

PhD Course

Systems Thinking in Practice (STiP) in PhD Research How to contribute to addressing challenges faced by farming systems



8th to 14th April 2022 (including 5 days of IFSA conference)
in Évora, Portugal

Objectives

Research has a key role to play in appreciating and identifying ways to address how farming systems are dealing with the impacts of climate change and resource challenges. Farming Systems Research uses systems thinking to focus on a particular system of interest, to make relevant connections, to work with multiple stakeholders, and to contextualize research activities without becoming overwhelmed by complexity and uncertainty. Within PhD research it can be challenging to identify ways to address the complex and multifaceted issues of social justice, environmental sustainability, and economic empowerment in relation to the production, distribution and consumption of food and fibre. However, enhancing rural livelihoods and understanding the influence of producer-consumer linkages are central to the experience of the IFSA community. The purpose of this course is to help you, the PhD student, develop your STiP skills by contextualizing your research, by making connections among issues using systems thinking, and by improving your ability to work both strategically and purposefully towards transformations.

Through joining this course you will:

- gain an overview of the intellectual traditions of Farming Systems Research and make links to the history of IFSA
- strengthen your research through developing your understanding of systems theories and methodologies
- have the opportunity to reflect on strengths and weaknesses of different systems approaches and methodologies in relation to your own PhD research
- get added value from your participation in the conference at the Institute of Mediterranean Agricultural and Environmental Sciences in Évora by becoming part of a parallel critical learning systems community
- critically review potential contributions of your research to help meet farming systems challenges, including climate change and resource challenges
- develop an appreciation of multiple perspectives on contemporary issues across multiple disciplines
- build and strengthen your personal networks within the research community.



Process and course design

The course will be integrated with the 14th European IFSA Conference and draw on the gathering of specialists and researchers within this field. The researchers who will attend the conference (<http://www.ifsa2022.uevora.pt/>) with you are resources you are welcome to tap, e.g. by engaging in conversations with them to learn more about their experiences with using systems theories and methods in their research.

The course design draws on tried and tested ways of experiential learning. The course will be grounded in examples, including your own and other students' PhD work. An on-line platform (learn.boku.ac.at) will be used for uploading your assignments and for discussions between participants before, during, and after the conference.

1. *Before coming to Évora, you have to:*
 - a. Read the papers uploaded in the on-line platform (see list on p. 4, pdfs will be provided on-line). These papers were selected to give you an overview of systems thinking in the context of farming. We suggest you start off by scanning all the readings and make a plan for how you will spend your allocated 24 hours (see p. 5). Reading speeds will vary and the time needed for each reading can depend on a range of factors, including familiarity with the concepts and language and personal interests. You should read critically and may choose to spend more time on some readings than others. We recommend keeping a few notes (or a table) to record key points you may want to remember and/or questions that occur to you as you read. The reading will help you reflect on your own approach to systems thinking (which will be useful for tasks b and c) as well as ensure that all participants are familiar with 'the basics' thus ensuring constructive discussions in Évora.
 - b. Explore your personal history of relevance to your research and to draw a trajectory diagram on an A3-sized paper. Please refer to the handout on the on-line platform which contains an example of a trajectory diagram and some instructions on how to develop it. You will use this diagram to communicate with other participants in the course about your perspective, so please take your original with you to Évora. Please scan and upload your diagram by 1 March 2022.
 - c. Write one or two paragraphs reflecting on your use of system theories and practices (and/or cybernetic or complexity theories). Write about the rationale you have followed, or would follow, in making a choice to include (or not) systems theories in your PhD research. Consider where, if at all, your use of systems theories might appear on your trajectory diagram. Add it into your diagram if you think it is relevant, perhaps highlighting it or using a different colour. Please upload your reflections by 1 March 2022.
 - d. Prepare a A1-sized poster of the tools and methods you have used or plan to use in your research. Upload your poster on the on-line platform by 1 March 2022. We will bring printed versions to Evora and use them in the 'Market place of methods'. If you prefer, instead of making a poster, you can bring an evocative object to Evora. However, there won't be time for e.g. a PowerPoint presentation.



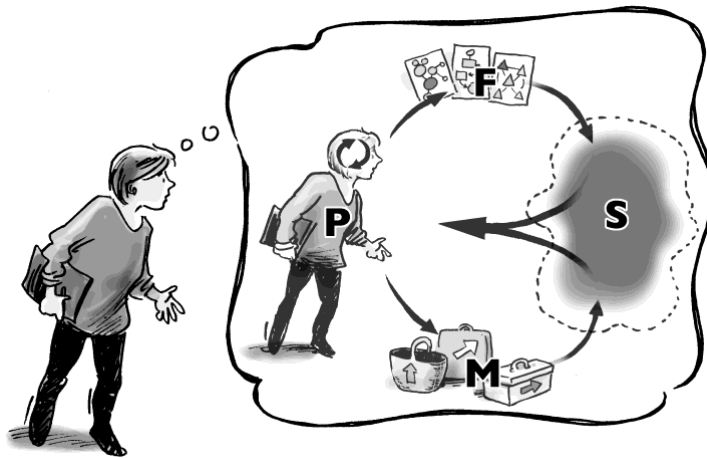
- e. There will be opportunity on the first day for you to present your PhD research in a very short and informal way to other participants. You can be as spontaneous as you want, so any preparation is optional.
2. *In Évora, before the start of the IFSA conference, the course will be offered in a workshop format consisting of a mixture of lecture inputs, group work, and student presentations (see schedule below). This part will start on Friday 8th April at 09:00 hrs and finish on Sunday 10th April at 15:00 hrs, i.e. just before the opening and registration for the IFSA conference starts.*
 3. *During the IFSA conference you will attend workshops of your own choosing. As part of the course, you will also have two evening sessions that will provide an opportunity for joint reflection and feedback as the conference progresses. You will work as part of a group with other students to provide feedback to the conference at the IFSA2022 closing session on Thursday 14th April.*
 4. *Right after the closing session, you will work to recapitulate, and to reflect on possible improvements of your own PhD study design, or your future research trajectory, linking it to systems thinking in practice. The course will end by 19:00 hrs on Thursday 14th April.*

