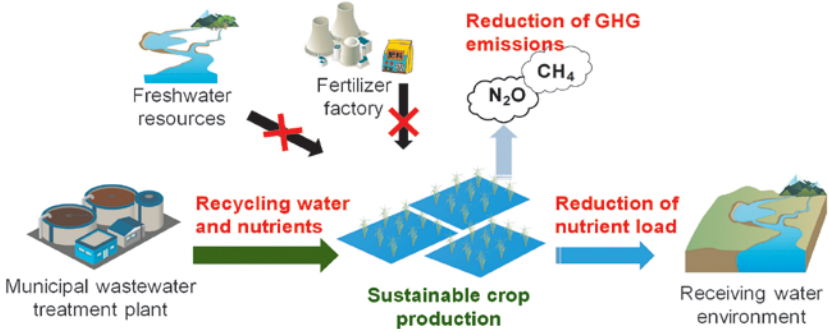
Effective Utilization of Resources Recovered from Municipal Wastewater for Sustainable Crop Production

キーワード　Resource recovery, Urban agriculture, Climate change mitigation

■研究概要

Nitrogen and phosphorus are essential plant nutrients and are present in treated wastewater (TWW). However, current wastewater management practices result in inefficient recovery and reuse of these nutrients, which can cause environmental issues such as eutrophication, contribute to climate change, and jeopardize global food security. Sewage sludge is also a significant source of valuable nutrients, which, in the absence of an effective management and reuse strategy, could lead to "hot spots" of nutrient and pollution loads into the environment. My research focuses on the efficient reuse of TWW and composted sewage sludge in crop production to eliminate the use of mineral fertilizers, reduce freshwater withdrawal and greenhouse gas emissions, increase crop yield and quality, and protect the environment and human health.



■どのような共同研究・連携に結びつけられるか？

- Nutrient recovery and recycling
- Circular economy in wastewater management
- Water emerging contaminants and associated human health risks

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