a title deed around the year 1993. This pattern of ownership was usually found among local people who had inherited their land rights from ancestors.

2) Possession from an unknown time: This describes a situation where at the time of the survey, a person had been in possession of an area of forestry or agricultural land for a period dating back to prior to the year 1992. People in this situation who could show that they had paid the local land tax were in the same situation as the owners set out in “1” above, that is, they could register their titles to the land and obtain title deeds.

3) Right by purchase relates to land belonging to a person from outside of the province who has bought the right to the land from a villager and holds the document of title issued pursuant to ALRA 1975, even though such sales are not legal. In this case, the land may still be registered in the name of the original landowner. A person holding a right to land through this mechanism is in this research study called the “hidden owner.” The hidden owner may be Thai or a foreigner and may be holding the land as an investment.



### Use of Land by Owners of Agricultural-Reform Land in Phuket

The uses to which agricultural-reform land in Phuket is currently being put were established by interviewing the owners of agricultural-reform land. It was found that owners usually want to conduct a range of activities on their land because at present, agriculture produces low profits and is hard work. This is in contrast to the general situation in Phuket, where many opportunities exist to make a good living outside of agriculture. However, during the interviews conducted—and in particular, in the section of the interview dealing with people's understanding of the rules of land held under ALRA 1975—it was established that most people understood the role of ALR and were well aware of its history because many of the owners had entered into contracts with the ALRO.

Two main factors affecting the owners' use of agriculture-reform land were:

#### 1) Geographical factors

Almost all areas of agricultural-reform land are in pleasant locations, such as near the forest or close to a beach or cliffs, so the land is suitable for uses associated with tourism. In many cases, the economic value of the site would render the land very valuable. Therefore, the landowners may have many ideas for activities for which the land could be used.

#### 2) Economic factors

i. The value of land in Phuket has increased because it has become a famous touristic site. However, the owners of agricultural-reform land cannot adapt the area to other activities unless those activities are associated with agriculture.

ii. Many of the agricultural-reform lands have only small areas. For instance, if the owner controls an area of less than 1 hectare, the area would not be large enough to allow the owner to increase his/her income through agriculture or similar activities.

iii. At present, many areas of agricultural-reform land have been adapted to multi-use areas for touristic activities, such as all-terrain vehicle (ATV) or quad-bike areas, which are popular with visitors. The aim of owners who have adapted their land in this way is to increase their incomes above that which could be earned solely from agriculture.

iv. The cost of living in Phuket is high because it is a tourism area.

Generally, therefore, owners in agricultural-reform land in Phuket feel that they need to conduct activities other than, or in addition to, agriculture on the land they occupy, as agricultural activities alone do not offer the same potential income as activities related to tourism in the region do.

### **Conditions Relating to the Use of Agricultural-Reform Land**

Landowners understand the conditions that apply to their holdings of agricultural-reform land—in particular, that they can conduct only agricultural activities or live on the land. Thus, the landowners are forced to depend on grants of agricultural-reform land as a means of earning income and thus decreasing their social disadvantage. The villagers in Phuket produce rubber, pineapples, and palm oil even though the Phuket area is not particularly suitable as an agricultural area, as almost the entire geographic region consists of hills and uplands, in contrast to the central provinces of Thailand, which are flat and suitable for agriculture. On the other hand, there has been a policy to develop Phuket as a year-round tourist area since at least 1967, and the effect of this development, which has been most pronounced since 1987, has been to change the use to which landowners put their land to follow that policy. However, the conditions relating to land granted to owners under ALRA 1975 still restrict the use to which the owner of land can put such land.

Although occupiers of land in Phuket (Type 1 long-term occupiers of land as defined above in Section 5.1.2) clearly understand the local situation and are aware of the range of activities possible in the area, they must take into account that to obtain the right to own their land, they must comply with the ALRO regulations. Further, this study found that there were commonly two different perceptions of what owners' rights with respect to the use of agricultural-reform land should be: 1) The owner should be able to do multiple activities in the area because he/she knows the potential for the area to be developed for touristic activities, such as sightseeing, restaurants, and homestays, etc., while the main use of the land continues to be for activities based on agriculture, and 2) the owner wants the right to develop the land as he/she sees fit in the same way he/she would with a traditional title deed. This latter perception is extremely idealistic.

### Changes in the Use of Agricultural-Reform Land in Phuket

For the purposes of this study, the researchers divided the use of agricultural-reform land (ALRO4-01 land) in Phuket into four zones (shown in Figure 1):

Zone A: The Talang district, where not many changes have taken place in land use. Agriculturists still work on their farms conducting activities such as shrimp farming in ponds and harvesting rubber, as this area is distant from areas of high economic value, such as tourist areas, beaches, and the harbor.

Zone B: Part of the Kratu district, which is close to the beach and also to the uplands. Land use in this area has seen changes from agriculture to business, as most of the ALRO4-01 land is on the uplands, which have sea views. Thus, most agriculturists there use some part of their ALRO4-01 land to build houses and rooms for rent, convenience stores, and supermarkets. However, more than 50% of the ALRO land is still used for agriculture, for instance, for rubber trees and fruits farms.

Zone C: Part of the Kratu and Muang Phuket districts. In this area are two types of land. The first is the uplands with a sea view. In these areas, most of the land has been converted into business use, such as for resorts, spas, houses, and rooms for rent. The second type of land is the uplands without a sea view. In this area are a lot of rooms and houses for rent, although most of the rooms and houses are rented by workers, so the rents are quite low. In addition, more than 50% of the ALRO4-01 land in this area is still forest or rubber trees.

Zone D: The remainder of the Muang Phuket district. In this area, the land use has changed as in zones B and C. As noted earlier, all use of ALRO4-01 land for business, such as for houses and rooms for rent, convenience stores, spas, and massage parlors, is illegal because grants of land under ALRO4-01 land are solely for agricultural use and activities.

