Thanes Maneekul 2010: Network Modeling for Forecasting Cassava Yield in Khao Hin Sorn Royal Development Study Center Area Based on Principles of Environmental Systems. Doctor of Philosophy (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Mr. Sophon Thanamai, Ph.D. 143 pages.

The objective of this research is to construct network models for forecasting cassava yield in Khao Hin Sorn Royal Development Study Center Area based on using principles of environmental systems. There are 3 steps of study, viz. (1) study on structural change of agriculture environmental system of cassava in Khao Hin Sorn Royal Development Center Area (2) find out the environmental structure affecting cassava yield, and (3) develop network modeling for forecasting cassava yield in Khao Hin Sorn Royal Development Study Center Area.

The result of this study revealed that (1) there were 18 possible factors affecting agriculture environmental system of cassava in Khao Hin Sorn Royal Study Area. The natural factors comprised precipitation, rainy days, sunny hours, mean temperature, mean maximum temperature, mean minimum temperature, soil type and topography. The man-made structure comprised cassava variety, planting time, land preparation, ridging, spacing, fertilization, control of weeds, diseases and insects, age at harvest and harvesting method. (2) No natural factors were found affecting cassava yield, while 2 man-made factors, viz. spacing and fertilization affected yield. (3) Theoretically, there were 144 possible network models developed, but only 41 network models were suitable for in Khao Hin Sorn Royal Development Study Center Area.

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