





EDUCATIONAL MODULE Applications in Food and Nutrition Security Analysis

In a nutshell

Applications in Food and Nutrition Security Analysis (AFNSA) is a course for students interested in food systems, food system transformation, policy, and learning and practicing with inter- and transdisciplinary research around a real-life problem.



Food 2030 focus



For whom? Educators

Created by

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This tool was developed as part of the FIT4FOOD2030 project; find this tool and many more on the FIT4FOOD2030 Knowledge Hub.

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What for?

To explore and understand the food system To work with my community on transforming the food system To train or educate people on food system transformation

How long?

#4 weeks

What will you gain from this?

After the successful completion of this educational module, the student...

- has an understanding of the term 'food systems' and the complexity around food systems (transformation);
- can explain the need for inter/transdisciplinary research in Food and Nutrition Security (FNS) Studies;
- is able to critically reflect on choices of design in inter/transdisciplinary research (in the field of FNS Studies);
- is able to conduct an inter/transdisciplinary project in relation to FNS. The student:
 - is able to find and integrate different relevant literature sources;
 - is able to contribute at an academic level to the execution of the project related to his/her own disciplinary background;
 - is able to conduct transformative interviews that contribute to the research project;
 - is able to integrate qualitative data with data from literature review and/or analysis of secondary quantitative data;
 - is able to set up valid lines of argumentation;
 - is able to translate research findings into evidence informed policy advice.
- The student has improved his/her capacity as a professional. The student:
 - can work effectively together with other students in a project team;
 - is able to coordinate and plan an inter/transdisciplinary project in such a way that deadlines are kept and the quality of the products are in relation with time invested;
 - is able to highlight the results of and defend the

APPLICATIONS OF FOOD AND NUTRITION SECURITY ANALYSIS

Introduction to the module

This module was developed as part of the EU-project FIT4FOOD2030. To stimulate the transformation towards a future-proof food system it is crucial to develop competences (knowledge, attitude and skills). This module is targeted at undergraduate students who are interested to learn more about food systems and food system transformation. This module is the result of a transformation of the existing undergraduate course called 'Applications in Food and Nutrition Security Analysis'. This course was transformed in co-creation with stakeholders from the Metropolitan Region Amsterdam (MRA), such as people working within local food production initiatives and policy makers working on food system transformation. During conversations with those different stakeholders, it was investigated what kind of competences they think are crucial in order to contribute to food system transformation. Moreover, academic experts working in fields related to (food) system transformation were consulted with regard to (didactic) strategies to stimulate the acquisition of key competences such as systems thinking.

Content

Food and nutrition security (FNS) is a key priority in development cooperation and central to broader debates on environmental and social sustainability. FNS not only focuses on building resilience to food crises and ensuring that no one is left hungry, it also battles the alarming increase in obesity globally. Malnutrition is increasingly problematic and the result of a complex system of factors, including economic, agro-ecological, technical, health and cultural aspects. Furthermore, food systems are linked to severe and persistent environmental problems, such as biodiversity loss, greenhouse gas emissions and resource scarcity. Resolving the complex problem of FNS therefore requires an inter- and transdisciplinary approach, in which actors from different disciplines and with different backgrounds, including the people who are malnourished, cooperate.

Inter/transdisciplinarity is an emerging discipline in which qualitative research approaches and analytical methods are developed to connect relevant parts of different disciplines and integrate different types of knowledge (e.g. knowledge recommendations proposed in the inter/transdisciplinary research in a (video-based) presentation;

- is able to **write a policy advisory report** that is coherent and covers the research project;
- is able to critically reflect on his/her own capacities and role within the group and his/her learning process during the research project.

The above-mentioned learning objectives are linked to several **competences** (knowledge, skills and attitude) that were identified as important based on stakeholder consultations and (grey) literature, including:

- Food systems approach competences: analytical thinking, systems (holistic) thinking
- Multi-stakeholder approach/network building competences: social intelligence, self-awareness, multiperspective, communication skills
- Research and Innovation system competences: navigating complexity or wickedness, openness and transparency, pro-active, critical thinking, inter- and transdisciplinary collaboration
- Responsible Research and Innovation competences: involving stakeholders in research data collection/analysis, participatory ability

The above competences will be stimulated by the combination of lectures, workgroups and interdisciplinary project work on a reallife problem in collaboration with a commissioner. from academics, policy makers, citizens, etc.) to solve complex problems such as FNS. A transdisciplinary approach is often taken in formulating an evidenceinformed policy advice to address specific problems. Based on the analysis and integration of the positions, perspectives and experiences of different actors, sometimes combined with quantitative data, advice is given on what intervention would be most effective in resolving the problem under study.

This module will focus on the competences (knowledge, attitude and skills) necessary to conduct such a inter/transdisciplinary approach in formulating an evidence-informed policy advice. To this end, this module introduces students into the current theories on transdisciplinary research in general and the need for a transdisciplinary approach in FNS Studies specifically. It also highlights main challenges around inter/transdisciplinary research. Moreover, this module offers an introduction to semi-structured transformative interviews as a research method to study complex problems and opportunities for intervention. During several lectures and workgroups, designing, conducting and analysing interviews will be discussed and practiced with.

Students will further train other professional skills such as managing projects and collaborative team work. From the very first day, students are part of a project team that will work on a project to develop an evidence informed policy advise to address a specific problem in FNS. **Students are confronted with a real policy problem from an external commissioning institution.** Within four weeks they will collect data by literature review and (transformative) interviews (and potentially by analysis of databases) to conduct an inter/transdisciplinary analysis on the basis of which they provide an advice. Results of the research are presented in an advisory report and a (video) presentation for the commissioner and peers.

Working on a real-life problem

Working on a real-world problem which is commissioned by an external institution has added value on academic, professional and personal level. An important aspect is that students deepen their understanding of scientific theories by linking theory and practice. This of course requires an appropriate link between the theories that are central within the module and the real-world project. Since the project needs to meet the expectations of the commissioner as well as the academic objectives of the module, students learn to formulate a problem statement and main research question in consultation with their commissioner. On professional and personal level students learn to improve their communication skills and might discover new interests. Furthermore, working on a realworld problem might be inspiring for students and/or increase their motivation, since they could immediately experience the value of their work.

Focus and commissioning institution

AFNSA could either have a European and/or city focus, an international focus, or a combination of those. However, working with a commissioner from the city or community is advantageous since this makes it possible for students to directly engage with the commissioner and their relevant stakeholders. Especially in the context of transdisciplinary research direct engagement with stakeholders is beneficial. This is also in line with the idea of Community Service Learning (CSL, click here for more information), which is a form of education in which students work on existing societal issues by using their academic skills which is not only beneficial for students and the academic institution itself but also for the specific (international) community. *Appendix 1* includes the project proposal that was used within this course.

