According to the Food and Agriculture Organization (FAO), “Food security exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” Availability, access, utilization, and stability are the four dimensions of food security. In order to provide food for everyone, the food supply chain must meet all four dimensions. Food should be distributed equally to the entire world’s population.

Human population increase has been slow and steady throughout history, but in the last 10 decades, it has accelerated from 1.5 to more than 7 billion. Around 1 billion people, or one in seven, are hungry. Moreover, it is predicted that by 2050, the world’s population will be approximately 9 billion. Rising population and rich diet habits that take a lot more resources to produce are driving our demands up for food. Rapid economic growth, especially in developing countries, has been shifting vegetarian to meat-based diets, causing a large increase in cattle production in the last few decades. Intensified cattle production leads to increased greenhouse gases emissions and energy consumption, which can be detrimental for food security. According to Lal (2014), a 200-m² area can produce 142 kg of wheat or 9.6 kg of beef. The number of people fed in one day is 210 for the vegetarian diet and 13 for the beef diet on this area.

Rising demand is coming precisely at the same time as high energy prices and climate change are making food harder and more expensive to produce. Experts agree that the planet is able to produce enough food for 9 billion people, but the challenge will be producing safe, nutritious, and properly distributed food without harming our environment. Food security is essential to provide food for all and secure a better future for our children while simultaneously uplifting national economies by increasing agriculture productivity. Most farmers around the world are struggling to feed themselves and their families because they lack the

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Students

Graduate Students Can Help Fight Global Food Security

by Saroop Sandhu and Rachel K. Owen

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