ABSTRACT

KASAN. 2012. The Impact of Trade Liberalization and Climate Change in Agriculture Commodities in Various Countries on Macro and Economic Sector of Indonesia: General Equilibrium Economic Model Approach. (RINA OKTAVIANI as a Chair, MANGARA TAMBUNAN and POS MARODJAHAN HUTABARAT as Members of the Advisory Committee).

The objectives of study are to analysis: (1) the impact of climate change on agriculture commodities productivity in various countries including Indonesia; (2) the impact of trade liberalization of agriculture sector on macro economic performance in main producer and importer of agriculture commodities and particularly on macro and economic sector of Indonesia; and (3) the combination impact of trade liberalization and climate change in agriculture commodities on macro economic performance in producer and importer countries and specific impact on macro and economic sector of Indonesia. Econometric model is used to estimate the impact of climate change on productivity of agriculture commodities at region or country level including Indonesia, and the multiregional, multisector computable general equilibrium model is used to assess the impact of trade liberalization on macro and economic sector in main producer and importer of agriculture commodities including Indonesia. The similar tools analysis was also used to analysis the combination impact of trade liberalization and climate change on macro and economic sector in main producer and importer of agriculture commodities. Climate change affected to reduce productivity of paddy rice, wheat and maize in all countries except Russia. Climate change gave negative impact and more dominant to influence gross domestic product in all countries than trade liberalization. Developed countries gain from trade liberalization in agriculture sector for theirs gross domestic product, export, and welfare. In contrary, developing countries including Indonesia lost for their welfare, trade balance and investment. Furthermore, the combination impact of trade liberalization and climate change will push relocation of input factor from agriculture sector to manufacture sector in Indonesia, and it will increase urbanization. The combination impact of climate change and trade liberalization also effected to decrease of employment in all agriculture sectors. The Government of Indonesia should establish the adaptation strategy by diversifying local food consumption to compensate the decreasing of global food production. The Government of Indonesia should increase implementation of non tariff measures in agriculture sector to reduce the potential lost as a results of agriculture sector liberalization. Both of the government and private should improve agriculture sector infrastructure such as irrigation facilities, on and off farm technology to reduce the impact of climate change.

Keywords: Trade Liberalization, Climate Change, Econometric Model, Agricultural Productivity, General Equilibrium Model, Macro and Economic Sector.