Transdisciplinarity

Within this module, teams of 5 to 10 students collect data by literature review and semi-structured (transformative) interviews (and analysis of databases) to conduct an inter/transdisciplinary analysis on the basis of which they provide a policy advice to their external commissioner (see **Appendix 2** for an overview of the content of the report). This means that students need to reach an interdisciplinary synthesis of the collected information in consultation with their external commissioner, Since AFNSA is designed as a four-week course it is unlikely that the research project has a 'high' level of transdisciplinarity, characterized by e.g. cocreation of knowledge, a mutual learning process, an emergent design and an explicit integration of different types of knowledge. However, attention is paid to these transdisciplinary features in several ways via:

- Engagement with at least three different types of stakeholders relevant to their project to be able to get a deeper understanding of the existence of different perspectives regarding the real-world problem;
- A reflection on problem statement and research question together with these stakeholders;
- A training on **transformative interviewing** (rather than basic interviewing only);
- An extended member check to increase stakeholder participation during this phase (data analysis phase) of the project and;
- A focus on transdisciplinary research methods and knowledge co-creation during one of the workgroups.

Thematic area

Food systems: all theme's related to it

Target audience

Undergraduate students

Age of participants

17 – 25 years old

Number of participants

Preferably around 20

Number of facilitators

1 or 2

Prior knowledge required for participation

The educator or tutor needs to have an understanding of major food system related problems and challenges around food system transformation. It is also important to have some understanding about the importance of systems thinking for addressing complex issues such as food system transformation.

GETTING PREPARED

Scenario

AFNSA is a course for students interested in food systems, policy and learning and practicing with inter- and transdisciplinary research. The module is designed as a four-week course and consists of lectures, project work with workgroups, training sessions and a video-presentation. In addition, students will practice with discussing and summarizing relevant scientific articles using the CARQ-method (see Chapter 5). The total study time is \pm 160 hours. The different elements have approximately the following study time:

Module element	Hours	Total hours
Lectures	5 x 2 h	10
Training sessions	1 x 2 h	2
Workgroups	8 x 2 h 8 x 2,5 h	16 a 20
Project work	-	120
CARQ assignment	6 x 0,5 h	3

LECTURES

The module consists of five lectures (all compulsory) in which different models and theories regarding inter/transdisciplinarity in FNS are discussed. Below is a brief overview of an exemplary set of lectures, including their main focus.

Introduction lecture (week 1)

In this lecture students are briefly introduced to the topic of FNS and FNS as a complex problem, as well as to the term 'food system' and 'inter-and transdisciplinary research'. After this, learning objectives, work forms and deadlines of the module are showed to the students. Finally, students are introduced to the real-life projects that are chosen for this module. At the end of the lecture students will choose which real-life project they wish to work on for the coming four weeks.

Lecture systems approach & transdisciplinarity (week 1)

This lecture zooms in on a food systems approach and transdisciplinarity for food system transformation, meaning an introduction to systems thinking (and how it relates to their own project), different types of research and the need for transdisciplinary research processes to stimulate transformation.

In advance of this lecture students are supposed to (at least) read the following:

- Bunders J.F., Broerse J.E., Keil F., Pohl C., Scholz R.W., Zweekhorst M.B. (2010) How can transdisciplinary research contribute to knowledge democracy? In: in 't Veld R. (eds) Knowledge Democracy. Springer, Berlin, Heidelberg. https://link.springer.com/chapter/10.1007%2F978-3-642-11381-9_11?Ll=true
- Hammond, R.A. & Dubé, L. (2012). A systems science perspective and transdisciplinary models for food and nutrition security. *PNAS*, 109 (31); 12356-12363
- Gill et al. (2018). A Systems Approach to Research and Innovation for Food System Transformation. Policy Brief 1, published by FIT4FOOD2030.
- Parsons, K., Hawkes, C., Wells, R. (2019). What is the food system? A Food policy perspective. In: Rethinking Food Policy: A Fresh Approach to Policy and Practice. London: Centre for Food Policy.
- Ruben, R., Verhagen, J., & Plaisier, C. (2019). The Challenge of Food Systems Research: What Difference Does it Make? *Sustainability*, 11(1), 171.

Lecture in-depth interviewing (week 1)

This lecture introduces students to qualitative research methods, in particular in-depth interviewing. While this lecture will primarily focus on interviewing as a research method in general, the training related to this lecture zooms in on **transformative interviewing** in particular.

In advance of this lecture students are supposed to (at least) read the following:

- Gray, D.E. (2013). Doing Research in the Real World. SAGE.
- Chapter 7. Research design qualitative methods
- Chapter 8. Research design: Mixed Methods
- Chapter 15. Interviewing

Lecture qualitative data analysis (week 1)

This lecture introduces students to the basics of qualitative data analysis, including an explanation of deductive and inductive research, different types of data analysis (e.g. content, thematic, grounded) and coding (e.g. axial, open, selective coding), and approaches to increase research validity.

In advance of this lecture students are supposed to (at least) read the following:

• Gray, D.E. (2013). *Doing Research in the Real World. SAGE*. Chapter 23. Analysing and Presenting Qualitative Data

(guest) Lecture spatial context of food and health (week 2)

The spatial context of food and health is a highly relevant topic within FNS studies, since the food system has several spatial dimensions. This lecture aims to stimulate the geographical imagination of students. Furthermore, it aims to inspire students to integrate quantitative aspects in their own research project (to make it mixed methods), by briefly introducing students to the importance of spatial analysis and the different research approaches related to such an analysis.

In advance of the guest lecture students formulate two to three questions in duos. To be able to formulate these questions, students are provided with an abstract of the presentation in advance and/or specific literature (see the box below). Students also need to do some desk research, focusing on the organization the guest lecturer works at, the function and role of this guest lecturer and the issues he or she is going to cover. Students will send these questions to their tutor no later than 1 hour before the guest lecture.

In advance of this lecture students are supposed to (at least) read the following:

 Verburg, P.H., Mertz, O., Karl-Heinz, E., Haberl, H., & Wu, W. (2013). Land system change and food security: towards multi-scale land system solutions. *Environmental Sustainability*. 5(5), 494-502. <u>https://doi.org/10.1016/j.cosust.2013.07.003</u>

Alternatives

There are of course several alternative subjects for this guest lecture on the spatial context of food and health. For instance, a guest lecture on **sustainable (urban) food systems planning** would be highly interesting and suitable within this module. Such a lecture could focus on **foodscapes**, defined as places and spaces where food is produced, processed, acquired, distributed, consumed and the waste processed¹. The term 'foodscape' is increasingly being used within several disciplines, such as spatial design and planning, health promotion, and food studies. It is used to describe our food environments and assess the impact of food choices and behaviour. Since our food systems could be seen as **complex systems**, a lecture on **transition theory, system innovation and/or social practice theory** would be highly relevant as well².

Another possibility would be to prepare a guest lecture about the EU-project FIT4FOOD2030 itself. This will be inspiring, because it gives the possibility to provide real-life examples of how food system transformation is tried to stimulate in practice.

¹ Wiskerke, H. & Verhoeven, S. (2018). Flourishing foodscapes. Design for city-region food systems. Valiz.

² Spaargaren, G., Oosterveer, P. & Loeber, A. (2012). Food Practices in Transition. Changing Food Consumption, Retail and Production in the Age of Reflexive Modernity. Routledge.