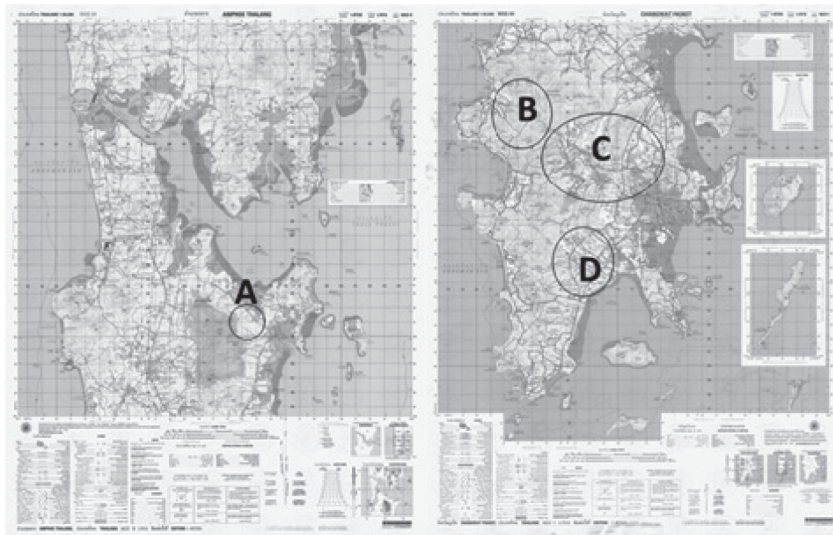


Figure 1: Zones of Agricultural Land Reform (ALRO4-01), Apply from Royal Thai Survey Department (Intro Data in 2014)

### The Problems Arising from the Illegal Use of ALRO4-01 Land in Phuket

In this study, the researchers discovered many problems associated with the illegal use of ALRO4-01 land in Phuket. For instance, some agriculturists have sold ALRO4-01 land to businessmen even though it is not legally possible for ALRO4-01 land to be sold, and the land has been transformed from agricultural use to business use, as shown in Table 3.

**Table 3: The Most Important Issues Arising from Illegal Changes in the Use of ALRO4-01 Land**

Issue	Remarks
Agriculturists who have land rights under ALRO4-01 sell land to other people.	ALRO 4-01 land cannot be sold, and it can only be transferred to an heir, such as a son or daughter. However, because the sale price is very high in areas such as on the coast, where the price per acre is around 40 million Baht (approximately 1.3 million U.S. dollars per acre), a strong motivation exists to sell such land.
Agriculturists conducting business other than agriculture on ALRO4-01 land.	Grants of land rights under ALRO4-01 are made on the condition that the land is to be used only for agriculture and that the only building allowed on it is a house that the owner occupies. However, more than 50% of the agriculturists who have received land rights under ALRO4-01 in tourist areas are conducting business, such as rooms and houses for rent, grocery or convenience stores, ATV or quad-bike rentals for driving into the forest area or elephant camps for jungle tours, etc.
Influential people are involved in the illegal use of ALRO4-01 land.	Influential people, mostly in the elite class, are involved in the illegal use of ALRO4-01 land. For example, they buy ALRO4-01 land from agriculturists, and then, through corruption involving government officers, they obtain title deeds for the land and thus become the owners. After that, they can do whatever they want on the land.
Foreign investors have made large capital investments.	Because of the high rate of growth of tourism on Phuket Island, investors from the Middle East, Russia, and Western countries have invested large sums of money in Phuket and have been allowed to buy land at high prices. ALRO4-01 land has been targeted because much of it is in excellent areas with sea views. Thus, some agriculturists have sold their ALRO4-01 land, as they can become very rich by doing so.
It takes a long time for the state to reclaim land.	When officers of the ALRO have discovered that agriculturists have used ALRO4-01 land illegally, it takes a long time for the state to reclaim land because it takes a long time for the high court to reach a final judgment (approximately 10–20 years). This makes it worthwhile for agriculturalists and influential people to misuse the land because they can obtain high returns during the long period it takes for the state to reclaim the land.

## Suggested Guidelines for the Development of ALRO4-01 Land

### 1) *The development of ALRO4-01 land without changes in the law*

#### 1.1) Adapting and Developing Agricultural Systems in ALRO4-01 areas

Land-use data for agriculture in Phuket province reveal that the most important agricultural use of land is for rubber, which occupies 4,664 hectares. Therefore, most of the agricultural land is not used for the production of food. However, there are also some areas where farmers use agricultural land for producing food, such as vegetables, as shown in Table 4. Additionally, the number of animals raised in Phuket province is shown in Table 6, and the price of their meat based on different systems of husbandry is shown in Table 7.

**Table 4: Land area by Crop in Phuket Province**

Type of Crop	Area (Rai*)			Total
	Muang District	Kratu District	Talang District	
Flowers and Trees	5	30	165	200
Vegetables	729	1,325	1,855	3,909
Rubber	15,672	10,104	75,388	101,164
Fruit (Orchards)	7,127	4,065	14,052	25,244
<b>Total</b>	<b>23,533</b>	<b>15,524</b>	<b>91,460</b>	<b>130,517</b>

\* Remark: 1 Rai = 0.16 hectare

Generally, agricultural food production in Phuket is insufficient for supporting the population of Phuket Island, so there is an opportunity to increase food production to support the nutrition of the people in the province. Farmers must decide whether to increase or decrease food production and also what systems to adopt to grow crops or raise animals. These are, however, difficult decisions for farmers to make. For instance, some farmers have adopted organic-agricultural-food production systems since they yield higher profits compared with traditional production methods, as shown in Table 5.

Table 5: Example Prices of Food Produced in Phuket Province

Type of plant	Traditional methods (Baht*/Kilograms)	Organic Produce (Baht*/Kilograms)
Chinese Kale	8–40	30–120
Lettuce	45–90	60–150
Chinese Water Convolvulus	8–40	14–60
Chinese Mustard Green	6–30	15–60

The price varies from season to season

\* Remark: Current rate of exchange is approximately 33 Baht = 1 US\$

Table 6: Number of Animals in Phuket Province in 2011

Animal	Muang District (No.)	Kratu District (No.)	Talang District (No.)	Total
Cow	221	13	569	803
Buffalo	73	50	888	1,011
Goat	13	128	1,064	1,205
Swine	1,525	53	2,951	4,529
Native Chicken	81,934	1,180	251,728	334,842
Duck	1,065	68	3,351	4,484

Table 7: Average Price Obtained for Animals Raised on ALRO4-01 Land in Phuket

Animal	System of Raising	Price (Baht/Kilogram)
Native chicken	Raised in orchards or on rubber plantations	115
Duck	Raised in orchards or on rubber plantations	120
Fish and other aquatic animals	Raised in natural or concrete ponds on farms	40–60
Cow	Raised in orchards or on rubber plantations	350
Buffalo	Raising in orchards or on rubber plantations	<i>No data</i>
Goat	Raising in orchards or on rubber plantations	180

It is very important to consider whether agriculture is capable of supporting the livelihood of the farmer by producing a sufficient income in a way that does not conflict with the ALRO4-01 regulations. Figure 2 illustrates the development of a model of integrated farming, which not only adds value to the production process but also responds to market needs.

