

# Farming Systems Research into the 21st Century: The New Dynamic



Ika Darnhofer • David Gibbon • Benoit Dedieu  
Editors

# Farming Systems Research into the 21st Century: The New Dynamic

 Springer

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# Preface

The outline for this book took shape in the course of several discussions during the European Symposia of the International Farming Systems Association (IFSA) held in 2008 and 2010. The discussions centred on the fact that it was not always clear what Farming Systems Research<sup>1</sup> actually is. For many, it was difficult to identify the core principles, given the diversity of empirical explorations and the abundance of ideas debated during the Symposia. The discussions highlighted that one of the major confusions was fuelled by the fact that the term ‘system’ is used in a number of combinations, e.g. agricultural system, agrarian system, livestock system, or crop production system. Is farming system different from these concepts? If yes: how? Why are there a number of papers which describe a research project about farming, displaying many characteristics of a systemic approach, but do not call it Farming Systems Research? Indeed, the term is rarely used as a key word in publications, nor is it necessarily linked to a clearly defined set of methods. This makes it difficult for young researchers to get an overall idea of what sets Farming Systems Research apart, what the underlying commonality is. In the research presented at European IFSA Symposia, the common epistemology is too often implicit, and it seemed useful to state it explicitly. It was thus agreed that a book would be opportune, to clarify the confusion and to retrace the evolution of Farming Systems Research in the European context.

Compiling a book seemed particularly timely for a number of reasons. It had been over 10 years since the last overviews of Farming Systems Research had been published (Hildebrand 1986; Colin and Crawford 2000; Collinson 2000). Timely, because there had never been a book on Farming Systems Research in Europe,

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<sup>1</sup> In this book we mostly keep with the original term, i.e. ‘Farming Systems Research’. However, we make no claim that this is the most appropriate label, and acknowledge that in some contexts e.g. ‘Farming Systems Approach’ is more common, and in others ‘Farming Systems Research and Extension’ is widely used. Despite differences in labels they all refer to taking a systemic view of farming and of the research process; and keeping one label throughout the book was chosen to avoid confusing readers.

except for the proceedings of various symposia<sup>2</sup> (i.e. Dent and McGregor 1994; Doppler and Koutsouris 1999; Doppler and Calavatra 2000; Koutsouris and Omodei Zorini 2000; Cristóvão and Omodei Zorini 2003; Cristóvão 2004; Langeveld and Röling 2006; Dedieu and Zasser-Bedoya 2008; Darnhofer and Grötzer 2010). Timely, because the European IFSA is about to hold its 10th biennial Symposium, and after 20 years of research, it would be good to assess where we are at. Timely, because after 20 years, the first generation of European farming systems researchers, those who brought Farming Systems Research to Europe and initiated further developments, are about to retire. We want to make sure that their insights, their reflections on the evolution of Farming Systems Research and their ‘lessons learned’ could be passed on to the next generation of researchers. Although history often repeats itself, and some lessons can only be learned by actually going through the learning process, building on insights from past experience might enable us to avoid wandering down blind alleys. Timely also, because we strongly feel that the systemic, interdisciplinary and participatory approaches that form the core of Farming Systems Research have much to offer to rural areas in these turbulent and uncertain times.

The focus of the book is decidedly *European*, as demonstrated by the topics of research, the context of case studies, and also by the authors, which come from 12 European countries. But we do not work in isolation, and these international links are shown by collaborations with authors from the USA, New Zealand and Australia. With this focus on Europe we wanted to clearly demonstrate that Farming Systems Research has definitely outgrown its roots, which were primarily in developing country contexts. Although its roots are clearly there, as well as in Australia,<sup>3</sup> Farming Systems Research has spread to Europe and developed its own flavour here, being an important approach within research on rural areas. Although it can be argued that this kind of research is most strongly rooted in France (especially the INRA-SAD, the department ‘Sciences for Action and Development’ of the National Institute of Agronomic Research, see Bonnemaire et al. 2000) and the Netherlands (esp. Wageningen University), there are clearly strong proponents of the approach all over Europe, as the geographical spread of the authors shows. But despite its European focus, we are convinced that the content of the book is just as relevant for researchers in other contexts. Even if farming in Europe takes place in a specific context (e.g. the predominance of family farms, the Common Agricultural Policy, the recognition of the multifunctional nature of farming), the lessons drawn in the chapters of this book are applicable to many rural areas worldwide.

While our ambition is to present a comprehensive overview of Farming Systems Research, we acknowledge that it is difficult to do justice to the wealth of knowledge

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<sup>2</sup>The full-text of most proceedings can be downloaded from: [www.ifsa-europe.org](http://www.ifsa-europe.org)

<sup>3</sup>For an overview of the very insightful work done at Hawkesbury Agricultural College (now part of the University of Western Sydney), see the six papers included in the special issue of *Systems Research and Behavioral Science* 22(2): 105–164, which was published in 2005.

and insights that have been developed over the last 20 years. However, our aim is to raise the interest of the reader enough to encourage him or her to further explore farming from a systemic viewpoint, understanding research as a participatory co-learning endeavour, rather than just a producer of knowledge.

