



Climate change to reduce crop yields and increase child malnutrition

Adverse effects of climate change on agriculture will counteract any improvements in reducing levels of child malnutrition in the developing world, according to a new report, which calculates that twenty-five million more children will face malnutrition by 2050.

Climate change will reduce crop yields, which in turn will increase the price of food. This will change production and consumption patterns and directly affect human well-being and welfare through reduced calorie intake and increased child malnutrition. The study investigated the most important agricultural crops in developing countries – rice, wheat, maize and soybeans.

The researchers calculated the number of children facing malnutrition in 2050, with and without climate change. They modelled crop growth under projected climate change to estimate agricultural production, consumption, prices and trade of the crops. The costs of adaptation were also estimated for six regions.

The results suggest that climate change will have a negative impact on agriculture and human well-being, with crop yields and production falling more in developing countries than in developed countries. Irrigated wheat yields will fall by about 30 per cent and irrigated rice yields by about 15 per cent in developing countries.

South Asia will be the worst affected region for almost all crop yields, but particularly for wheat and rice. Sub-Saharan Africa is especially vulnerable to adverse climate change with many people dependent on rainfed agriculture. By 2050, average rice, wheat and maize yields will all have dropped.

Even without the influence of climate change, population growth, better standards of living and the demand for biofuels will cause the prices of important food crops to rise. These will increase the price of rice by 62 per cent, maize by 63 per cent, soybeans by 72 per cent and wheat by 39 per cent. With the added influence of climate change, prices will rise even further: an extra 32 to 37 per cent for rice, 52 to 55 per cent for maize, 11 to 14 per cent for soybeans, and 94 to 111 per cent for wheat. Expensive feed and increase in demand (fuelled by many more people having higher incomes, in particular in the more economically advanced developing countries) will also push up the price of meat.

If climate change were not to occur, it is likely that calorie availability would improve in all countries by 2050. However, under climate change, the cereal consumption and calorie intake will fall and child malnutrition will rise. Calorie availability will not only be lower than 2050 levels without climate change, but will decrease below 2000 levels in all countries around the world. With climate change, average consumption in developing countries will drop by over 15 per cent, and child malnutrition will increase by over 20 per cent relative to 2050 levels with no climate change.

Increased investments of around seven billion U.S. dollars a year in adaptation programmes would be needed to avoid such serious consequences of climate change on food prices. More funding is needed to boost productivity, particularly for agricultural research, building rural roads and expanding irrigation, to help farmers adapt to the effects of climate change.

Source: International Food Policy Research Institute report. (2009). Climate Change: Impact on Agriculture and Costs of Adaptation. The report can be downloaded from: www.ifpri.org/publication/climate-change-impact-agriculture-and-costs-adaptation

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