



17th International Input-Output Conference

TITLE: AN INPUT-OUTPUT ANALYSIS FOR ECONOMIC LOSSES OF FLOOD CAUSED BY GLOBAL WARMING - A CASE STUDY OF JAPAN AT THE RIVER BASIN'S LEVEL

AUTHORS: HASEGAWA, RYOJI ; YOKOKI, HIROMUNE; MIMURA, NOBUO; TAMURA, MAKOTO; KUWAHARA, YUJI

EMAIL: rhase@mx.ibaraki.ac.jp

COUNTRY: JAPAN

KEYWORDS: FLOODED AREA ; RIVER BASIN ; GIS ; INTER-REGIONAL I-O TABLE ;

PAPER CONFERENCE CODE: 87

FULL PAPER IN CD?: YES

ABSTRACT:

Global warming apprehends the risk of flood in lowland area due to sea-level rise. The flood disaster does not only generate the direct damage but also brings about various indirect economic losses especially in large river basin where population and economy are concentrated. Therefore, it is essential to estimate direct and indirect economic effect of flooding at the river basin's level for effective adaptation policy. This paper identifies economic losses of flood in several major river basins in Japan by industries and regions. First, this paper calculates flooded area due to climate change, based on the IPCC (Intergovernmental Panel on Climate Change) scenario, with the GIS (Geographic Information System)-based analysis. Second, this paper focuses on agriculture and estimates its direct economic losses of flooding. Third, the input-output model with mixed exogenous and endogenous variables is applied to inter-regional input-output tables for the estimation of indirect economic losses. The results show the differences of potential damage of flood among each river basin and would provide the implication of adaptation policy in terms of economic aspect.