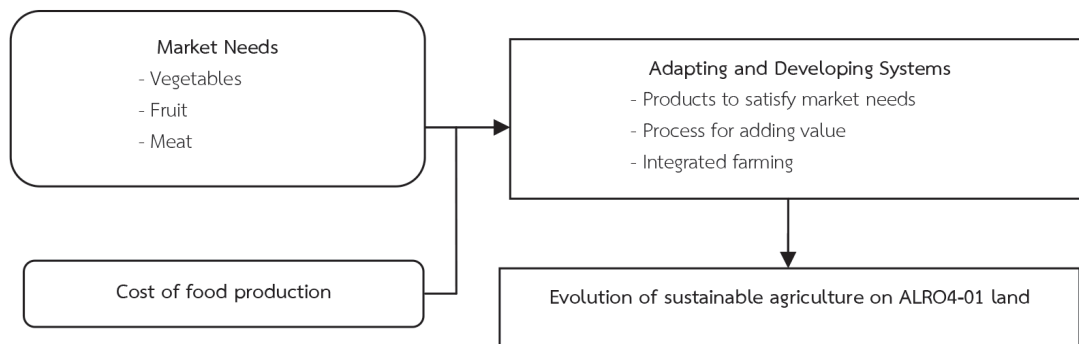


Figure 2: Adapting and Developing Agricultural Systems in ALRO4-01 Areas

The key to adapting and developing ALRO4-01 land for food production is the employment of efficient methods, which are in accordance with the ALRO aims. However, whether this is possible depends on factors such as the physical area of the province and the practices that farmers adopt. These are presented in a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) in Table 8.



**Table 8: SWOT Analysis for Adapting and Developing Agricultural Systems in ALRO4-01 Areas**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- Multiple options for farmers' agricultural production.</li> <li>- Farmers have land for production.</li> <li>- Land use follows the purposes of ALRO4-01.</li> <li>- Farmers can decrease the cost of food production because they can use the produce to support their family members living on their farms.</li> <li>- The household always has enough food to eat.</li> <li>- Farmers can protect the forest zone because agricultural activity is related to environmental conservation.</li> </ul>	<ul style="list-style-type: none"> <li>- High costs in early stages.</li> <li>- Crop production takes around 60–90 days.</li> <li>- Farming is labor intensive and requires expertise.</li> <li>- Farmers must concentrate on farming.</li> <li>- The physical area of Phuket province consists mostly of uplands.</li> <li>- Problems with water resources.</li> <li>- Agricultural use generates a lower income compared to other activities, such as having houses for rent or restaurants.</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>- There is a market to support.</li> <li>- Easy transportation and distribution of produce.</li> <li>- The province has rainfall year round.</li> </ul>	<ul style="list-style-type: none"> <li>- The cost of employing people in the province changes in response to the economy, so occupations in the service sector can pay higher wages than agricultural employment.</li> <li>- High cost of living in Phuket.</li> <li>- The perception of landowners in ALRO 4-01 areas that non-agricultural uses of their land are more profitable than agricultural uses.</li> </ul>

### *2) Adapting the use of ALRO 4-01 land for eco-tourism*

Currently, about 10 million tourists or visitors come to Phuket province every year. The area of the province devoted to residential use continues to increase along with that devoted to businesses, such as hotels, guesthouses, rooms for rent, and homestays. Many farmers misunderstand the meaning of the term “homestay” because they have the concept of a homestay as being a small house or room for a visitor to rent and stay in. In fact, the real meaning of homestay is an arrangement where a person visiting for

a short time stays in the same house as that in which the farmer and his family live, with the intention of the visitor being able to experience and understand the way of life of the owner of the house.

However, the ALRO in Phuket province accepts tacitly many of the changes of the use of ALRO4-01 land use, such as the use of buildings as homestays, provided that the number of rooms does not exceed 10, that the rooms are part of the owners' homes on the land, and that the farmers who conduct such homestay businesses are also engaged in agricultural activities. However, many of the farmers who operate homestays develop other activities on the land, such as elephant parks or orchard gardens, as shown in the model presented in Figure 3.

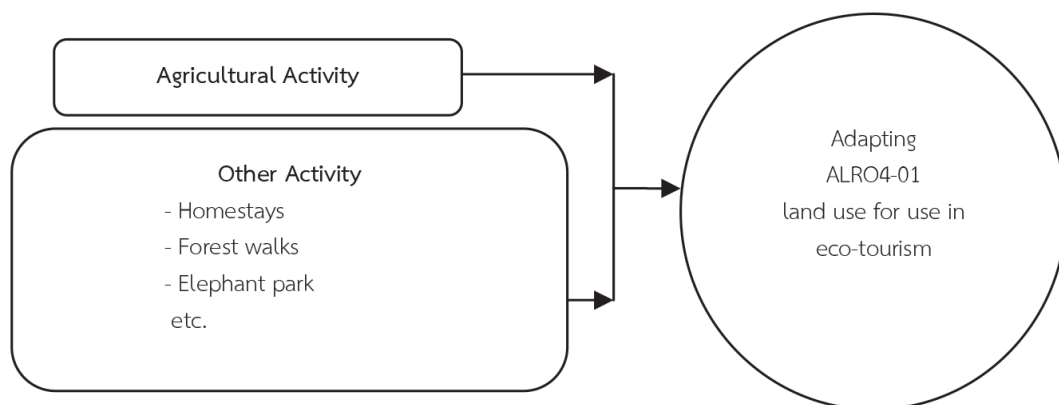


Figure 3: Adapting ALRO4-01 Land Use for Use in Eco-tourism

However, the use of ALRO4-01 land for eco-tourism has advantages and disadvantages, as presented in the SWOT analysis in Table 9.

