

Integrated management of nutrient resources: from crop production system to food chain

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Since 1949, especially when China initiated economic reforms and the open-door policy in the 1980's, China's economy has made great strides. In 2004, China's GDP was 13, 650 billion RMB, which accounted for 4% of total globe GDP (China Statistical Bureau, 2004) . Along with the rapid economic growth, people's living standard improved tremendously. Productions of livestock, fish and horticulture and industrial raw material crops have also grown rapidly. Food supplies, in both quantity and variety, have flourished. In the meanwhile, the daily activity of food consumption has changed from survival-based eating to luxury and excessive -eating for many people. This is especially true in more developed areas and cities.

The rapid economic growth has led to unprecedented resource exhaustion and environmental degradation. Also, improvement in living standard has greatly increased the amount of nutrient stocks and flows throughout the food chain. In the meanwhile, nutrient use efficiencies in both crop and livestock production systems in China remain considerably lower than those in developed countries.

This paper discusses the accomplishments, problems and opportunities in nutrient management in China. The overall situation of nutrient management and major problems in crop and livestock production systems as well as household consumption systems are addressed. A new approach from the viewpoint of the entire food chain to enhance nutrient efficiency and reduce environmental degradation is proposed.