## Structure of the book

The ambition of the book is threefold: to retrace the emergence and development of Farming Systems Research in Europe, to summarise the state of the art for key areas of research, and to provide an outlook on new explorations, especially those tackling the dynamic nature of farming systems. These are the three parts of the book.

*Part I* includes five chapters that aim to clarify what Farming Systems in Europe is, and how it came about. Chapter 1 discusses the distinguishing characteristics of Farming Systems Research and the epistemological challenges that a farming systems researcher faces. Chapter 2 retraces the origins of the European IFSA and analyses how the topics of the IFSA symposia have changed as a response to emerging research issues. Chapter 3 highlights the ‘lessons learned’ from some early experiences of Farming Systems Research in Africa, and how they may inform current practices. Chapter 4 highlights the diversity of the community. Finally, Chap. 5 reviews some of the methodological themes linked to Farming Systems Research.

*Part II* summarises the state of the art on a range of issues: the growing importance of the ethical dimension of farming (Chap. 6), what it means to practice systems research (Chap. 7), which learning theories apply in the context of farming systems (Chaps. 8 and 9), how extension systems are conceptualised (Chap. 10), local agri-food systems (Chap. 11), the inclusion of the landscape in Farming Systems Research (Chap. 12), the use of simulation models (Chap. 13), and how the environmental impact of farming is taken into account (Chap. 14).

*Part III* focuses on approaches that attempt to deepen the understanding of ‘systems’ within Farming Systems Research. These six chapters highlight how it is widening its perspective from a (static) description of how and why a system functions, towards understanding processes. Indeed, farming systems are neither static entities nor stable structures, but are in an ongoing process of becoming, driven by internal dynamics, as well as being involved in a co-evolutionary dance with their natural, economic and social environment. Chapter 15 looks into complexity and draws parallels to the dynamic behaviours of farming systems; Chap. 16 assesses how farmers keep their farms flexible to respond to change; Chap. 17 provides insights from social systems theory; Chap. 18 gives an overview of how farming systems can be designed; Chap. 19 applies the multi-level perspective within transition studies to farming systems; and finally, Chap. 20 summarises the evolution of systems approaches to agricultural innovation.

## **An invitation to join the community**

With this book we would also like to extend an open invitation to join the community of farming systems researchers. As the chapters of this book show, researchers who are engaged in Farming Systems Research tend to come from a broad variety of disciplinary and institutional backgrounds. The core function of the biennial Symposia of the European Group of the IFSA is to further the discussion and exchanges between the different perspectives. The IFSA is characterised by an openness and genuine interest for understanding the rationale of these various research approaches. The IFSA Symposia are designed to be inclusive, i.e. open to all who are researching issues linked to farming at various scales, from various perspectives, methods or disciplinary backgrounds. The underlying conviction is that there is no one approach that is ‘better’ and no one theory that will ‘explain it all’, but that the diversity in the approaches and the dialogue between researchers – and practitioners – is what enables a comprehensive understanding of the observed phenomena and an effective design of participatory processes. This dialogue will help generate novel insights, thus enabling more relevant and useful research results.

## **Thank You!**

We happily take the opportunity to extend a heartfelt “Thank you!” to all who have made this book possible. That is first of all the authors who, despite their busy schedules and heavy workloads, have taken the time to write a chapter to summarise the state of the art and provide avenues for future research. We also thank Simon Kneebone for his delightful and incisive cartoons. They make the people - who are at the centre of farming systems - visible. They also allow us to convey key messages, while also being open to interpretation, thus highlighting the constructed nature of our understanding. We are so very grateful to Elin Gibbon for taking the time to carefully edit the chapters, untangling many a convoluted sentence and allowing the authors’ messages to flow more easily.

We would like to express our gratitude to those who have worked to bring Farming Systems Research to Europe and initiating the European IFSA: Jacques Brossier, Barry Dent, John Farrington, Bernard Hubert, Janice Jiggins, Murray McGregor, Didier Pillot and the late Michel Sebillotte.

We also would like to thank all those who, over the last 20 years, have taken it upon themselves to organise the European IFSA Symposia, thus offering farming systems researchers the opportunity to meet, to discuss, to critique, and above all—to learn from each other.

We hope this book will serve as an inspiration for all those who seek a ‘different’ approach to research, one that takes the role of human subjectivities and perceptions seriously, one that gives voice to farmers, one that emphasises participation and



co-learning processes, one that focuses on interactions between the elements and how they explain the behaviour of the whole, one that allows to capture interdependencies and their dynamics.

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