**Table 9: SWOT Analysis of Adapting ALRO4-01 Land for Use in Eco-tourism**

Strengths	Weakness
<ul style="list-style-type: none"> <li>- Income from rooms for rent.</li> <li>- Value added to land use.</li> <li>- The farmer's home forms the capital base on which the business is founded.</li> <li>- The homestay activity does not prevent the landowner from living on his/her farm.</li> <li>- The use of the land for eco-tourism helps to conserve natural resources.</li> </ul>	<ul style="list-style-type: none"> <li>- Eco-tourism is a specific type of tourism and is quite limited in its appeal.</li> <li>- The landowner must possess managerial skill.</li> <li>- The landowner may misunderstand the homestay concept.</li> <li>- Homestays are viable only in certain areas.</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>- There are a lot of tourists in Phuket province.</li> <li>- Many different kinds of tourists visit Phuket province.</li> <li>- Phuket province has many resources for supporting eco-tourism.</li> <li>- Since many farmers are engaged in this type of activity, monitoring illegal adaptations of ALRO4-01 land is feasible.</li> </ul>	<ul style="list-style-type: none"> <li>- People in Phuket province are not generally service minded.</li> <li>- The government does not have adequate regulations for controlling tourism.</li> </ul>

### ***3) Possible solutions to the problem of land use; cases of illegal use of ALRO 4-01 land***

As of 3 November 2014, the following lawsuits were based on the misuse of ALRO 4-01 land:

- 1) Seventeen landowners have had civil cases brought against them:
  - 1.1. The Supreme Court of Thailand ruled finally in 11 cases:
    - In five cases, legal judgment was obtained and possession ended.
    - In six cases, legal judgment was obtained.
  - 1.2. Three cases are in the process in the supreme court.
  - 1.3. Two cases are in process in the Phuket Provincial Court.
  - 1.4. The ALRO tribunal has one application for an injunction awaiting judgment.

- 2) Administrative procedure tribunal (complaints) = 55 cases:
  - 2.1. The higher administrative tribunal has issued an injunction in 18 cases.
  - 2.2. Six cases are in the process with the higher administrative tribunal.
  - 2.3. Thirty-one cases are in the initial stages of the administrative tribunal process.
- 3) Fifteen criminal cases:
  - 3.1. Eight cases finalized (the Phuket Provincial Court issued a final judgment).
  - 3.2. One case is in the process with the Phuket Provincial Court.
  - 3.3. One case is in the process with the public prosecutor's office.
  - 3.4. Four cases are in the process of official inquiry.
  - 3.5. One case is in the process with the Office of the National Anti-Corruption Commission.

That is a total of 87 cases that have been brought by plaintiffs or litigants, including the ALRO, as shown in Table 10.

**Table 10: Percentage of Suits Relating to ALRO 4-01 in Phuket Province.**

Plaintiff	Number of Cases	Percentage
ALRO	27	31.0
Private individuals	56	64.4
Public prosecutor's office	4	4.6
<b>Total</b>	<b>87</b>	<b>100</b>

The 87 cases all relate to the proven or alleged misuse of land under ALRO4-01, most of which have been established by reference to aerial photographs. However, based on the opinion of the ALRO officers in Phuket province, the percentage of farmers misusing ALRO4-01 land in Phuket province is shown in Table 11.

**Table 11: Opinion of ALRO Officers in Phuket province about Illegal Land Use**

Area (District)	% of Illegal Land Use (In the opinion of ALRO officers in Phuket province)	Illegal Land Use (Compared with district)
Muang	20–50%	50%
Kratu	20–50%	50%
Talang	0	0

If a landowner is found to be using land illegally and not in accordance with the objectives of the ALRO, they may use the Phayao model to solve the problem. The Phayao model has four stages:

1) The ALRO sues the holder of rights in the ALRO4-01 land to withdraw the rights to the land from the holder; then, a new process is started.

2) After the rights are withdrawn, the ALRO committee sets new guidelines for the use of the ALRO4-01 land by the former holder.

3) An agreement is made between the ALRO and the former holder of the land, so the occupation of the land will not change, but the holder will become a lessee.

4) In the agreement, the landowner will rent a business from the ALRO, and the ALRO must be paid accordingly.

However, such cases must be carefully considered and must take into account the local context. In Phayao province, the business context was education, but in Phuket province, it is tourism, so a difference exists between the effect of such agreements in Phayao province and in Phuket province. There has been considerable discussion about the form of a model that is suitable in Phuket province. The form of the Phayao model applicable in Phuket province is shown in Figure 4.

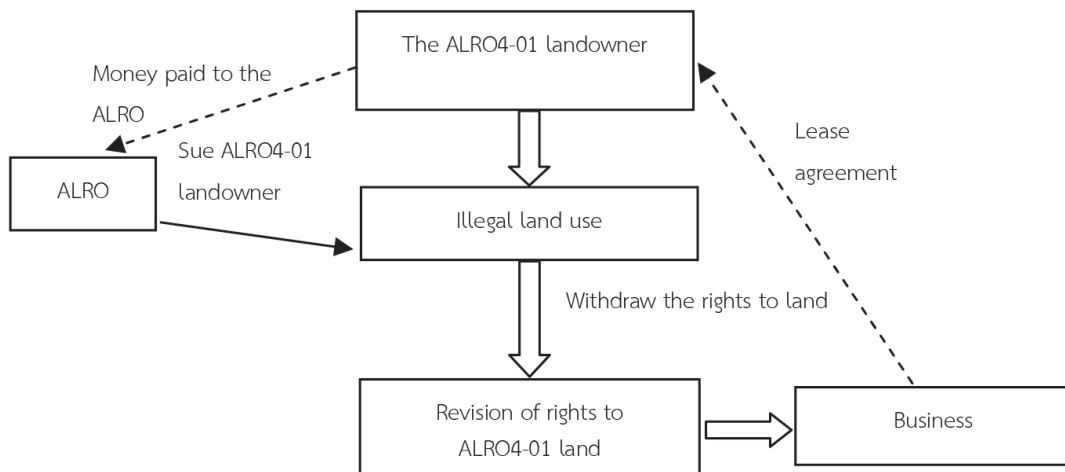


Figure 4: Solving the Problem of Illegal Land Use Based on the Phayao Model

The Phayao model has both advantages and disadvantages. A SWOT analysis is presented in Table 12.

