

Impact of Natural Hazards on Agricultural Economy in China: Based on a General Equilibrium Analysis¹

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Abstract: Base on a standard general equilibrium model for China Marco-economy, this study estimated the impact on agricultural product and food market caused by natural hazards, and considered two scenarios: i) drought scenario, which are various in different regions; ii) flood scenario, which are also various in different regions. in drought scenario, crop outputs would increase in corn, oil seed and potato due to increasing domestic (corn and potato) or foreign demand (oil seed); to meet that higher demand, agricultural labor would be integrated into above crop productions; in flood scenario, crop outputs would increase in paddy, wheat, corn, fruit, and potato due to foreign demand (corn) or both domestic and foreign demand (others); to meet that higher demand, above crop productions would employ more agricultural labor. The main reason for above increasing in those crops is the lower price level of domestic and import market, which would motivate domestic demand and foreign demand. According to the results of the employment changing, agricultural labor plays as the key role for crop productions in the case that drought and flood occur. These results also prove that for crop productions, drought was as a more serious problem than flood due to more crops would be impacted to decline in output. For the households, in drought scenario, households in Yunnan and Henan would be better in welfare; in flood scenario, most of rural households would be better except those in Guangxi, Henan, Jilin and Shandong. Those rural households with better or worse welfare were marked by the similar change in their food consumption in drought or flood cases. In other word, more food consumption would contribute higher welfare for rural households. Compared with urban household, the welfare of rural household at total level would be worse in drought scenario but would be better in flood scenario. The reason behind this is that the income of urban household would be increased more in drought scenario than in flood scenario and further its food consumption would be reduced more in flood scenario than in drought scenario. Other findings include: i) for crop productions, corn and potato would be better in both drought scenario and flood scenario; ii) The import of vegetable would be increased in both drought scenario and flood scenario.

Key words: Agricultural production, food consumption, CGE model, natural hazards, multi-regional input

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