

CHAPTER III

RESEARCH METHODS

Upland and Lowland areas are widespread throughout in Cambodia with suitable for vegetable production. Vegetable is planted in the all provinces and in many regions, especially central areas surrounding the Mekong river, Bassac river and Tonlesap river. There are six provinces which supply vegetable to Phnom Penh. Most important provinces for vegetable production in Cambodia are Kampong Cham and Kandal provinces. Farmers of both provinces use the highest percentage of their total lands for vegetable cultivation. Vegetable growing accounted for 14% and 11% of land use in these provinces (NCSC, 2008).

3.1 Site selection

The study was conducted during 2008. Kandal province was selected based on agricultural production such as rice farming, vegetables and home garden for the farmers' subsistence and where the government, non-government organization and farmers' self-help group were implementing new technology after they had received the services. Kien Svay District, within Kandal province, was selected as the study site. Rice, vegetables and home gardens were the three major crops in District, concentrating in the lowland area along Bassac River and Mekong River.

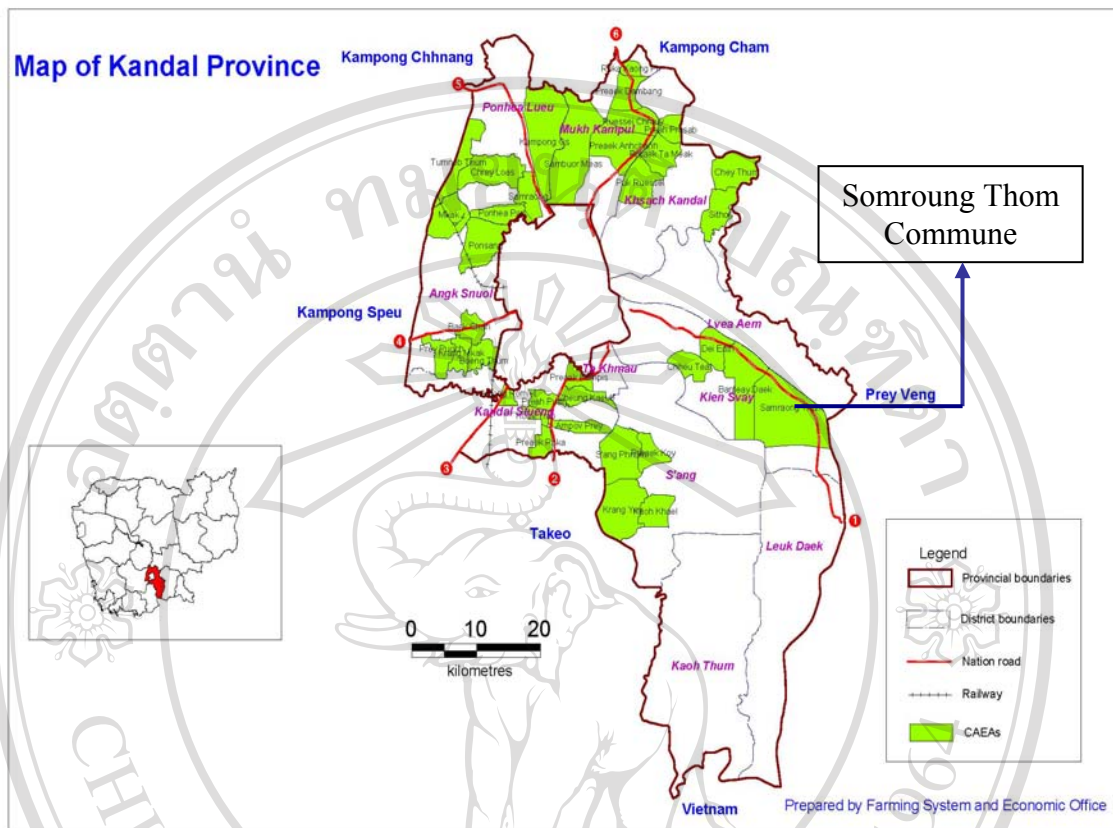


Figure 3.1 Map of selected area, Kandal, Somroung Thom Commune

3.2 Sampling techniques

The questionnaires were used to acquire better contextual understanding from different types of extension services systems in Kandal province. Three groups of farmers exposing to different extension systems (Government, farmer, Non-government organizations farmer and Farmer group) under Kien Svay district were selected for interview based on the key performance indicators.

- Group 1: Farmers related to vegetable production (Govt. Farmer group)
- Group 2: Farmers related to vegetable production (NGOs_Farmer group)
- Group 3: Farmers related to vegetable production (Farmer group)

Thirty five farm households who were growing vegetable in each target group were randomly selected for the survey with structured questionnaires. The

information collected was farmer management practices and vegetables production system. The social-economic and agro-ecological variables which included household income source, land holding, production process, production cost, seed selection, land preparation, fertilizer application, pesticide application, pests, natural enemies, diseases and other constraints of productions and farmers' responses to agricultural extension were collected during the survey.