**Table 12: SWOT Analysis of Solving the Problem of Illegal Use of ALRO4-01 Land in Phuket, Using the Phayao Model**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- A sensible management solution to the problem.</li> <li>- The landholder will have a higher income compared to using the land for agricultural activities.</li> <li>- The ALRO will also derive an increased income.</li> </ul>	<ul style="list-style-type: none"> <li>- The owner is landless when the agreement ends.</li> <li>- The owner has to pay a lot of money to the ALRO.</li> <li>- The owner may misunderstand the homestay concept.</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>- There is a lot of tourism in Phuket province with opportunities for increasing employment.</li> <li>- Many holders of ALRO4-01 land in Phuket province are using their land illegally.</li> </ul>	<ul style="list-style-type: none"> <li>- The status of the occupier of the land changes from that of owner to that of lessee.</li> <li>- The business context in Phayao province and Phuket province are different.</li> </ul>

#### ***4) Suggestions for the development of ALRO4-01 land based on changing some sections of the ALRO land-use regulations***

1) The ALRO regulations should be changed to allow some business use of the land.

Table 13 shows the GPP data for Phuket with income from farming representing only a small part of the province's income. There is a trend for the population of Phuket to increase as the number of tourists increases. After 1991, the number of tourists in Phuket at any time has been greater than the number of local people. At present, the population density in Phuket is 118.75 people per hectare, with about 35% of the city's population engaged in employment, as shown in Table 14.

**Table 13: GPP of Phuket Province**

	2009	2010	(%)
Farm-based production (Million baht)	4,813	5,374	+ 10.44
Non-farm production (Million baht)	65,383	73,590	+ 11.15
Total province production (Million baht)	70,196	78,964	+ 11.10
Production value per head (baht)	236,461	262,529	+ 9.93
Population (1,000)	297	301	+ 1.33

Source: Office of the National Economic and Social Development Board, Cited in Summary Report 2012

**Table 14: Rate of Population Increase in Phuket Province**

Year	Population	Households	T&V	Ave. T&V	L (%)	P L	Total	Den.
1981	136,286	21,333	0	NA	NA	NA	136,286.0	1.34
1986	150,295	30,009	0	NA	10	15,030	165,324.5	1.62
1991	174,744	48,396	2,356,653	196,387.8	15	26,212	397,343.4	3.90
1996	0	0	4,548,040	379,003.3	20	NA	379,003.3	3.72
2001	262,300	94,863	7,446,519	620,543.3	25	65,575	948,418.3	9.31
2006	300,737	136,445	8,816,636	734,719.7	30	90,221	1,125,677.8	11.06
2011	353,847	188,994	18,358,287	1,529,857.3	35	123,846	2,007,550.7	19.72

T&V = Tourists and visitors

Ave. T&V = average number of Tourists and visitors (average people per month)

L = Percentage of people working (%) prediction based on a rate of increase of 1% per year.

P L = Number of people working,

Den. = population density (people/Rai\*\*) \*\* 1 Rai is equal to 0.16 hectare.

The study found that there was illegal land use in breach of the ALRO regulations in the Pratong, Kratu, and Karon districts with many owners operating apartments for rent, resorts, guesthouses, elephant parks, restaurants, etc. However, most of these activities responded to the economic needs of the area and increased the value of land.

The study also found that:

1. Where ALRO 4-01 land was used for apartments, guest houses, etc., the landowner moved to live elsewhere because the original house was let.

2. Tourists can book hotel rooms using the Internet and there are 1,389 hotels in Phuket (information from <http://www.booking.com/>); almost all tourists who come to Phuket stay in a hotel. Tourists do not generally stay in rooms for rent as they stay only for a short time, so tourists do not pose a problem and do not have a direct impact on ALRO4-01 land. However, the increasing rate of tourism has an indirect impact, because business groups will try to buy ALRO4-01 land to build hotels.

3. Labor in Phuket has a high value and the volume of rooms needed for workers on the basis of the predicted number of workers has been estimated to be 41,282 rooms. At present, there are about 3,500 rooms available for workers in Phuket, which are therefore insufficient. This situation may cause owners of ALRO4-01 land, to build rooms for rent on their land, an activity that breaches the ALRO4-01 land use regulations.

Based on the data determined in this study and taking into consideration the land needed for economically viable use for farming, it is suggested that the land use regulations should be adjusted to be more appropriate for the local conditions, as shown in Table 15.

**Table 15: Suggestions for Changes in the ALRO4-01 Land Use Regulations to Accommodate Business Use.**

Area (Rai)	% of Activity	Type of Activity
≥ 1	25%	Housing
	25%	Agricultural use
	50%	Business use
2-5	Not over 1 Rai	Business use
	Not over 0.5 Rai	Housing and homestay
	Remainder	Agricultural use
6-15	Not over 2 Rai	House plus shop, restaurant, etc. (depending on the location)
	about 1-4 Rai	Agricultural activities to support tourism, such as flower gardens, orchards, etc.
	Remainder	20% forest and 80% agricultural use



**Table 15: Suggestions for Changes in the ALRO-4-01 Land Use Regulations to Accommodate Business Use (continued)**

Area (Rai)	% of Activity	Type of Activity
20–30	Not over 2 Rai	House plus shop, restaurant, etc.
	Not over 1 Rai	Pond (depending on the location)
	Not over 5 Rai	Agricultural activity to support tourism
	Remainder	30% forest and 70% agricultural use
31–50	Not over 2 Rai	House plus shop, restaurant, etc. (depending on the location)
	Not over 1 Rai	Pond (depending on the location)
	Not over 5 Rai	Agricultural activity to support tourism
	Remainder	40% forest and 60% agricultural use

However, these guidelines should operate based on the condition that when the landowners derive increased revenue from the land they are required to pay a levy to the ALRO as compensation to other farmers who have lost the opportunity to have access to agricultural land, since there is a waiting list for the allocation of land. This levy could be used to finance the purchase of land for allocation to poor farmers.

In conclusion, the findings of this study suggest that modifications are needed in the regulations governing the use of land allocated by the ALRO to allow activities other than agriculture to be carried out in order to solve the current problem of the misuse of land allocated under ALRA 1975.

### **5) Suggestions for improving ALRA 1975**

Based on the findings of this study the changes outlined in Table 16 are suggested to improve the operation of ALRA 1975.

Table 16: Suggestions for Improving ALRA 1975

Section	Suggestions
Section 25	This section should be changed to give first priority to the landless in the allocation of land based on the data relevant to the year 2010, which showed that more than 300,000 people in Phuket province did not own land.
An addition	The ALRO can lease out land at affordable prices in order to grow grain.
Section 4 “Farmer” [2] [2] means that agriculture is the main occupation of a person, and may include poor agricultural graduates; the child of a farmer; and those who do not own agricultural land and wish to pursue a career in agriculture; under the terms and conditions set forth in the ordinance.	This definition of a farmer creates a problem for those holding ALRO4-01 land in Phuket and the right to hold land rights may need to be separated from the definition of the holder as a farmer. If the allocation of land is restricted to poor farmers who wish to pursue a career in agriculture this overlooks the fact that in Phuket more than 70% of the farmers who hold ALRO 4-01 land are not poor and that more than 60% conduct agriculture purely to protect their right to the land.

