Ensuring the safety of agricultural products is a challenging task in developing countries, as the achieved agricultural production growth was supported by the extensive use of agricultural chemicals. Growing concerns with the application of highly toxic pesticides and the growing world demands for safe foods direct our attentions to the food production technologies as well as to the global arrangement of food production. A focus on food safety issue and the changes in consumer demands worldwide has prompted China to reanalyze and cultivate its strengths in agricultural production and trade to capture economic growth in the medium-long term. An underlying objective of this dissertation was to investigate the state of food safety in China, especially the use of toxic pesticides in agricultural production in addition to the pesticide residues issues. The background of these issues was the increasing concern on human health and environmental protection with the enormous growth of international agricultural trade. Given nature of trade activity, the market behaviors of producers, consumers, traders and of the policy planners concerns were also investigated.

Narrow and limited knowledge based decision making behavior was found. Chinese farmers’ behavior of pesticide use was influenced greatly by their-own field experiences and by pesticide retailers’ advices; they still faced numerous constraints in recognizing pests and insets diseases, evaluating the pesticide effects, and perceiving pesticide risks. Study also found that farmers’ awareness of pesticide hazards were significantly affected by their pesticide knowledge and self-
consciousness. More the efforts are needed, among others, to promote the technical knowledge extension to farmers, to strengthen the governmental monitoring and control measures.

Due to the preference to the low-costs and high yields as well as the limitation on production technologies, the supply of certified safe vegetable products in China still operated at a marginal scale. From the consumption perspective, observed findings showed that a minor confidence in the certified safe vegetable products was the main factor restraining the consumption, which also discouraged conventional farmers to switch to cultivate safe vegetable products. Consequently, governmental efforts on technical and financial supports, credible certification system, and the access to products' information were critical to promote the production and consumption of safe vegetable products in China.

A relationship between food trade and food safety was observed, by focusing on the relationship between Chinese vegetable exports and the maximum residue limits of pesticides (MRLs) regulation set by the developed countries. The revealed trade’s behavior showed that impacts of MRLs should be seen through two types of information, one was the extent of coverage of regulation measured by the number of pesticides placed under the control, and the other was the regulated residue levels. Probably because a change in production technology could not be made instantaneously, vegetable trades value had changed more strongly to the changes in number of regulated pesticides compared to the changes in regulated MRL levels.

Generally, our findings strongly suggested that Chinese agricultural production need to shift its production technologies towards of more environmentally friendly technologies, or equivalently, it required to shift toward more sustainable style of agricultural production. In addition, it is necessary to further improve public awareness on food safety issue through various capacity building activities and create more convenient information access to facilitate consumers reaching the safe foods.