WORKGROUPS

Workgroups of this module are guided by a tutor. This tutor could be a junior researcher, PhD student or post-doc. The tutor is not the one making the decisions concerning the research project but will rather advice and support the students in making those decisions. This chapter includes an overview of the content of the workgroups. Each sub-chapter below starts with an overview of workgroup elements (assignments and/or activities), duration of these elements and related competences.

Workgroup 1 (week 1)

The objective of this first workgroup is to let students get to know each other, to discuss the importance of effective team meetings and to give a more detailed explanation of the real-life case they are going to work on for the coming weeks. Two-third of this workgroup is dedicated to personal development and competence building, which is important to start with at the beginning of this module.

Workgroup element	Duration
Getting to know each other	15 – 20 min
In-depth introduction to the real-life project	10 min
Effective team meetings	10 min
Team role in relation to educational background:	115 min
personal development and Belbin	

Getting to know each other

This introduction round is meant to let student get to know each other in a fun way. It is not necessary to already ask for their experiences regarding inter- and transdisciplinary research approaches (this will be part of the last assignment of the workgroup; *Team role in relation to educational background: personal development and Belbin'*). Ask students to talk to their neighbours. After 5 minutes each student will introduce the person left to his/her (name, educational background, hobbies, etc.). There are of course several other ways to let student get to know each other.

In-depth introduction to the real-life project

This session is meant to give a more elaborate explanation of the real-life project. This can be done with a PowerPoint presentation, a movie, and/or other materials. Make sure that students understand the project/problem description correctly. Let them brainstorm on a problem statement and research question. Also, stimulate them to critically reflect on what is written down in the assignment: why is this a problem? Etc. This is important since the assignment often contains a normative standpoint.

Effective team meetings

Since this is in intensive module it is important to tell students about the need for a strict planning during the first workgroup.

Your project team embodies a working force of about 7 x 1 months. However, you will also lose time in project meetings to discuss results, analysis, interview design, etc. Your main challenge is to gain time by efficiently organized project team meetings. This teamwork has to be learned, and is one of the objectives of the module. Therefore, specific attention is paid to working in a project team and team building. The roles of chairman and secretary of the meeting will for example rotate, so that you all get the opportunity to train the necessary skills. All project teams have a coach that guides and monitors the project work. You will have a meeting with your coach each week on a fixed moment in time. However, to train your skills in project management and taking ownership, you as a group will be responsible for organizing extra meetings with your coach if necessary/needed. Some flexibility is therefore required. Overall, you will meet up with your coach two-three times a week.

The project resembles a "real-world" policy job. This implies working hours from 9.00 - 17.00. You are requested not to come late to the lectures and workshops. The remainder of the time you as a team are responsible for your activities. During the first project meeting, you will plan your time management and roles. If you have an important appointment that has been planned by an external organisation (e.g. exam for driver license, hospital visit) or is by definition not your responsibility of planning (e.g. funeral, wedding, etc.) discuss with your colleagues in the team how you will compensate that time. Remember, you are jointly responsible for the end product. Inform your coach about the arrangement you agreed on, and in case of illness or other unplanned absences, please inform your project team members, your coach and the module coordinator.

Team role in relation to educational background: personal development and Belbin

In this session, students extensively explore their default or most preferred role in team work through the (well-known) Belbin test. In an additional reflection exercise, students explore how their background education (Bachelor/Major) may have contributed to their Belbin outcome in addition to their personal traits. In this way insight is generated into whether students already have experience with inter- and/or transdisciplinary research and what kind of ontological and epistemological perspective they have. Also, students learn to analyse their own strengths and weaknesses and based on that create a personal development plan for expanding their team work role repertoire in line with the Belbin typology.

Preparation

Ask students to do the Belbin test before this session (e.g. via https://www.123test.com/team-roles-test/) and bring their result to the session.

Outline of the session

- 1. (15 min) Engage in a plenary conversation with the group:
- Try to unravel which students discovered that they are e.g. 'plants'; what commonalities can they identify e.g. in working on a (new) project?
- Walk through all the roles (see the list below in Figure 1).
- Try to emphasize that each role has strengths and weaknesses. In case students are unhappy with their outcome, emphasize that the outcome may differ in each project/context/setting, and may change over lifetime. The outcome only says something about your most preferred role. Multiple roles may apply to one person, and of course people are not to be put in boxes, but sometimes a box-like division does help in pin pointing important strengths, weaknesses and personal traits.
- 2. (20 min) Reflect with the students on the following questions:
- What was taught to you about the purpose of science?

Probing questions: 'In how far were you educated to discover 'the truth'?' and 'Is there a ONE AND THE ONLY truth?'

- How did teachers in your Bachelor (Major) frame the relationship between science and society? Probing questions: 'In how far were you educated to be 'objective'?', 'Is it possible to be objective?', 'Where does subjectivity come in when you perform scientific research?', 'Is it possible to be a 'neutral' scientist?', 'In how far were you taught to stay away from values, emotions and (stakeholder) interests when doing research?'
- In how far was it common in your educational background to interact with societal actors during the research process?'
- If you would not limit science-society interaction to communication by the end of a project (e.g. a public presentation about your findings), when in the scientific research process do you see opportunities to interact with society (including citizens, but also public and/or private parties)? For example, in order to align or anticipate with your research to societal interests?
- In what skills were you taught to excel as a scientist?
 Probing questions: 'Was there attention for (developing) social skills?'
- 3. (15 min) Ask students (e.g. in pairs/duos or in bigger groups) to relate the answers of the discussion/dialogue held in part 2 to their Belbin outcomes. In how far do they see a particular

relationship between their background education and their Belbin outcome? In other words, in how far do they consider themselves as being framed in performing team work by their background education?

Possible examples:

- Some educational tracks teach students to completely ignore or exclude values, emotions, and societal viewpoints in doing research. Students of these tracks may be more likely (but not surely) to discover that their Belbin outcome is 'monitor' or 'specialist', being focused on facts and outcomes. Or in the contrary, students with such 'value-free science' being taught during their Bachelor that have the plant as Belbin outcome, may discover why they always felt an outlier.
- Some educational tracks teach students to collaborate with various other disciplines and/or
 professionals from 'practice'. In such projects, the insights of these collaborators are taught to be
 valuable to the research process and/or outcomes. Students of these tracks may be more likely (but
 not surely) to discover that their Belbin outcome is 'team worker', or maybe a specialist, to operate
 as a specific actor in the project.

Exchange the relationships that the duo-students identified in a plenary conversation. Unravel similarities and differences. Note that to our best knowledge, little is known about these relationships. Students and teachers will therefore need to explore the identification of these links themselves.