Table 16: Suggestions for Improving ALRA 1975 (continued)

Section	Suggestions
<p>Section 39</p> <p>In order to acquire the right to inherit land granted under ALRO4-01 the legatees must be farmers whose main occupations are agriculture and who are not already in possession of land sufficient to support their lives. Legatees must be in order of priority:</p> <ol style="list-style-type: none"> <li>1. The owner's spouse</li> <li>2. The owner's child (not by adoption)</li> <li>3. The owner's parents</li> <li>4. The owner's brother or sister (full blood relative or sharing the same father or mother)</li> <li>5. The owner's grandchild or the child of a brother or sister (one-quarter related)</li> </ol> <p>N.B. The person claiming a right to hold land must establish his/her entitlement.</p>	<p>Right can be acquired by one child, or not more than two children, or land may be inherited collectively by a family.</p>
<p>Section 30</p> <p>The owner's rights to ALRO4-01 land will be lost in case:</p> <ol style="list-style-type: none"> <li>1. The owner dies or gives up his/her rights, without rightful heirs under the terms of ALRA 1975.</li> <li>2. The owner transfers the land under a rental or hire-purchase agreement, or any form of agreement under which the owner receives compensation from other people for the use of the ALRO4-01 land.</li> <li>3. Disqualification based on a judgment of the ALRO4-01 tribunal.</li> <li>4. Failure to attend a hearing of the ALR tribunal to discuss land use.</li> </ol>	<p>This section may cause problems relating to the right to pass on land by inheritance for farmers with a small area of land. Further, the process under the Phayao model involves the ALRO retrieving the land in order to start a new process under which there is an agreement between the ALRO and the former landowner, who will change his status from that of owner to lessee, with the landowner renting a business from the ALRO.</p>

Table 16: Suggestions for Improving ALRA1975 (continued)

Section	Suggestions
Article 26 on the rights of holding land.	Since there are limitations on the use of ALRO4-01 land, there may be a problem after the original owner dies if his/her heir uses the land for activities other than agricultural use.
Article 30, paragraph 5 This section states that the use of the land must be related to or support agricultural activities.	There is no clear definition of the words “activities related to” or “support activities” The guidelines may need to be expanded to encompass a wider use of ALRO4-01 land holdings than the present “business related to or supporting...” which would be wider than purely agriculture, such as “...related activities or to support strategic provincial or local interests.” This extension would encompass a wider use of land than the original framework envisaged, but would support the wider services provided in the community.

However, these suggestions for dealing with the illegal use of land in the ALRO areas of Phuket under the ALRA 1975 have advantages and disadvantages, which are presented in a SWOT analysis in Table 17.

**Table 17: SWOT Analysis of Suggested Improvements of ALRA 1975**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>- Wider use of land than solely agriculture.</li> <li>- Adds value to the ALRO land.</li> <li>- Land holders have the opportunity to use the land to its full potential.</li> <li>- Increased economic value.</li> <li>- The existing ALRO regulations can be updated to fit the current conditions.</li> </ul>	<ul style="list-style-type: none"> <li>- Control of land use is difficult.</li> <li>- A possibility of delays.</li> <li>- Monitoring would be more difficult.</li> <li>- The time taken to amend the act.</li> <li>- The process may be complex and cumbersome.</li> <li>- While the ALRO has full authority to make decisions about land use, it is possible to use that authority to prevent invasive use of forest areas so that the ALRO serves as a guarantor of the conservation of natural forest areas.</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>- Increased development of land use.</li> <li>- Economic growth.</li> <li>- Current forms of land use that are illegal under the current regime can be brought within the ALRO regulations.</li> </ul>	<ul style="list-style-type: none"> <li>- A mismatch between community and individual interests.</li> <li>- There is insufficient data available for the decision-making process to control the scope and coverage of land use.</li> <li>- The modification of rules and regulations involves the areas of authority of several ministries.</li> </ul>

Historically, there is a pattern of socio-economic use of the land administered by the ALRO in Phuket province. Experts point out that agricultural land reform was not promoted specifically with Phuket province in mind, where the land use situation is a result of the dynamic socio-economic and cultural changes to the livelihood of ALRO4-01 landowners. However, further changes must balance the needs of local culture, natural resources, the environment, and socio-economic affairs. Of the experts consulted in this study, 8 out of 14 (57%) suggested that if the policies relating to the use of ALRO land are to be changed, the major considerations are:

1) The use of the land administered by the ALRO has an impact on the pulmonary health of people in Phuket province and the area should therefore have a lot of forests

to produce pure air to support the health of people in the province.

2) The ALRO land is in an area that can help to alleviate the problem of poverty, so the ALRO must fulfill its mission to provide opportunities to those living in poverty. Therefore, if ALRO4-01 landowners can earn more money through business ventures, those owners should contribute money to the ALRO, perhaps through taxes, to support the purchase of more land for distribution to poor farmers.

3) To support land conservation, landowners should protect their land by using soil supplements and not create pollution in the area.

4) The ALRO area should build food processing factories in the province that are supplied by landowners, which would increase demand for agricultural products and would also support people in the province.

## Discussion

In this section, the conclusions drawn from this research in relation to the issue of land use and the needs of ALRO4-01 landowners are presented, and suggestions for changing the land use regulations applying to land under the management of the ALR Office are made.

### The Changing Socio-economic Situation in Phuket Province

According to the history of Phuket described by Sakunbunphanit (2011), Phuket was not originally an agricultural area and most people in the region were engaged in mining, fishing, and hunting. People grew rice in paddy fields, fruit in orchards, and gardens in the areas adjacent to their dwellings. The physical land of Phuket is an island composed of 77% upland terrain, which is a factor in the production of rice. Most people built settlements on the flat lands (Phuket Agricultural Land Reform Office, 2013). The harvesting of rubber in plantations in Phuket began in 1901, which represented a new occupation for people at that time. However, whilst many people adopted the cultivation of rubber plantations, decreases in the price of rubber led to a reduction in local rubber production.

