

Narinrat Kalampabut 2011: Land Use Planning under Risk for Highland Vegetables Production of Nong Hoy Royal Project Development Center. Master of Science (Resource Management), Major Field: Resource Management, Interdisciplinary Graduated Program. Thesis Advisor: Assistant Professor Visit Limsombunchai, Ph.D. 106 pages.

The objective of this study was to analyze the land use plan under risk for highland vegetables production of farmers in the Nong Hoy Royal Project Development Center, subject to the maximize returns at the acceptable risk level to farmers, by using Modern Portfolio Theory. The data used in this study were costs and returns for the past 5 years on vegetable production of different 10 types. They were Red Oak Leaf, Green Oak Leaf, Head Lettuce, Chinese Cabbage, Spinach, Radicchio, Doi Kham Chinese Kale, Chinese Cabbage-Michilli, Cabbage, and Kailaan. The data were collected via in-depth interview and analyzed according to the production seasons (rain, winter and summer).

The study results pointed that farmers should take price risk into account in their production, and the production risk will increase when they require a higher return on their production. Therefore, to reduce the production risk, the diversification by growing various types of vegetables in the field should be put into practice. This would reduce the risk and yield a higher return to the farmer when comparing to a single crop growing. In addition, the results from this study proposed the alternatives to the farmers to produce at the optimal returns and the risk levels that they have a preference. For example, in rain season, if the farmer could bear the production risk at 5.53% and returns at 84.73%, farmer should grow Green Oak Leaf, Chinese Cabbage-Michilli, and cabbage at the percentage share of cultivated area of 0.51 0.14 and 0.35, respectively.

However, the data used in this study were the past production data which would be a limitation of this study. Thus, to enhance the accuracy of the analysis results, the database of costs and returns on each type of vegetable should be set up. For the further study, flowers and fruit trees should be included into the analysis, as this study was focus only on vegetables production. And the Royal Project should have a production planning system, started from farm level, royal project development center level through the organization level.

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Thesis Advisor's signature