Team Role	Contribution	Allowable Weaknesses
Plant	Creative, imaginative, free-thinking. Generates ideas and solves difficult problems.	Ignores incidentals. Too preoccupied to communicate effectively.
Resource Investigator	Outgoing, enthusiastic, communicative. Explores opportunities and develops contacts.	Over-optimistic. Loses interest once initial enthusiasm has passed.
Co- ordinator	Mature, confident, identifies talent. Clarifies goals. Delegates effectively.	Can be seen as manipulative. Offloads own share of the work.
Shaper	Challenging, dynamic, thrives on pressure. Has the drive and courage to overcome obstacles.	Prone to provocation. Offends peoples feelings.
Monitor Evaluator	Sober, strategic and discerning. Sees all options and judges accurately.	Lacks drive and ability to inspire others. Can be overly critical.
Teamworker	Co-operative, perceptive and diplomatic. Listens and averts friction.	Indecisive in crunch situations. Avoids confrontation.
Implementer	Practical, reliable, efficient. Turns ideas into actions and organises work that needs to be done.	Somewhat inflexible. Slow to respond to new possibilities.
Completer Finisher	Painstaking, conscientious, anxious. Searches out errors. Polishes and perfects.	Inclined to worry unduly. Reluctant to delegate.
Specialist	Single-minded, self-starting, dedicated. Provides knowledge and skills in rare supply.	Contributes only on a narrow front. Dwells on technicalities.

Figure 1. Overview of the Belbin roles.

4. (20 min) Place students in their team/group and ask them to discuss the meaning of the outcome for their group composition and teamwork to be done. Ideally a team composition is based on complementary roles. However, this is not always the case, which raises possible risks (and sometimes opportunities). E.g. in case there are multiple plants in one team, there is a chance that the team aims for generating a multitude of super-creative ideas. On the other hand, there is a chance as well that the team keeps exploring new ideas, and forgets to take decisions.

With the Belbin outcome in mind, how should they divide traditional team roles among the members? Think about the chairman, secretary (minute maker), planner, information manager, (internal and/or external) communication responsible, etc.

Also give them the task to make a team work contract. Who does what and when during the project? How to deal with malfunctioning team members, etc. See an example <u>here</u> or Google 'team work contract template' (web or images).

5. (20 min) With the Belin outcomes in mind, ask students to make a personal top 5 core quality list. Skills, knowledge or attitudes that are useful in teamwork in which they (think that they) excel. Let students discuss their lists within their group.

Ask one student to share her/his list in a plenary conversation. Choose one core quality and draw a 'core quadrant' on the board, see Figure 2. Fill in the core quadrant with the students in class. The principles: if a core quality is exaggerated, it becomes a pitfall. Think about core quality 'creativity'; too much creativity can make one's work directionless (not always the case), which is then a pitfall of creativity. A pitfall, however, has a positive opposite, which results in a challenge (for the person with the identified core quality). For example, from directionless to direction-oriented. An exaggerated form of this challenge is an allergy to the person with the initial core quality. For example, extremely direction-oriented people can allow little space for creativity, which is a disaster to work with for creative people.





6. (15 min) Let students individually make the core quadrant for their full top-5 list of core qualities. Once the challenges of their core qualities are discovered, instruct them to seek a connection between their challenges and the Belbin role(s) that they were not associated with in their test outcome. Based on this, ask students to explore whether group members have a Belbin role that includes these challenges as chore quality, so that these students could regularly check in to give each other feedback during the course of the project. Instruct students to make a personal development plan based on these 'challenges' and under-explored Belbin roles. Their challenges are their personal 'points for improvement' to be practices during the (team work) project.

Training: transformative interviewing (week 1)

Please go to the other *tools for transformation* and click on the tool "Transformative Interviewing" for details on this training.

Workgroup 2 (week 1)

This workgroup builds on lecture 2 (food systems and transdisciplinarity).

Workgroup element	Duration
Research question, problem statement and the commissioners' interview	30 min
Assignment: Discussion of two video's	30 min
Introduction to the CARQ-method	15 min
Q&A and project work	45 min

Research question, problem statement and the commissioners' interview

First part of this session is meant to reflect on the problem description and research question of the students.

After this the importance of an interview with the commissioner needs to be explained. Although students received materials about the real-life societal issue, they will need additional and more in-depth information from the commissioner to be able to do the research and write the policy advice report. The interview with the commissioner will be conducted by the entire project team or two representatives of the group. The interview will be more like an informal conversation with the aim to unravel the needs and expectations of the commissioner regarding the project.

Let the students think about what questions to ask: what information do they need from the commissioner? Stress that it is also important to think about the answers the commissioner will give: with what answers are they satisfied? Again: also stimulate students to ask critical questions to the commissioner with regard to the problem statement and/or questions in the assignment.

Students will invite the commissioner themselves and will write a summary of the conversation afterwards. <u>Make sure the interview is scheduled early in the course, preferably at the end of week 1 or at the beginning of week 2.</u>

Assignment: Discussion of two videos

This assignment is aimed to discuss the need for inter- and transdisciplinarity for food system transformation.

- 1. (5 min) Show the following videos:
- <u>FIT4FOOD2030 Shaping the debate on food systems' reform with Dr. Sébastien Treyer (2:14 min)</u>
- <u>FIT4FOOD2030 Dr. Stef Bronzwaer on interdisciplinary food systems</u> (2 min)
- 2. (20 min) Engage in a plenary conversation with the group:
- Could you reflect on the videos? Any new insights? Etc.
- How does this relate to what you've read so far in literature?

Introduction to CARQ-method

From week 2 onwards students will discuss selected articles during the workgroups. Each workgroup will dedicate max. 1 hour to the CARQ-presentations and discussions. Introduce this activity in week 1, so that students can prepare.

The discussions about selected articles will be preceded by a brief presentation by one of the students (i.e., no longer than 15 minutes), following the CARQ-method, which stands for:

- **C**ore quotation (a phrase or sentence of the article that according to you presents the key message of the whole article), accompanied with the
- Argumentative structure of the article or chapter to illumine this quotation; a discussion of
- **R**elations the article has (with what you know from other contexts, with other texts discussed in the module, with non-central issues dealt with in the text, with assignments you are currently working on, with your focus group project, *et cetera*). Finally, present fellow students with
- **Q**uestions that are formulated in such fashion as to *stimulate discussion*.

Students can use a small number of slides to support their presentation, but they can also use handouts and/or use the black- or whiteboard during the discussion. After the presentation of the article a discussion with peers will follow, based on the questions that presentations end with. The presenter needs to make sure that that attention is paid to:

- 1. What the content of the article means for students following Applications in Food and Nutrition Security Analysis;
- 2. What the content of the article means for the assignment the students are working on.

The person who is/people who are in charge of the CARQ presentation act(s) as chair for the CARQ-part of the seminar, including facilitation of the discussion following the presentation. Only if necessary, the seminar coach will intervene to highlight important issues, or to deepen or structure the discussion.

The goal of discussion questions is to train students in arguing in favour and/or against a certain position they have encountered in the text at issue, such that they deepen their understanding of the text, the theories it puts forwards and the concepts it mobilizes. This can be done in many different ways. For instance, one can ask questions of the following structure:

- *"Based on the argumentation that we have just presented, how would [the author of the text at issue] think about the following situation /theory/ counter argument [...elaboration...]." Or*
- "In contemporary public discourse, I have recently encountered that someone took position x; what would [the author of the text at issue] think about that?"

Questions like these concerns applications of theories or concepts encountered in their readings. Ideally, students would add their own hypothesis to questions such as these, based on their reading of the text. Specifying what makes them uncertain about this interpretation makes their contribution even stronger, as this invites an open exchange of ideas.

