

The variability in the rice production by the precipitation in Northeastern Thailand rainfed areas

Hitoshi Toritani[1]; . NIAES Water Cycle Team[1]

[1] Agro-Meteorology Division NIAES

<http://www.niaes.affrc.go.jp/>

Variability in the precipitation driven by climate change is considered to significantly impact food production in the near future; hence, government officials are very concerned about this issue for water resources management. The field-scale variability in water resources can be evaluated by several methods; however, the methods suitable for evaluating the regional-scale variability in water resources in order to formulate policy decisions are few in number.

The purpose of this study is to evaluate the impact of the precipitation variability on food production, especially rice production, in rainfed paddy fields on a regional scale by constructing and developing a hydrological process and crop yield estimation model. Field investigation, including water balance observation, interviews with farmers and remote sensing analysis from satellites, on water and rice growth condition, especially flooding and a crop calendar in rainfed paddy fields, were performed to confirm the assumptions and parameters in these models. Within the framework of this study, we obtained good estimation results of the regional scale of rice yield by precipitation variability in northeastern Thailand.