

## SUMMARY

The energy and food crisis demand our attention as millions of peoples' lives and standards of living are at stake. The connection between the energy and food crisis is clear and there are several steps which can be taken to alleviate the crisis. These steps include shifting production of biofuels away from food crops, utilizing waste for biofuel production, spreading sustainable agriculture techniques and increasing research. It is imperative these steps be taken sooner rather than later as the crisis will only be exacerbated with time.

## ESSAY

Two-hundred years ago, T.R. Malthus predicted that a substantial portion of society is condemned to live at the ragged edge of subsistence because man's powers of reproduction exceed his powers of food production (MALTHUS, 1809). Although his theory has been greatly disputed, the question as to whether or not portions of the population will always live below subsistence troubles many today. Data on the number of people suffering from hunger is alarming. The Food and Agricultural Organization's most recent estimate on the number of hungry people in the world is 923 million people, which is an increase of more than 80 million people from 1990-1992 levels (FAO 2008). Much of the progress made over the last decade in reducing the number of hungry people has been devastated by the rapid increase in food prices. In 2007, 75 million people were added to the total number of undernourished people relative to 2003-5 levels (FAO, 2008). The International Food Policy Research Institute recently concluded that the food price crisis may push 105 million people in low-income countries below the poverty line, making them extremely susceptible to food insecurity (QUISUMBING, A., MEINZEN-DICK, R., AND BASSET, L., 2008).

The food and energy crises are highly connected and cannot be solved separately. The increasing demand for biofuels has put pressure on food crops to be grown for fuel rather than for human consumption. Furthermore, higher energy costs are directly associated with higher food prices as energy is a key input in agricultural production, food storage, processing and distribution. The ever-increasing connection between the energy and food crisis demands a critical analysis of the current situation and what steps are necessary to take to improve the well being of society in a sustainable manner. These steps include changing the current production of biofuels away from food crops, improving waste management, using sustainable agricultural practices, and improving infrastructure and research. Government, international organizations, and industries from developed and developing countries will need to work together in order to improve society and alleviate the food and energy crisis.

There must be a rapid shift in the production of biofuels away from food crops and towards more sustainable methods that will not have as large of an impact on food security. This will improve infrastructure and incomes in rural areas, ensuring better food security because people will have better market access and purchasing power. There are many non-food crops that can be used to produce biofuels such as *Jatropha curcas*, Brazil nut and babassu. Nonetheless, the technology to more efficiently extract oil from these non-edible crops is lacking. Therefore, more research is needed in order for resource poor farmers to take advantage of the increasing demand for biofuels.

Another important step to improve the food and energy crisis is to better conserve waste. This can be accomplished in the agricultural sector by using post-

harvest residues left on fields, animal manure, wood waste, residues from food industries, biogas from the digestion of agricultural wastes and wood waste from forestry to produce biofuels (FAO 2008). Cooking oil from restaurants and fat from meat processing industries can also be used as fuel. In the non-agricultural sector, waste improvement can improve the energy crisis by utilizing municipal solid wastes and sewage sludge.

More research on biofuels and modeling the impacts of policy changes are another important step in improving the energy and food crisis. For example, more research should be done on the impacts of biofuels on greenhouse gas emissions, as estimates greatly differ depending on feedstock, location, agricultural practice and conservation technology (FAO 2008). The impacts on land use change, deforestation, land and water resources, and biodiversity must also be addressed. Modeling is necessary to conduct before policy implementation because it can help foresee problems which would otherwise not have been discovered.

Although the current situation is troubling, it is not as dire as Malthus predicted. Technological improvements in, for example, biofuel production have great potential to placate the energy crisis. This in turn would alleviate the food crisis because less food would be grown for fuel and more for human consumption. Furthermore, due to soil and land degradation and the increasing pressures of deforestation, sustainable agricultural methods to improve soil fertility and yields are critical. Expanding extension services in countries is an important step to better spread knowledge to resource poor farmers about sustainable agricultural techniques.

Solving the food and energy crisis is not a matter of whether or not solutions exist. Instead, it is a matter of whether or not people prioritize the crisis and take the necessary steps to solve it. While there are other problems in the world today, the energy and food crisis demands our attention and will become a larger problem in the future if it is not addressed. There are many factors contributing to the food and energy crisis including climate change, population growth and a diminishing natural resource base. While the problem is complex, this should not deter policy-makers and others from trying to improve it. Improving the energy and food crisis has economical, ethical, social, environmental and political value. The crises cannot be solved over night and there is no silver bullet. Nonetheless, there are solutions to the crisis and it is imperative that society tackles the crisis sooner rather than later.

## REFERENCES

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MALTHUS, T.R. (1798). An Essay on the Principle of Population: London.