• "[Author of the text at issue] argues x, but [other author] argues the exact opposite. Which position is most plausible/ convincing/ relevant for our purposes/ consistent/...?"

This type of questions has much to do with *relationships*. Make sure students explain why they think this is an important question to answer.

<u>Alternative</u>

Alternatively, if it is not possible to let all students present an article based on the CARQ method, students can also write a CARQ-summary (max. 700 words) of two articles. In this case this workgroup could be used to let students work on their group assignment.

The following articles are recommended (to choose from). Or you can have a look at the 'food systems library' (Appendix 3):

• Swinburn, B.A., Kraak, V.I., Allender, A., Atkins, V.J., Baker, P.I. et al. (2019). The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission report. *The Lancet Commissions*, 393:10173, p791-846. DOI: <u>https://doi.org/10.1016/S0140-6736(18)32822-8</u>

- Béné, C., Fanzo, J.C., Haddad, L., Hawkes, C., Caron, P., et al. (2020). Five priorities to operationalize the EAT-Lancet Commission report. *Nature Food*, 1, 457-459. DOI: <u>https://doi.org/10.1038/s43016-020-0136-4</u>
- den Boer, A.C.L., Kok, K.P.W., Gill, M., Breda, J., Cahill, J. et al. (2020). Research and Innovation as a catalyst for food system transformation, *Trends in Food Science and Technology*, 107, 150-156. DOI: https://doi.org/10.1016/i.tifs.2020.09.021
- Hammond, R.A. & Dubé, L. (2012). A systems science perspective and transdisciplinary models for food and nutrition security. *PNAS*, 109 (31); 12356-12363
- Ruben, R., Verhagen, J., & Plaisier, C. (2019). The Challenge of Food Systems Research: What Difference Does it Make? *Sustainability*, 11(1), 171.
- Meynard et al. (2017). Designing coupled innovations for the sustainability transition of agri-food systems. Agricultural Systems 157: 330-339. http://dx.doi.org/10.1016/j.agsy.2016.08.002
- Ingram, J. (2011). A food systems approach to researching food security and its interactions with global environmental change. *Food Security*. 3: 417–431. DOI 10.1007/s12571-011-0149-9

Project work

Give students time to work on their project. Walk around and answer any questions.

Workgroup 3 (week 2)

Workgroup element	Duration
CARQ-presentations and discussions	60 min
Transdisciplinary research approaches	30 min
Stakeholder mapping and developing the	30 min
(transformative) interview design	
Q&A and project work	30 min

CARQ-presentations and discussions

Presentations and discussions according to the CARQ-method (see workgroup 1).

Transdisciplinary research approaches

This session is meant to zoom in on transdisciplinarity and features of transdisciplinarity such as knowledge co-creation. Lecture 2 does focus on different types of research and transdisciplinarity. However, approaches and methodologies linked to transdisciplinary research are not covered in the lecture. To be able to increase the level of transdisciplinarity of their project work it is important to zoom in on the features of this type of research during the workgroup.

Let students watch the following movies on transdisciplinarity:

- The Transdisciplinary approach <u>https://youtu.be/x5xGi9EFCSY</u> (4 min)
- Why Transdisciplinarity? <u>https://youtu.be/8iMov3PuMk4</u> (3 min)

Engage in a plenary conversation. Start with asking students to reflect on these movies. After this ask them to think about their own project: How could they increase the transdisciplinarity of their project? Which approaches or research methods do spark their interest and which of them would be appropriate for their own project (also if they would not really use these methods)? During which phases of the project? etc.

Stakeholder mapping and developing the (transformative) interview design

Start with a reflection on the interview with the commissioner: how did they experience the conversation? What did they learn? What does the conversation mean for their project? Etc. After this let students brainstorm about whom to interview: what types of stakeholders (at least three different types) are they planning to engage with and why? Let them make a **stakeholder map.** Ask questions about this map and

stimulate them to think about the stakeholders they would like to interview independently from practical reasons.

Also, let them work on their interview design based on lecture 2 (in-depth interviewing, which is one of the training).

Project work

Let student work on their project. Walk around and answer any questions.

Workgroup 4 (week 2)

Workgroup element	Duration
CARQ-presentations and discussions	60 min
Q&A and project work	60 min

CARQ-presentations and discussions

Presentations and discussions according to the CARQ-method (see workgroup 1).

Project work

Give students time to work on their project. Walk around and answer any questions.

Workgroup 5 (week 3)

Workgroup element	Duration
CARQ-presentations and discussions	60 min
Q&A and project work	60 min

CARQ-presentations and discussions

Presentations and discussions according to the CARQ-method (see workgroup 1).

Project work

Give students time to work on their project. Walk around and answer any questions.

Workgroup 6 (week 3)

Workgroup element	Duration
Giving feedback	30 min
Checking in with the commissioner	30 min
CARQ-presentations and discussions	60 min
Q&A and project work	30 min

Assignment: Giving feedback

Provide students with information on how to give feedback (*Appendix 3*) in advance of this workgroup³, and ask students to give each other feedback based on these guidelines. Also link to the personal development assignment of week 1 by asking students to read each other's personal development plan in advance. After the feedback round ask students to update their personal development plans.

³ Boud, D. (1991) Implementing Student Self-Assessment, HERDSA Green Guide 5, Campbelltown: Higher Education Research and Development Society of Australasia. McGill and Beatty (in "Action learning: A practitioner's guide", London: Kogan Page, 1994, p. 159-163) provide useful suggestions about giving effective feedback

Checking in with the commissioner

Reserve part of this workgroup to let student check in with their commissioner to investigate whether the research project is still in line with the needs and expectations of the commissioner. This can be done face-to-face or via a (teleconference) call.

CARQ-presentations and discussions

Presentations and discussions according to the CARQ-method (see workgroup 1).

Project work

Give students time to work on their project. Walk around and answer any questions.

Workgroup 7 (week 4)

Workgroup element	Duration
Explanation of extended member check	30 min
Coming back to Belbin-test and personal development plan	30 min
CARQ-presentations and discussions	60 min
Q&A and project work	30 min

Explanation of extended member check and project work

Explain the added value of an extended member check in order to increase the transdisciplinarity of the project. An extended member check means that students send their transformative interview transcripts as well as their interpretation of the transcript to the stakeholders. In this way stakeholder have the opportunity to change or add aspects to the transcript. If stakeholders are interested, they could also be invited to be engaged during the analysis phase (with e.g. developing a coding scheme).

Coming back to Belbin test and personal development plan

Ask students to pair and exchange their personal development plans. Let them 'interview' each other to stimulate critical reflection on their personal development plans.

CARQ-presentations and discussions

Presentations and discussions according to the CARQ-method (see workgroup 1).

Project work

Let students work on their project. Walk around and answer any questions.

Workgroup 8 (week 4)

Workgroup element	Duration
(Video)presentation and discussion	120 min

Video presentation and discussion

Let students present their research project, for example with a video or poster, to the commissioner(s) and other students. Stimulate critical discussion after each presentation between students and commissioner(s).

Tip: you can choose to let students discuss with their commissioner what type of end-presentation is most appropriate (video, poster, PowerPointslides, flyer, etc.). Ask students to discuss this earlier on during the process. Make sure to have general rubrics that can be used for all different types of end-presentations.