Since 1964, the government of Thailand has promoted forest conservation zones in Phuket province in accordance with the Forest Conservation Act of 1964, with the Forestry Department allotting some parts of the forest conservation zone to the ALRO for

distribution to impoverished farmers. When the government passed the Forest Conservation Act in 1964, and appointed the ALRO to manage forestry land, this had an impact on the owners of land in the forestry zones covered by the act who did not have title deeds to the land they occupied. Thus, they became trespassers in the forest conservation area. This created a conflict between the original landowners in the forestry conservation area and the government. This problem continued until May 4<sup>th</sup>, 1993, when the situation was resolved by the Council of Ministers ruling on overlapping territorial claims between villagers and the government. At that time, the understanding of the original owners was that by following the ALRO4-01 process they would obtain a title deed to their land, but that perception was not correct and this misunderstanding is at the root of the problem of ALRO4-01 land in Phuket province, since when landowners obtain a right to land under ALRO4-01 for agriculture, they can only do certain things on that land. This regulation does not take into account the difference in the trend of the development of the province, as discussed by Na Ranong (2007), which is that the main economic strategy in Phuket since 1986 has been tourism. Therefore agricultural use of land has given way to use in the service sector to accommodate the needs of visitors, and as a result, the value of land has been increasing year on year (Kanlayamit, 2004).

This situation has encouraged landowners to use their land to support tourism and thus to add value to the land. Phuket is open to tourism all year round, which impacts labor in the province, so laborers need places to live in Phuket, and tourists need rooms for rent or guest houses. Landowners have therefore moved to fill these needs in the local economy. Another factor is that the agricultural activities of ALRO4-01 landowners do not constitute social agriculture because they are not producing agricultural products to support their own lives (Phompakping, 2002), but are engaged in agriculture as a market-oriented activity.

Thus, to summarize, the three stages of socio-economic development in the area administered by the ALRO4-01 have been:

- 1) Mining, fishing, and hunting
- 2) The cultivation of rubber plantations
- 3) Tourism

Landowners in Phuket have therefore adapted their land use to follow the economic trends that have occurred in Phuket province.

### **The Use of ALRO Land and its Value in the Socio-economic Dimension**

In considering suitable use of land, it is necessary to take into consideration both the characteristics of the land and the economic conditions (Wongharnchouw et al., 1999). Lokniyom et al. (2008) found that the reason that villagers encroached on forest areas was because they lacked land resources and they therefore encroached on forest areas to create areas for agriculture, which improved their economic situation. When considering the potential economic benefits of the use of ALRO4-01 land in Phuket province, it is apparent that the present ALRO regulations cannot respond to the economic needs of the landowners with the result that their use of the land is illegal based on the provisions of ALRO4-01. Further, Jarujan and Dokjampla (2010) reported that all affected people wanted title deeds to their land and to be able to improve the land and increase its value based on a right of ownership. The current value of land in Phuket creates many factors that militate towards the landowner's illegal land use, and this is encouraged by the need for the owners to earn a sufficient livelihood, since in the Phuket urban community the cost of living is high.

### **ALRO4-01 Land Use and its Value in the Environmental Dimension**

The ALRO were given responsibility for an area of the National Forest Reserve by the Cabinet at the time when land reforms were implemented (Sang-Aram, 2012). The occupiers of land in the National Forest Reserve were characterized as squatters who encroached on forest areas for agriculture. The aim of the ALRO was to create a buffer zone between forest conservation areas and agricultural areas in order to decrease encroachment by villagers onto the forest areas (Jiraphan, 2011). This concept was expressed in plans for increasing the performance of reform land in the following terms: *“There is no problem of arable land in question. It is also necessary to provide critical support for the Rat, which must be carried out with the migration. The conservation of the forests and watersheds is the reason for the body that is operated by the government agencies”* (Ministry of Agriculture and Cooperatives, 1991). The aim of the policies of the Department of Forestry and the ALRO was both to protect the forests and



also to reduce the problems of the farmers who lost their right to exploit forest areas (i.e., the people who lived in the forest), thus increasing their quality of life (Mahashanawong et al., 2009).

The philosophy of land reform should take into consideration the protection of the natural environment in the ALRO area by the use of agricultural practices, such as integrated farming and organic farming (Agriculture Land Reform Office, 2005). Environmental conservation is an economic issue for the province, because the development of tourism in Phuket relies on its beautiful natural resources, including the island's mountainous forests. Therefore, environmental destruction has a direct impact on the economy of Phuket.

### **Suggestions for Changes in Land Use in the ALRO Area of Phuket Province**

In this study, four issues were found where changes are needed in the land use regulations of the ALRO:

#### ***1) Changes in ALRO land use in the current legal context***

There is a need to create awareness of the issues involved in ALRO4-01 land holdings, because the main aim of ALRA 1975 was to solve the problems of poor farmers and their lack of arable land. The government allocated land to those who owned no arable land or squatters who occupied forested areas administered by the ALRO. Thus, poor farmers had the opportunity to create income from agricultural production.

This study found that producing agricultural products in Phuket is expensive and that agricultural production in the province is insufficient to meet the demands of the people in the area. This creates an opportunity for farmers who can produce crops to support the people in the province, but farmers must change their farming methods, because at present most farmers practice mono-cropping in, for instance, rubber plantations or orchards, where the products are unrelated to needs of the people in the province. Farmers need to change production to respond to the needs of the hotel industry for products, such as vegetables and flowers, where there is on-going demand.

## *2) Adaptation of the use of ALRO land for ecotourism*

The tourist resource base of Phuket is centered on areas such as the night zone (around Pathong) and its beaches. Almost all of the ALRO area is in the upland areas and the forestry protection zone in some areas is also adjacent to the sea. These areas are very beautiful and could be used both for efficient agriculture as well as for eco-tourism activities. ALRO land can be adapted to eco-tourism, but this will necessitate development of facilities, such as rooms for rent or accommodations for tourists. At present, however, the owners of ALRO land cannot undertake such development because it is illegal, so the ALRO may have to adapt its regulations to allow construction within the ALRO area as well as activities that are related to eco-tourism.

Whilst at present, such adaptations of land use are illegal in Phuket, the use of ALRO land for activities such as eco-tourism can be conducted parallel to traditional agricultural activities and represent a means by which farmers can achieve maximum efficiency and income from their right to the land.

