水不足下におけるコメの収量の改善に向けて
－カンボジア国プルサト流域の事例－
Improvement of Rice Yield in Water Scarce Condition
- A Case Study in Pursat River Basin, Cambodia-

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I. Introduction

Cambodia is an agrarian country with over 80% of the total population lives in rural areas and most of them are relying or engaging in agriculture. Country's rice yield is currently the lowest compared to other major rice producing countries. To improve crop productivity, water management is one of the main factors to be considered. Temporal and spatial water availability in Cambodia is scarce and crops are prone to stress due to drought and poor irrigation management. Enhancing water management is critical and underpins the application of other agronomic components to be confidently applied so that yields are reliably increased. This study aims to analyze the effect of water stress on rice yield and improve the rice production while optimizing the harvest area especially in the dry season.

II. Materials and Methods

This research is conducted in Pursat River Basin of Cambodia. Pursat predominantly produces rice. As a methodology of this research, river flow data will be used to assess water resource availability and then irrigation water demand of each irrigation scheme (Figure. 1) will be calculated from crop evapotranspiration, percolation and effective rainfall, so that water deficit index can be determined. Finally, potential yield will be estimated using DSSAT (Decision Support System for Agrotechnology Transfer).
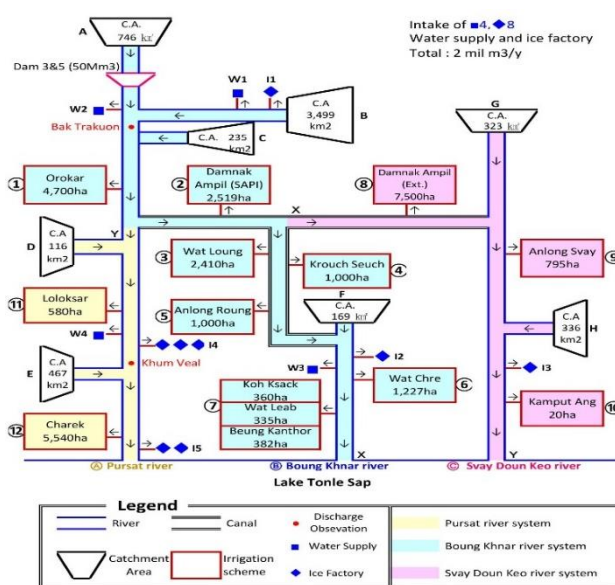

Fig.1. Diagram of river and canal system in the Basin

III. Expected Results

The outcome from this research is the understanding of the effect of water stress on rice yield and optimization of the cultivated area in accordance with the limited water resources in order to keep up the rice production, prevent water conflict, avoid return lost and reduce poverty in the area. It is a key reference for decision makers or farmers in making decision and planning their cultivation.

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