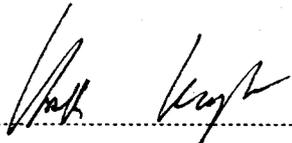


THESIS TITLE : PROBLEMS AND NEEDS IN FISH CULTURE AND EXTENSION SERVICES
OF SMALL-SCALE FISH FARMERS IN NAMPONG-NONGWAI IRRIGATED
AREAS, CHANGWAT KHON KAEN.

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ABSTRACT

The objectives of this research were to study 1) basic socio-economic characteristics of small-scale fish farmers in Nampong-Nongwai irrigated areas of Changwat Khon Kaen , 2) fish culture conditions and extension services which the farmers had received , 3) problems and needs of fish culturing and extension services and 4) to compare problems and needs of fish culturing and extension services of the farmers who came from different backgrounds. A group of sample was purposively , proportionately , and systematically selected. Personal interviews were used for data collection. The data was analyzed by using SPSS for Windows and the results were expressed data analysis in frequency , percentage , arithmetic means , standard deviation , t-test , and F-test.

The results showed that average age of the small-scale fish farmer was 49.5 years. The farmers occupied land in the average of 14.2 rai. Cash income of the farmers came from rice , animal husbandry , and labour for an average annual salary of 54,155 baht. The farmers however, were indebted an average of 92,435 baht per family. The average fish culture experience of the farmers was 5.6 years. Their average-pond size was 764 square meters and was approximately

1,118 meters from home. The majority of the farmers raise mainly *Oreochromis niloticus*, and then *Puntius gonionotus*, and then *Cyprinus carpio*. The majority of the fish fry were bought from a private mobile truck, and they were stocked on average at about 10,645 fish per rai. The fish were harvested in the average period of 9.8 months, and they yielded 574 kilograms per rai. The family consumed an average of 26.5 percentage of the yield, and they sold remaining 73.5 percentage. The average cash income from the fish was 8,200 baht, while the expense of the fish culture was 3,764 baht.

Fish-culture knowledge of the farmers came from many sources, which were television (67.5 %), radio (47.8 %), and fish culture booklets (42.3 %). Approximately 24.7 percentage of the farmers had been supported by the government sector on fry, feed, and pond construction.

The main problem on fish culturing was that the farmers lacked the knowledge of fish feeding. They needed to know how to prepare fish feed, and how to calculate daily fish feed amounts. In addition, they expected the government to replace the fry lost from flooding, and diagnostic fish disease, establishing a fish fry center in sub-district, establishing a fish fry market at Khon Kaen Inland Fisheries Development Center, water quality analysis service, establishing fish-farmer groups in the villages, and supply adequate amounts of water in the irrigated canals.

The main problems facing the extension services were that the farmers had never received information fish culture booklets on the following topics: the most successful fish species for culturing, integrated fish farming, fish culturing in rice fields, and nursing fish fry in cages. Nevertheless, the farmers needed to be trained in the topics of how to buy quality fish fry, fish nutrition, and natural fish breeding. They also needed extension officer to visit their fish pond as well as contract the extension officers for fish culture education, consulting, and input regarding fish culturing.

When comparing the problems and needs of the farmers according to the objectives of fish culture , age , cash income per year , pond area , and experience on fish culture. They were significantly different on the problems of fish culture , the needs of fish culture , problems of the extension services which had been received and the needs of extension services.

Suggestions for extension planning from this study were to 1) distribute knowledge on fish feeding , 2) increase distribution of fish culturing booklets , 3) increase fish culturing training programs for farmers , and 4) increase using provincial radios as a mass media for fishery extension.