## *3) Possible solutions for the problem of use of ALRO land in Phuket, contrary to the purposes of land reform*

In the case of Phuket, it is proposed that the ALRO should deal with the issue of the illegal use of ALRO4-01 land by adopting the idea of the relinquishment of ownership of ALRO4-01 land with the ALRO then returning land to the original occupants under a leasing agreement. This solution was adopted in Phayao province, where the ALRO solved a similar problem where farmers of ALRO4-01 land had illegally built rooms for rent or shops. After the ALRO had retrieved the land from its owners, the ALRO then returned the land to the original owner as a lessee who rented a business from the ALRO (Thairath, 2014). Whilst a solution such as that used in the Phayao model is different from the original concept of ALRA 1975, which aimed to tackle the lack of arable land for the poor, it nevertheless represents a practical solution to the problem of illegal use of ALRO land.

In this study the researchers found that holders of ALRO4-01 land in Phuket were mostly the heirs of the original 'owner' who occupied the area prior to the passing of the ALRA 1975. However, after the announcement of the granting of land rights in ALRO 4-01 land (around 1991–1993), most landowners understood that the registered owners of ALRO4-01 land would be able change the ownership of the land based on the holding

of a title deed. In fact, the nature of the holding of ALRO land in Phuket was different from other areas of Thailand because in Phuket the land concerned had formerly been occupied by the ancestors of the holders. The government asserted its authority under law to administer the land even though there were already people in possession of the land. Thus, the ALRO4-01 land became subject to the administration and control of the government by virtue of the sovereign power of the government as the elected representatives of the people. Additionally, Phuket was included by the government in its policies for tourism development and Phuket is a strategic resource which the government has used as a selling point for national tourism. Therefore, the government cannot deny that their policies were wrong and that they have resulted in changes to the farmers' livelihoods. So, the Phayao model is a suitable compromise for both the farmers and the government and a means to help poor farmers.

#### *4) Adapting land use, with some amendments to the Law*

Definitions of the relevant legal terms that can be found in the following sections of the legislation are:

Section 4, defines the terms "farmer" and "holdings of land." These cannot be extended to accommodate the current conditions in Phuket, where the meaning of farming has changed to include almost all activities conducted through a farmer's labor, and the high cost of living has had a significant impact on the livelihood of farmers. Therefore, the current definitions in the act are having the effect of restricting the well-being of the holders of ALRO4-01 land.

The term "land reform" is defined as referring to efforts to reform the ownership and use of land through farm activities. This constitutes a limitation since the return on agricultural activities is limited except in those areas that only have the potential to be farmed.

Article 30, paragraph 5 defines the terms "activities related to" and "support activities." The general principle is that a group of people or a community organization can request the use of an area falling under the authority of the ALRO not occupied by farmers but used for agriculture. Companies can choose to rent ALRO land, but the activities carried out must support agriculture. However, the extent of a "community" is

not always obvious in Phuket, because it is a provincial town and because of changes in the local environment. Determining the boundaries of a community located in an urban area may not be possible, and the ALRO regulations governing the use and exploitation of the community's land may not be conducive to the economic transformation of Phuket, which is now a tourist city. The regulations may need to be expanded to widen the allowed use of land. "Business-related support" would represent a wider definition than purely agriculture and would allow businesses to respond to strategic national, provincial, or local needs, and extend beyond the currently allowed land use in such a way that is wider than the original framework but supports related services in the community.

Article 26 defines the rights of holding land. Some areas in of ALRO land in Phuket were forestry land, some of which was already occupied by people who claimed rights to the land. But the area taken over for administration by the ALRO was not surveyed and the utilization of land was limited. Further, there is a problem as to what happens to land rights after the owner dies, in which case his successor could disrupt the agricultural use of the land by conducting non-agricultural activities that might in any case have been traditionally conducted on the land. In general, one thing upon which all parties agree is that any amendment to the law should not in any way affect the ownership of the land by "children of Phuket farmers" and the majority of parties want to prevent the commercialization of ALRO land by allowing it to be sold to outsiders.

The perception of the owners of ALRO4-01 land in regards to its use is that it should be multi-functional and that they should have the right to possess and manage the area. Taking into consideration the need to increase property values as well as maximizing the economic value of the land (Rossiter, 1995), the owner should focus on opportunities for developing the land from agricultural use to use in the tourism and service sectors as a way to increase their income from the use of the land. After all, Phuket's tourism and service industries are the main gross province product (GPP) of the province (Sakolnakorn, Naipinit, & Kroeksakul, 2013). Whilst the perception and needs of the landowners are different from the objectives of the ALRO, consideration must be given to the fact that the returns from agriculture as compared to those from tourism are lower. Nevertheless, the issue of landowners' rights in ALRO4-01 areas needs to be considered from many dimensions. Many studies have focused solely on the economic aspect of the issue without considering the social and environmental impacts at all, and

they are sensitive because of the perceptions of the landowners. However, future studies need to consider a suitable model for the management of agricultural reform land, because the aim of ALR is to decrease the gap in social status through the redistribution of land nationwide in Thailand and the utilization of resources must bring benefits through the more even spreading of opportunity throughout the population.

## Conclusion

The study of land use change under the management of ALR in Phuket found the main factors influencing the problem to be the value of the area in Phuket province being higher and the area of the province being smaller. When the land has a high value, it influences the owners to adapt their activities and livelihood to respond to the needs and directions of province activity development in tourism and business areas, such as with a dormitory, resort, restaurant, etc., as this increases the value of land more than agriculture would in the area. In addition, the character of the ALR area of Phuket province has 2 patterns, which are: that it is an area connected to the national forest conservation community and economic zone; and that the ALR is not far from the economic zone, so almost any activity in land use is different. However, the activity in ALR areas at the present has changed more than 70% of total ALR in the Phuket province, so the possibility in the content of the suggestion of this study is that the government improves the law to be suitable with land use and value in the area, or farmers searching for new practices to increase the value of agriculture product in an ALRO area, such as with high value vegetables, organic agriculture production, etc., but the research is only specific to being a guideline for the land use in the ALR area in Phuket province, and results may not be proper for the other provinces in Thailand.

## Limitations

The findings of this study were limited by the difficulty of interviewing ALRO4-01 landowners, because most of them were using the land in violation of ALRO4-01 and were not therefore willing to be interviewed. In addition, it was hard to know what land fell under the definition of ALRO4-01 land, because the boundaries of the ALRO4-01 land were not clear, and in the time of the research study the official map had different boundary lines and still had an overlap in the land between the Department of Forestry,

the Royal Thai Army, the Land Development Department, and the Agricultural Land Reform Office.

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