

Developing circular agricultural production systems

Edited by Professor (UZ) Dr Barbara Amon, University of Zielona Góra, Poland and Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Germany



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Developing circular agricultural production systems

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Endorsement:

“Current agriculture wastes both agricultural inputs and outputs, leading to lower system productivity, higher costs and environmental pollution. A drive toward circular agricultural production systems is necessary to ensure nutrition security and to meet our goals of tackling climate change, biodiversity loss and environmental pollution. This volume, edited by Professor Barbara Amon – a world-leading scientist in the field – features contributions from an array of expert authors and will be a must have item to anyone concerned with the challenge of developing circular agricultural production systems.” (Pete Smith, Professor of Soils & Global Change, University of Aberdeen, UK and Science Director of Scotland's ClimateXChange)

Description:

With the agricultural sector pledging to improve its sustainability, there is an urgent need to move away from linear food production models which rely on significant raw material inputs and generate large amounts of residual waste.

Developing circular agricultural production systems reviews the emergence of circular agriculture as an approach to improving the sustainability of the agricultural sector. The book addresses recent advances in understanding and developing closed-loop systems to optimise crop nutrient cycles and resource use, as well as ways agricultural wastes can be recycled back into agricultural production or used as feedstock to produce a range of bio-based materials.

With its comprehensive coverage, the book showcases how to develop circular agricultural production systems, from using crop residues as livestock feed, to producing biogas from livestock manure and manufacturing bio-plastics from agricultural waste.

Key features:

- Summarises the wealth of research on the ways in which circular agricultural production systems can be achieved
- Highlights how agricultural waste can be reused and upcycled for the benefit of crop and livestock production, e.g. the use of crop residues as biofertilisers and livestock feed
- Reviews our current understanding of closed-loop farming systems and includes case studies of the successful development of closed-loop dairy farms, pig production and aquaponic systems

Audience:

Academic researchers involved in the agricultural and environmental sciences, as well as government and private sector agencies supporting sustainable agriculture and the UN's Sustainable Development Goals (SDGs)

Editor details:

Professor (UZ) Dr Barbara Amon is an Associate Professor for Environmental Engineering and Agricultural Engineering at the University of Zielona Góra, Poland and a Senior Research Scientist and Board Representative for Research at the Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Germany. Professor Amon sits on many panels, including the Intergovernmental Panel on Climate Change (IPCC), UNECE, UNEP and the FAO LEAP Partnership.

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