ASSESSMENT

This chapter gives an example overview of what the grade could be based on if this module is part of the curriculum of a Bachelor student.

The grade is based on the group grades for the report and the video presentation and an individual assessment of the performance in the project. To pass, all parts have to be concluded with the grade of 5.5 or higher. The student's final mark is built up as follows:

Percentage of total grade	Part of the module	Team or individual grade
35%	Report that reflects the research (problem, methods, results, advice) conducted by the project team	Team grade
25%	Video presentation on the results of the research	Team grade
40%	Personal performance in the project based on: 1. the assessment of the students' contribution to the team by the coach, based on: a) the students' contribution to the project team through peer assessment b) participation during project meetings c) portfolio of activities per student 2. the assessment of the CARQ assignment (50% of grade)	Individual grade

The assessment criteria for the policy advisory report, the video-presentation, personal performance and CARQ assignment are presented in *Appendix 5*.

APPENDIX 1. EXAMPLE OF A REAL-LIFE PROJECT PROPOSAL

Urban Agriculutre in Benin and the Netherlands

Commissioner: Centre d'Actions pour l'Environnement et le Développement Durable

ACED (Centre d'Actions pour l'Environnement et le Développement Durable) is a non-for-profit organization established in 2009. The institution is based in Bénin, sub-Saharan Africa. ACED is involved in agriculture, food security and sustainable development issues in Benin and its mission is to empower communities with lasting solutions to poverty and hunger in a sustainable environment.

ACED works on various topics related to food security. They are for example involved in projects aiming to: improve the resilience of the inland fishery in Benin, reduce greenhouse gases emitted by water hyacinth through compost production and utilisation in gardening, and build youth capacity in agribusiness. Many of the projects focus on improving the performance of agricultural entrepreneurs in Benin. Currently, research is being conducted on the development of Urban Agriculture (UA) in Benin, as UA is considered an important scenario to improve food and nutrition security (FNS) of the urban poor. UA can be defined as the utilization of small areas within and around cities for growing crops, raising small livestock and processing food-related products, alone or in combination, for ownconsumption or sale. Although UA has already been practiced in Benin for decades, it is still unclear how UA contributes to FNS and what conditions are necessary for a successful mainstreaming and implementation of UA in Benin (Houessou et al, 2019). To contribute to the further development of UA in Benin, we therefore would like to ask you:

- 1. What are the economic and social benefits of Urban Agriculture (UA) in Benin?
- 2. What are the main constraints and barriers to upscale UA in Benin?
- 3. What Road Map could there be developed to expand UA in Benin?

To answer these questions, we challenge you to use the different tools and methods you've been practicing with during the minor courses and integrate the acquired data with qualitative research data from interviews. Moreover, since UA is a hot topic in the Netherlands also, **we would very much like to learn from the Dutch case**. To enable learning and understanding of the similarities and differences between the two contexts, it is important to highlight the main purpose of UA (hobby, livelihood, community engagement, income, etc.) in the two countries.

Literature:

D. Houessou, F. Thoto, B. Sonneveld, A. Aoudji, S. Dossou, B. Agbandou 2019 Urban Agriculture in Benin. How can policy support gardeners?

APPENDIX 2. CONTENT OF THE POLICY ADVICE REPORT

Object	Content
Cover page	Title, subtitle (optional), name of the author(s), picture/graphics/illustration (optional, yet recommended)
Title page	Title, subtitle (optional), name of the author(s) AND place and date of publication, name of organization/institute/university you work for, 'assignment board' and document identification number (optional)
Preface	Information about the reasons for writing the report, the intended audience, the authors and acknowledgement of people who were of assistance in completing the report. The acknowledgements can, however, also be placed in a separate chapter at the end of the report (as is more customary in the UK and US). About 1-2 pages.
Executive summary	The summary comprises around 1000 words. It gives a brief overview of the problem, the main research question, the sub-research questions and the approach, but focuses mainly on the conclusions and recommendations of the report.
Table of contents	 Chapters, paragraphs and numbering of pages. N.B there are a number of rules concerning how certain chapters are placed in the table of contents: Table of contents: The preface, summary, list of abbreviations, explanatory list of words, list of symbols. The appendices are not considered to be chapters and therefore receive no chapter-numbering in the table of contents, but are all listed in order of appearance in the report. Pages: The cover page, title page, preface and the table of contents are not numbered. The executive summary is, in the case of policy and advisory reports, numbered in a different way than the rest of the report e.g. with roman numbering or characters (a, b, c,).
List of abbreviations	List of abbreviations and the full description of the term that is abbreviated. Using a list of abbreviations saves you the time and effort to write every abbreviation in full the first time you use it in your report.
First part	 This part includes the following elements: An introduction, including A problem definition A short problem statement A research objective (what you promise to produce) The main research question Contextual background, including an actor map A theoretical background and a conceptual framework; including a part on food systems as complex problem Sub questions derived from your conceptual model Methodology (in past tense) Justify the choice for your methods with an emphasis on inter- and or transdisciplinary aspects of your research Design of (transformative) interviews in general and the (transformative) interview questions in specific (and include: operationalization of concepts, interview procedures). The used analysis of the qualitative results (detailed analytical approach) and how you performed the extended member check. Structure of the report Note: these elements need to be structured in multiple chapters (the exact structure is up to you)
Middle part	Core-chapter(s) on the results of your research. You usually end with a comparison or analysis of the research findings. That is a rearrangement of

	your data (both from the literature and (transformative) interviews) according the conceptual framework. In these chapters, generally 1 sub-research question is analysed per 1 (sub)chapter. You might end with a chapter on analysis in which you rearrange your data according to the conceptual framework, taking all results together \rightarrow answering the main research question. Analysis is not a condensed summary of you results.
Conclusion and discussion	What insights are gained? Answering of your research sub-questions and the main research question. No new ideas/results are introduced in the conclusion. Also, a conclusion needs to be delivered in crisp and clear rational language; understandable for everyone without reading the entire report (often policymakers tend to read the introduction, conclusion and recommendations when scanning a report).
	Discussion : Place your conclusions within current relevant scientific literature; see also your contextual background in the beginning (how do your conclusion deviate/strengthen/ weaken this literature). Anticipate to critical remarks from an outsider reading your report (e.g., too less interviews) and argue why that critic is not that important for your conclusions (e.g., see actor chart, those are the main actors). Conclusion is not a condensed summary of you results. Discussion is 20% methodological and 80% contextual (might be speculative).
Recommendations	Formulate around 3 alternatives (i.e. policy advice). Listing the pro-contras of each alternative. This is based on the future steps that can be taken which emerge from the results/conclusion - with each recommendation try to answer the questions: why? who? how? The gold is in the details.
List of references	 In text: between brackets (author, year). If two authors, list both. If more than two authors then first author et al. In reference list: Book: authors, year, title, place of publisher, publisher Example: Stake, R.E. (2004) <i>Standards-Based and Responsive Evaluation</i>. Thousand Oaks, CA: Sage. Book chapter: authors, year, book chapter, editors, book title, place of publisher, publisher, pages Example: Mitcham, C. (1999) "Why the public should participate in technical decision making". In: R. von Schomberg (ed.) <i>Democratising technology: theory and practice of a deliberative technology policy</i>. Hengelo: International centre for human and public affairs: 39-50. Article: authors, year, title, journal (volume, number), pages Example: Paterson, M. and Higgs, J. (2005) Using hermeneutics as a qualitative research approach in professional practice. <i>The Qualitative Report</i> 10(2): 339-357

APPENDIX 3. FOOD SYSTEMS LIBRARY

Below is an overview of articles, books and documents that are chore and recommended within this module.

