

# Advances in Conservation Agriculture

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## VOLUMES 1 & 2

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IN AGRICULTURAL SCIENCE

## Advances in Conservation Agriculture - Volume 1

### Systems and Science

Edited by: Professor Amir Kassam, University of Reading, UK and Moderator, Global Conservation Agriculture Community of Practice (CA-CoP), FAO, Rome, Italy

#### KEY FEATURES

- Reviews the development of CA systems globally and elaborates on science underlying the key CA system components.
- Assesses the latest evidence on improving soil and crop health and CA system resilience through the application of the core CA system principles.
- Includes case studies reviewing current science on optimising CA cropping systems involving cereal, legume, horticultural and tree crops as well as integrating livestock in CA systems.

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1. The need for Conservation Agriculture: Amir Kassam, University of Reading, UK; and Laila Kassam, Animal Think Tank, UK.
2. Development of Conservation Agriculture systems globally: Amir Kassam, University of Reading, UK; Rolf Derpsch, Consultant, Paraguay; and Theodor Friedrich, Food and Agriculture Organization of the United Nations (FAO), Italy
3. Conservation Agriculture Systems: soil health and landscape management: Don Reicosky, Soil Scientist Emeritus USDA-ARS and University of Minnesota, USA
4. The role of no or minimum mechanical soil disturbance in Conservation Agriculture systems: Theodor Friedrich, Food and Agriculture Organization of the United Nations (FAO), Italy
5. The role and management of soil mulch and cover crops in Conservation Agriculture systems: A. Calegari, Agricultural Research Institute of Paraná State (IAPAR), Brazil; T. Tiecher, Federal University of Rio Grande do Sul (UFRGS), Brazil; et al.
6. The role of crop and cropping system management in Conservation Agriculture systems: Peter Hobbs, Cornell University, USA; Christian Thierfelder, International Maize and Wheat Research Center (CIMMYT), Zimbabwe; Patrick Wall, Independent Consultant – Sustainable Agricultural Systems, Mexico; Raj Gupta, Center for Advancement of Sustainable Agriculture, India; et al.

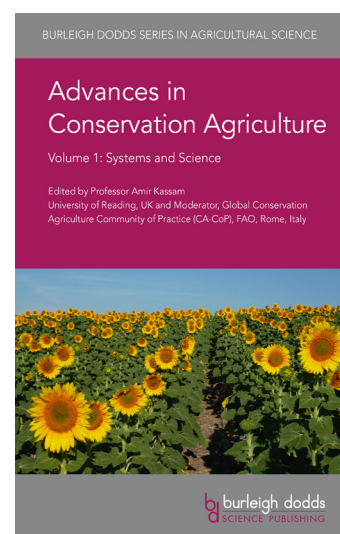
7. Management of vegetable Conservation Agriculture systems: Jamil Abdalla Fayad, Agricultural Research and Rural Extension Company of Santa Catarina (EPAGRI), Brazil; Jucinei José Comin, Federal University of Santa Catarina State (UFSC), Brazil; et al.
8. Managing perennial Conservation Agriculture systems: orchards, plantations and agroforestry: Amir Kassam, University of Reading, UK; Emilio J. González-Sánchez, University of Cordoba and Asociación Española de Agricultura de Conservación Suelos Vivos (AEACSV), Spain; et al.
9. Integration of crop-livestock in Conservation Agriculture systems: John N. Landers, Independent Consultant, Brazil; Pedro Luiz de Freitas, Embrapa Solos, Brazil; et al.
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11. Certification schemes for Conservation Agriculture systems: Juliana Albertengo, Iowa State University, USA
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#### Editor biography

**Professor Amir Kassam** is Visiting Professor at the University of Reading (UK) and Moderator of the FAO-hosted Global Platform for Conservation Agriculture Community of Practice (Global CA-CoP). He is a Fellow of the Royal Society of Biology (UK) and has received an OBE from the British Government for services to tropical agriculture and to rural development. Prof. Kassam is Chair of the International Conservation Agriculture Advisory Panel for Africa (ICAAP-Africa), Member of the European Conservation Agriculture Federation (ECAAF) and Vice-Chair of the Conservation Agriculture Association for the UK (CA-UK).