Outline of the planned course schedule

	Morning (starts at 9:00 hrs)	Afternoon
Fri. 8 th	Sharing trajectory diagrams Working as a critical social learning system	PFMS-Research practice and systems lineages Informal exchange about your PhD research (end: 18:00 hrs)
Sat. 9 th	Farm visit: Identifying emerging issues	Presenting the insights from the farm visit Contextualizing yourself and your research using systems diagrams (end: 17:00 hrs)
Sun. 10 th	Marketplace of methods and tools	Groups to decide what they want to focus on and how they will proceed (end: 15:00 hrs)
Mon. 11 th		Groups meet for reflection session (18:00 – 19:30 hrs)
Wed. 13 th		Groups meet for reflection session (18:00 – 19:30 hrs)
Thur. 14 th		Groups present at closing plenary (14:00 – 14:45 hrs) Final debriefing (17:15 – 19:00 hrs)

When planning your travel and accommodation, take into consideration that to successfully complete the PhD course, you need to:

- arrive on 7th April (or earlier) in Évora, as the course will start at 9:00 hrs on 8th April.
- leave on 15th April (or later), as we will work until 19:00 hrs on 16th April.



In the PhD course, will be building on the PFMS framework:

During the course you, as a research practitioner (**P**) will learn to use various conceptual frameworks (**F**) and methods (**M**) to assess your system of interest (**S**). While doing so, you will reflect on your own practice.

Chapters and papers to read before coming to Evora

Chapters from the book '*Farming Systems Research into the 21st century - The new dynamic*' (2012)

- Darnhofer, I., D. Gibbon and B. Dedieu. Farming Systems Research, an approach to inquiry. Chapter 1
- Gibbon, D. Methodological themes in Farming Systems Research. Chapter 5
- Bawden, R. How should we farm? The ethical dimension. Chapter 6
- Ison, R. Making the systems in Farming Systems Research effective. Chapter 7

Bawden, R. (1991). Towards action research systems. In: O. Zuber-Skerritt (ed.) *Action research for change and development*. Brookfield: Aldershot, pp. 10-35.

Bawden, R. (1995). On the systems dimension in FSR. *Journal for Farming Systems Research-Extension* 5(2): 1-18.

Bawden, R. (1997). The community challenge: The learning response. Invited Plenary Paper.

Bawden, R. (2007) Pedagogies for persistence: cognitive challenges and collective competency development. *Int. Journal of Innovation and Sustainable Development* 2(3/4): 299-314. [DOI: 10.1504/IJISD.2007.017941](https://doi.org/10.1504/IJISD.2007.017941)

Blackmore, C., N. Sriskandarajah and R. Ison (2018). Developing learning systems for addressing uncertainty in farming, food and environment: what has changed in recent times? *Int. Journal of Agricultural Extension* 03-15. [Weblink](#)

Ison, R. (2017). Making choices about situations and systems. Chapter 3 in: *Systems practice: How to act*. Dordrecht: Springer

Sriskandarajah, N., N. Givá and H.P. Hansen (2016). Bridging divides through spaces of change. Action research for cultivating the commons in human-inhabited protected areas in Nicaragua and Mozambique. In: H.P. Hansen, B.S. Nielsen, N. Sriskandarajah, E. Gunnarsson (eds) *Commons, Sustainability, Democratization. Action Research and the Basic Renewal of Society*. New York: Routledge



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Books on systems thinking for those who want to go further...

- Blackmore, Chris (Ed.) (2010). [Social learning systems and communities of practice](#). Springer: London.
- Darnhofer, Ika, David Gibbon and Benoit Dedieu (2012). [The farming systems approach into the 21st century: The new dynamic](#). Springer: Dordrecht.
- Ison, Ray (2017). [Systems practice: How to act in situations of uncertainty and complexity in a climate-change world](#). Springer: London.
- Ramage, Manus and Karen Shipp (2009). [Systems thinkers](#). Springer: London.
- Reynolds, Martin and Sue Holwell (2010). [Systems approaches to managing change: A practical guide](#). Springer: London.

Course assessment

As you are aware, the course covers 4 ECTS. To receive the course certificate that will be issued by Aarhus University, you need to complete all four essential components:

- Preparatory reading, and pre-course assignments (incl. uploads by 1 March): 24 hours
- Pre-symposium intensive course (Fri. 8 April – Sun. 10 April): 20 hours
- Attendance at the symposium and integrated systemic inquiry (11-14 April): 32 hours
- Closing plenary and post-symposium session (14 April): 4 hours

Contact

For all course-related matters, please contact: Ika Darnhofer (ika.darnhofer@boku.ac.at)

Core team designing the course and/or presenting in Évora

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[Teresa Pinto Correia](#), Professor, University of Évora, Portugal

[Nadarajah Sriskandarajah](#), Professor Emeritus, Swedish University of Agricultural Sciences, Sweden