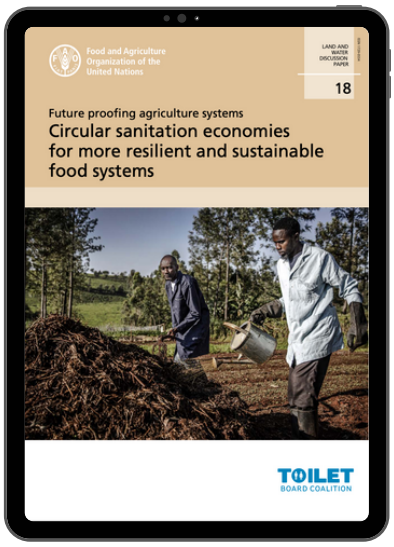
Food and Agriculture Organization of the United Nations

Future proofing agriculture systems

Circular sanitation economies for more resilient and sustainable food systems

The **Food and Agriculture Organization of the United Nations (FAO)** and the **Toilet Board Coalition (TBC)** have collaborated on this piece of work to shine a light on the benefits and rationale for agricultural systems, and the local and national contexts in which they operate, to **champion circular sanitation economies** and the products coming from them.



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FAO website: http://www.fao.org/land-water/news-archive/en/

Toilet Board Coalition Website: https://www.toiletboard.org/resources

The paper echoes the following key messages:

- Five years into Agenda 2030, and the world is not on track to achieve many of the SDGs such as SDG2 on Zero Hunger and SDG6 on Water and Sanitation for all. Global demand for agricultural outputs is forecast to increase by 35 to 50 percent between 2012 and 2050 as a result of population and income growth (Nikos and Bruinsma, 2012). Today, open defecation is still an environmental and health issue, and it is a major barrier for sustainable development. A shift from linear to circular economies can help address these challenges, where recovered nutrients, water and energy from toilet resources (faeces or urine) are returned to food systems.

- COVID-19 has further highlighted the need to strengthen local economies. Our present context calls for innovative solutions such as circular sanitation economies that foster local markets, shorten supply chains and provide necessary products at affordable prices.

- A **sanitation economy approach** promotes the conversion of waste and biosolids, or toilet resources (TBC's preferred term), that a community produces into **compost, water or energy** that is then used locally. Nutrients such as phosphorus and nitrogen can also be recovered from biosolids.

- The agriculture sector is already facing the **impacts of climate change**, erratic rainfall patterns and extreme events. **Circular sanitation models** have the potential to **enhance the resilience** of farmers by capturing "waste" and converting it into renewable resources that are then returned to **agricultural systems.**

- Business innovation in the sanitation economy can provide the agricultural sector with a reliable source of valuable resources that grow with the population whilst **providing benefits for people, the planet and business**.

This paper focuses on discussing the entry points of circular sanitation economies for the agriculture sector and the role they can play to meet the expected increase in population, urbanisation and global food demand.

The business case section of the paper highlights the growing role of the private sector in implementing these models linked with the Water-Energy-Food (WEF nexus), the opportunities and barriers to overcome. Finally, the paper ends with a call to action section for policy makers, governments, agriculture sector professionals and the private sector, as well as consumers at both local and national levels, to implement circular sanitation economies in order to achieve global food security.

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TOILET BOARD COALITION