

Special Seminar

9 a.m.

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Nelson Hall of Food Science, Rm. 2187

The Ugandan Story: Water, Food and Biowastes Research

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Abstract

There is a growing recognition that the interrelations between agriculture, food, bioenergy, and climate change have to be better understood in order to derive more realistic estimates of future bioenergy potentials. Energy resources will play an important role in the world's future. Rural bioenergy is still the predominant form of energy used by people in less developed countries, and bioenergy from biomass accounts for about 15% of the world's primary energy consumption and about 38% of the primary energy consumption in developing countries. Furthermore, bioenergy often accounts for more than 90% of the total rural energy supplies in some developing countries. Rising bioenergy demand is likely to affect nutrition and food security through a number of pathways. The environmental degradation due to cutting of trees for firewood will have a negative impact on the availability of food for human consumption and for use as animal feeds in countries like Uganda. For example, empirical evidence from a number of Sub-Saharan African countries finds a majority of farmers or rural households to be net food sellers. A rise in the food bill for households that are net buyers of food may lead to the substitution of starchy staples for micronutrient rich animal source foods, legumes, processed foods, fruits and vegetables. Extremely poor people will experience decreased calorie consumption. Decreased overall food consumption in terms of calories, as well as of other essential nutrients including protein, fat and micronutrients, can lead to weight loss; impaired development, mental and physical growth in children; and either sub-clinical or clinical micronutrient deficiency in all age groups. Most likely if energy demand proceeds at or exceeds its current pace, calorie availability will decline and child malnutrition will increase substantially, particularly in Sub-Saharan Africa because families will have to make choices between energy and food. Bringing bioenergy production to the farm-scale therefore provides an opportunity for the agricultural sector to reduce their reliance on imported fossil fuels while improving the soil, water, and air quality. The use of animal manure and other organic-based agricultural waste products as bioenergy feedstocks for waste-to-bioenergy conversion processes would allow Ugandan farmers to take advantage of new markets for traditional waste products. Agricultural residues and wastes such as banana peels, straws, nut shells, fruit shells, fruit seeds, plant stalks and stovers, green leaves and molasses are potential renewable energy resources. It is against such a background that this my research interests links biomaterials quantity and quality and water resources in Agriculture in Uganda.