

## **PPS-50403 Capita Selecta Plant Production Systems 2015- 2016**

### **The Future of Food: Environmental Sustainability**

#### The value of systems thinking

Teachers: Prof Dr I.J.M. de Boer, Dr G. van de Ven, Prof Dr C. Kroeze, Prof Dr M. van Ittersum, and Dr E.A.M. Bokkers (examiner and contact person: eddie.bokkers@wur.nl).

**Credits: 3.00 ECTS**

**Language of instruction:**

English

**Assumed knowledge on:**

Not applicable

**Contents**

Understanding and working with the complexity of sustainable food production systems requires training in different disciplines and an approach that can address this complexity at the system level. This course enables participants to apply the principles of a systems approach to food production systems with a focus on environmental sustainability. We analyze production systems at both ends of the spectrum: highly productive systems with relatively high inputs and emissions to the environment, and low productive systems with low input use and depletion of soil fertility. Crop-livestock interaction is a focal point.

The course includes an 1) introduction to the complexity of food production systems, 2) introduction to systems thinking, 3) analysis and comparison of the productivity of food production systems and the environmental issues, and 4) the assessment of environmental sustainability using indicators. This last topic allows students to integrate topics of previous modules.

**Learning outcomes**

After successful completion of this course a student is expected to be able to:

1. Understand the complexity and diversity of food production systems.
2. Use a systems approach in the context of food production systems.
3. Understand the principles of system analysis and how it can be applied in the context of food production systems
4. Understand evaluation methods for environmental impact of food production systems in different agro-ecological and socio-economic contexts and at different levels (e.g. farm, regional and global).
5. Evaluate strong and weak points of different food production systems in terms of environmental sustainability.

**Program**

The course is offered as an online course and is open from April 1 until the exam. The course contains no scheduled activities, students can follow the course anytime between April 1 and June 20, 2016 The course is facilitated by moderators and there is limited online contact with the lecturers. It is meant for MSc-1 students who are interested in the topic of the course and lack sufficient knowledge in integrating disciplines and/or systems thinking analysis from any study program within Wageningen University.

The course has 6 modules. Every module is introduced by one of the lecturers in a video presentation. In this introduction the lecturer explains the position of the topic in relation to the overall course, as well what is expected from the students in this module. Subsequently, students will explore the topic through (a set of) animations, video recordings, texts, and case studies. The students can practice via assignments in each module, such as multiple choice, drag-and-drop, discussion forum, and peer review. Each module concludes with a summary-video by one of the lecturers.

**The course is ready to start from April 1 2016 onwards. Registration for the course can only be done through sending an email to the course coordinator ([eddie.bokkers@wur.nl](mailto:eddie.bokkers@wur.nl)).**

### **Examination**

The examination contains the assignments of the course (40%; minimum 5.5 on average) and a written exam (60%; minimum 5.5). The final exam will be held in week 43 (20-24 June) of the academic year (exact date will be determined later). Registration for the exam can be done only via the coordinator by sending an email to the examiner Eddie Bokkers ([eddie.bokkers@wur.nl](mailto:eddie.bokkers@wur.nl)) before June 6, 2016. A re-exam will be scheduled in August.