Qualitative data collection and analysis

Chore

 Gray, D.E. (2013). Doing Research in the Real World. SAGE. Chapter 7. Research design qualitative methods Chapter 8. Research design: Mixed Methods Chapter 15. Interviewing Chapter 23. Analysing and Presenting Qualitative Data

Further reading

• Gray, D.E. (2013). *Doing Research in the Real World. SAGE*. Chapter 3. Selecting and Planning Research proposals Chapter 22. Analysing and Presenting Quantitative Data Chapter 24. Writing up the Research

Complex problems, systems thinking and transdisciplinarity: *Chore*

Bunders J.F., Broerse J.E., Keil F., Pohl C., Scholz R.W., Zweekhorst M.B. (2010) How can transdisciplinary
research contribute to knowledge democracy? In: in 't Veld R. (eds) Knowledge Democracy. Springer, Berlin,
Heidelberg. https://link.springer.com/chapter/10.1007%2F978-3-642-11381-9_11?Ll=true

Further reading

- Booth Sweeney, L. & Meadows, D. (2013). *The Systems Thinking Playbook. Exercises to stretch and build learning and systems thinking capabilities.* Chelsea Green Publishing Co.
- Meadows, D. (2015). *Thinking in Systems. A Primer*. Chelsea Green Publishing Co.
- Schuitmaker (2012). Identifying and unravelling persistent problems. Technological Forecasting and Social Change Volume 79, Issue 6, July 2012, Pages 1021–1031 <u>http://www.sciencedirect.com/science/article/pii/S0040162512000224</u>
- Regeer, B. & Bunders, J.F.G. (2009). Knowledge co-creation: Interaction between science and society. *A transdisciplinary approach to complex societal issues.* A Preliminary study of the RMNO (Advisory Council for Spatial Planning, Nature and the Environment).
- Pohl, C. & Hadorn G.H. (2008) Methodological challenges of transdisciplinary research. Natures Sciences Sociétés. 16:111-121. http://www.nssjournal.org/articles/nss/pdf/2008/02/nss8204.pdf
- Stock, P. and Burton, R.J.F. (2011) Defining Terms for Integrated (Multi-Inter-Trans-Disciplinary) Sustainability Research. *Sustainability*. 3 (8), 1090-113. http://www.mdpi.com/20711050/3/8/1090
- Pohl, C. (2001). How to bridge between natural and social sciences? An analysis of three approaches to transdisciplinary from the Swiss and German field of environmental research. *Natures Sciences Societes*, 9(3), 37-46.
- Jahn, T., Bergmann, M., & Keil, F. (2012). Transdisciplinarity: Between mainstreaming and marginalization. *Ecological Economics*, 79, 1-1
- Sarkki, S., Heikkinen, H. I., & Karjalainen, T. P. (2013). Sensitivity in transdisciplinary projects: A case of reindeer management in Finland. *Land use policy*, *34*, 183-192.

The need for food system transformation and the importance of systems thinking and/or transdisciplinarity *Chore*

- Ruben, R., Verhagen, J., & Plaisier, C. (2019). The Challenge of Food Systems Research: What Difference Does it Make? *Sustainability*, 11(1), 171.
- Hammond, R.A. & Dubé, L. (2012). A systems science perspective and transdisciplinary models for food and nutrition security. *PNAS*, 109 (31); 12356-12363

- Gill et al. (2018). A Systems Approach to Research and Innovation for Food System Transformation. Policy Brief 1, published by FIT4FOOD2030.
- Ingram, J. (2011). A food systems approach to researching food security and its interactions with global environmental change. *Food Security.* 3: 417–431. DOI 10.1007/s12571-011-0149-9

Further reading

- Swinburn, B.A., Kraak, V.I., Allender, A., Atkins, V.J., Baker, P.I. et al. (2019). The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission report. *The Lancet Commissions*, 393:10173, p791-846. DOI: <u>https://doi.org/10.1016/S0140-6736(18)32822-8</u>
- Béné, C., Fanzo, J.C., Haddad, L., Hawkes, C., Caron, P., et al. (2020). Five priorities to operationalize the EAT-Lancet Commission report. *Nature Food*, 1, 457-459. DOI: <u>https://doi.org/10.1038/s43016-020-0136-4</u>
- Metabolic (n.d.). Using systems thinking to transform society. The European Food System as a Case Study. Commissioned by WWF.nl.
- Ericksen, P. J. (2008). Conceptualizing food systems for global environmental change research. *Global Environmental Change*, 18 234-245.
- Meynard et al. (2017). Designing coupled innovations for the sustainability transition of agrifood systems. Agricultural Systems 157: 330-339. http://dx.doi.org/10.1016/j.agsy.2016.08.002
- Rayner, G., Barling, D. & Lang, T. (2008). Sustainable Food Systems in Europe: Policies, Realities and Futures. *Journal of Hunger & Environmental Nutrition*, 3:2-3, 145-168, DOI: 10.1080/19320240802243209
- Burchi, F., Fanzo, J. & Frison, E. The Role of Food and Nutrition Systems Approaches in Tackling Hidden Hunger (2011). *International Journal of Environmental Research and Public Health*. 8, 358-373; doi:10.3390/ijerph8020358
- Food Ethics Council (2018). For whom? Questioning the food and farming research agenda. A special edition magazine from the Food Ethics Council.
- Simons, L. (2014). Changing the food game. Market Transformation Strategies for Sustainable agriculture. Taylor & Francis Ltd.
- Gaitán-Cremaschi, D., Klerkx, L., Duncan, J., Trienekens, J., Huenchuleo, C. (2019). Characterizing diversity of food systems in view of sustainability transitions: A review. Agronomy for Sustainable Developent, 39:1.

Food systems and policy

Chore

- IPES FOOD (2019). Towards a Common Food Policy for the European Union. The policy reform and realignment that is required to build sustainable food systems in Europe.
- Parsons, K., Hawkes, C., Wells, R. (2019). What is the food system? A Food policy perspective. In: Rethinking Food Policy: A Fresh Approach to Policy and Practice. London: Centre for Food Policy.

Further reading

• Barling, D., Lang, T. & Caraher, M. (2002). Joined-up Food Policy? The Trials of Governance, Public Policy and the Food System. *Social Policy & Administration*. 36 (6), 556-574.