Table 3.1 Distribution of sample size

Village	Govt. farmers		NGOs farmers		Farmer to farmer	
	Household interviewed	Total no. of household	Household interviewed	Total no. of household	Household interviewed	Total no. of household
Preak Thaker	35	281	0	0	0	0
Somroung Ker	0	0	35	318	0	0
Chroy Thore	0	0	0	0	35	243
Total	35	281	35	318	35	243

Source: Survey data, 2008

3.3 Data collection

The information in following areas was collected directly from the field survey and secondary source related to the objectives.

3.3.1 Secondary data

Secondary data was collected from publications of government agencies, non-government organizations, research institutes, libraries, commune map, commune strategy and other published articles on production, productivity, farming systems, extension service and related aspects of the study.

3.3.2 Primary data

Based on RRA/PRA, the primary data collection were conducted through interview face to face with key informants, direct observation on agricultural farm and households with large-scale and small-scale agriculture land in vegetable. Interviewing was also performed on the headman of commune, committees and the elders, who had knowledge about historical development of the commune. In

addition, the group interview was conducted separately on households related to extension activities and identification of representatives of households who grown vegetables. The interview covered various aspects, the history of study area, problems and causes of lack extension, impact of food insufficiency on daily livelihood. In addition, interviewing was conducted on agriculture officers at provincial and district levels, NGO's offices which had responsibility on rural development strategies, government policies implementation on agriculture extension and poverty reduction.

3.3.3 Village head and elderly people

Village head and elderly people were the most important key informants during group discussion and interviewing at village. All of them shared their experiences about what they had known, for example: the changes in environments, livelihood activities, and agricultural related constraint, etc. The village head also provided us with information on statistic, agricultural and non-agricultural activities of village people and any contacts with outsiders, existing development projects and future potentials in the village, etc.

3.3.4 Vegetable growers

As far as gaining accurate information was concerned, we involved talking with farmers with either who received or not received knowledge from difference types of extension service in each targeted village about their vegetable practice. Then, the key informants were asked to name some household representatives for interviewers to select for further interviewing.

3.3.5 Agriculture and development related officers

The officers from Government, NGOs, and public organizations who had worked in the village acted as the key informants of research because they knew not only the constraints in agricultural production and income generating activities in the village, but also the difficulties in their job to work with local people in development to improve rural livelihood systems.

3.3.6 Key informant interview

Semi-structured interviews and PRA/RRA were conducted for interviewing at household and village level to get the information from key informants. The interviewing was performed according to the subtopics (checklists). Interviewing was conducted on household head. In case of absence of the household head, the main household members were interviewed.

3.3.7 Direct observation

Observation included the situations and activities during the field survey for collecting complementary information for the study. This included physical, social, economic and environmental conditions of the study area.

3.3.8 Participatory workshop

Thirty Six participants at Somrourng Thom commune were selected to participate in workshop from three villages. The participants included vegetable farmers who had been access to the extension programs by Government, NGOs and farmer group. The purposes of the workshop were to obtain the overview of information and households were questioned in the open participatory discussions on general information, cropping calendar, farming practice, input management, and problems on their farms. Also discussed about market, flooding occurrence and exchange of new farming practices that they had found after get training. Other aspects related to the extension activities, extension methods and farmers' practice on vegetable production.

3.4 Data analysis

In consideration of the agriculturally based subsistence economy of Cambodia, agro-ecological, economic and social aspects were considered in the assessment of vegetables productions, process and outcome performance from difference types of service system. The descriptive statistic provided the basic understanding of the major problems in vegetable production, farmer's coping strategies and perceptions. The stakeholder analysis helped understand the nature of cooperation between farmers

and extension agent, extension staff perception in delivery services, technical knowledge in solving vegetable production.

To achieve the objective 1, typology of farmers' vegetable production systems were constructed based on qualitative and quantitative analysis from the field interaction with farmers. Cost-benefit analysis was used to assess economic viability of the system.

To achieve the objective 2, farmer interviews from three groups receiving different approaches of delivery systems were conducted. Effectiveness of delivery systems were measured on frequency of visits, types of information provided, effectiveness of recommendation or methods provided, and farmers' acceptance of technology given.

To achieve the objective 3, a multi stakeholder workshop consisting of government extension staff, NGOs, key contact farmers and farmer representative in three villages were carried out to determine the workable directions of delivery systems for improving vegetable production.

However, the analysis data were then entered into spreadsheet and read into SPSS 16 for data cleaning, organization and analysis.