"This edifying book is a compendium of much of what we have learnt across the world about CA... It will serve as an immensely valuable source of reference – and inspiration – for all those who are committed to putting the world's food systems on a truly sustainable footing. It is with great pleasure, therefore, that I commend this book to you."

Qu Dongyu, Director General of the UN Food and Agriculture Organization (FAO)



## Advances in Conservation Agriculture - Volume 2

### Practice and Benefits

Edited by: Professor Amir Kassam, University of Reading, UK and Moderator, Global Conservation Agriculture Community of Practice (CA-CoP), FAO, Rome, Italy

#### KEY FEATURES

- Summarises current research on optimising CA system practices and their ecological, economic and social benefits.
- Elaborates on how CA systems make efficient use of production inputs such as water, nutrients, energy and addresses challenges in such areas as weed, insect pest and disease management.
- Reviews the central issues of improvement in yield, profitability and ecosystem services as well as climate change adaptability and mitigation in CA systems.

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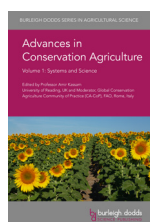
1. Practice and benefits of Conservation Agriculture systems: Amir Kassam, University of Reading, UK; and Laila Kassam, Animal Think Tank, UK  
 2. Crop and cropping systems management practices and benefits in Conservation Agriculture systems: Muhammad Farooq, Sultan Qaboos University, Oman; Ahmad Nawaz, Bahauddin Zakariya University, Pakistan; et al.  
 3. Soil management practices and benefits in Conservation Agriculture systems: Michele Pisante, University of Teramo, Italy; Angelica Galieni, Council for Agricultural Research and Economics and Research Centre for Vegetable and Ornamental Crops, Italy; Gottlieb Basch, University of Évora, Portugal; et al.  
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 5. Insect pest and disease management practices and benefits in Conservation Agriculture systems: a case of push-pull practice: Z. R. Khan, International Centre of Insect Physiology and Ecology (icipe), Kenya; A. W. Murage, Kenya Agricultural and Livestock Research Organization (KALRO), Kenya; et al.  
 6. Nutrient management practices and benefits in Conservation Agriculture systems: Stephane Boulakia, Florent Tivet and Olivier Husson, Centre de coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), France; et al.  
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8. Carbon management practices and benefits in Conservation Agriculture systems: soil organic carbon fraction losses and restoration: João Carlos de Moraes Sá, State University of Ponta Grossa, Brazil; Florent Tivet, CIRAD, France; Rattan Lal, The Ohio State University, USA; et al.  
 9. Biodiversity management practices and benefits in Conservation Agriculture systems: Scott Day, Treelane Farms Ltd, Canada; Ademir Calegari, Agricultural Research Institute of Paraná State (IAPAR), Brazil; et al.  
 10. Conservation Agriculture: climate change mitigation and adaptation benefits: Emilio J. Gonzalez Sanchez, Universidad de Córdoba, Spain; Oscar Veroz-Gonzalez, Asociación Española Agricultura de Conservación. Suelos Vivos (AEAC.SV), Spain; et al.  
 11. Benefits of Conservation Agriculture to farmers and society: Patrick Wall, Independent Consultant – Sustainable Agricultural Systems, Mexico; Christian Thierfelder, International Maize and Wheat Improvement Center (CIMMYT), Zimbabwe; et al.  
 12. Social benefits of Conservation Agriculture systems: Rafael Fuentes Llanillo, Tiago Santos Telles and Dimas Soares Junior, Agricultural Research Institute of Paraná State (IAPAR), Brazil; et al.  
 13. Harnessing ecosystem services with Conservation Agriculture: Amir Kassam, University of Reading, UK; Emilio J. Gonzalez Sanchez, Universidad de Córdoba, Spain; et al.  
 14. Rehabilitating degraded and abandoned agricultural lands with Conservation Agriculture systems: Telmo Jorge Carneiro Amado, Federal University of Santa Maria, Brazil; et al.

#### Biblio information

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