Food Policy Councils and food system transformation (in case the real-life case is commissioned by a Food Policy Council for example)

Chore

- Calancie et al. (2018). Evaluating Food Policy Councils Using Structural Equation Modeling. *Am. J. Community Psychol,* 61:251-264. DOI 10.1002/ajcp.12207
- Schiff, R. (2008) The Role of Food Policy Councils in Developing Sustainable Food Systems. *Journal of Hunger & Environmental Nutrition*, 3:2-3, 206-228, DOI: 10.1080/19320240802244017

Further reading

- American Planning Association (2011). Food Policy Councils. Helping local, regional, and state governments address food system challenges. Food Systems Planning Briefing paper, American Planning Association's Planning and Community Health Research Center.
- Clayton ML, Frattaroli S, Palmer A, Pollack KM (2015) The Role of Partnerships in U.S. Food Policy Council Policy Activities. PLoS ONE 10(4): e0122870. doi: 10.1371/journal.pone.0122870

Additional materials to get a better understanding of how food systems are related to several disciplines and sectors

• Wiskerke, H. & Verhoeven, S. (2018). Flourishing foodscapes. Design for city-region food systems. Valiz.

Dutch materials related to food systems and policy

- Krom, de, M. & Muilwijk, H. (2018). Perspectieven op duurzaam voedsel. Pluriformiteit in debat en beleid, Den Haag: PBL.
- Muilwijk, H. et al. (2018), Voedsel in Nederland: verduurzaming bewerkstelligen in een veelvormig systeem, Den Haag: PBL.
- Nederland Verbeeld. Een andere blik op vraagstukken rond de leefomgeving. Voedsel, energie en mobiliteit: <u>https://www.pbl.nl/publicaties/2012/nederland-verbeeld</u>
- Candel, J. (2018). De opkomst van voedselbeleid: voorbij de tekentafel. Beleid en Maatschappij, 45 (4). doi: 10.5553/BenM/138900692018045004002

APPENDIX 4. GIVING FEEDBACK

Feedback can be given two ways: through **constructive feedback** or through **praise and criticism.** Don't fall into the trap of giving praise and criticism on team members' performance. Constructive feedback is information-specific, issue-focused, and based on observations. It comes in two varieties:

- Positive feedback is news or input to a team member about an effort well done.
- Negative feedback is news to a team member about an effort that needs improvement. Negative feedback doesn't
 mean a terrible performance, but rather a performance in which the outcomes delivered should be better. So
 negative is not a negative word in this case.

Praise and criticism are both personal judgments about a performance effort or outcome, with praise being a favourable judgment and criticism, an unfavourable judgment. Information given is general and vague, focused on the person, and based on opinions or feelings. The guidelines for giving constructive feedback fall into four categories: content, manner, timing, and frequency.

Content is what you say in the constructive feedback.

- In your first sentence, identify the topic or issue that the feedback will be about.
- Provide the specifics of what occurred. Avoid general comments and clarify pronouns such as "it," "that," etc. Be descriptive rather than evaluative. Focus feedback on observations, rather than inferences.
- Without the specifics, you only have praise or criticism. Start each key point with an "I" message, such as, "I have noticed," "I have observed," "I have seen," or when the need exists to pass on feedback from others, "I have had reported to me." "I" messages help you be issue-focused and get into the specifics. Notice "all," "never," "always," etc., and ask to get more specificity. Often these words are arbitrary limits on behaviour.

Manner is how you say the constructive feedback. As you may know, how you say something often carries more weight than what you have to say — manner is an important element when giving feedback.

- Be direct when delivering your message and be clear about what you want to say. Get to the point and avoid beating around the bush. Both negative and positive feedback should be given in a straightforward manner.
- Emphasize the positive. This isn't being collusive in the person's dilemma.
- Refer to behaviour that can be changed.
- Avoid "need to" phrases, which send implied messages that something didn't go well. For example, "Jane, you need to get your reports turned in on time, and you need to spell check them." This message is not really performance feedback. It implies that Jane did not do something well with her reports, but it doesn't report exactly what happened. Providing clarity on what occurred is the aim of feedback.
- Be sincere and avoid giving mixed messages. Sincerity says that you mean what you say with care and respect. Mixed messages are referred to as "yes, but" messages. For example, "John, you have worked hard on this project, but..." What follows is something the person is not doing well and is the real point of the message. The word "but," along with its cousins "however" and "although," when said in the middle of a thought, creates contradictions or mixed messages. In essence, putting "but" in the middle tells the other person, "Don't believe a thing I said before."

In positive feedback situations, express appreciation. Appreciation alone is praise. Yet when you add it to the specifics of constructive feedback, your message carries an extra oomph of sincerity. For example: "Sue, your handling of all the processing work while John did the call-backs made for an efficient effort and showed good teamwork. Everything you did was accurate, as well. Thanks so much for helping out. Such initiative is a real value to the team."

APPENDIX 5. ASSESSMENT CRITERIA

Policy Advisory Report

Unsatisfactory (u)	Satisfactory (s)	Good (g)	Excellent (e)
Summary (approx. 2 p	ages) / abstract (200-300 wor	ds)	
Not fulfilling the criteria of 'Satisfactory'	 The choice for summary or abstract is appropriate to report/article size The context, problem statement, research question, methodology used, results, conclusion and discussion are clearly summarized 	As 'Satisfactory' and additionally: - To the point - Coherent and logically sound	As 'Good' and additionally: - Ready for scientific - publication - Can be read independently of source - Conveys the purpose of the research in relation to the field
Introduction: Dublin d	escriptors		
Problem description, c	ontext analysis, scientific baci	kground	
Not fulfilling the criteria of 'Satisfactory'	Is able to: - Select, order and summarize information; focus on essential elements; and recognize connections. - Demonstrate knowledge and understanding of the societal problem - Formulate a clear and relevant research question	As 'Satisfactory' and additionally: -The analysis of the problem is clear and relevant - Appropriate use of the relevant scientific literature - Describe the interdisciplinary context to support the relevance of the research problem- - Placement within field of research	As 'Good' and additionally: - Demonstrates a good insight and understanding of the societal problem. - Demonstrates mastery of the topic - Thorough analysis of the context and problem - Extensive use of the relevant scientific literature. - Contributes to field of research
Relevant theoretical co	oncepts and models, study qu	estions	
Not fulfilling the criteria of 'Satisfactory'	Is able to: - Select and explain relevant theoretical models and concepts in the field of specialization - On the basis of relevant theoretical models and concepts formulate relevant study questions. - The study questions satisfactorily cover the main question	As 'Satisfactory' and additionally: - Demonstrates understanding and explanation of the (theoretical) model/concept - Justify the choice of and relate the theoretical models and concepts	As 'Good' and additionally: - Can integrate, expand on, or modify and justify the (theoretical) models and concepts
Methods (2d) Design, choice of varia processing	bles, expressing and justifying	g methodology, description a	nd justification of data

NI - + f. (filling - + h)	la abla ta i		
Not fulfilling the	is able to:	As Satisfactory and	As 'Good' and additionally:
criteria of	 Justify the methodology 	additionally:	- Student masters
'Satisfactory'	of research	 Student is capable of a 	the link between the used
	 describe the effects of 	critical and thorough	methodology and data
	the chosen methods in the	description and	quality and acknowledges
	field of research	justification of the	and remedies any
	- Understand the effect on	methods used including	limitations herein
	the quality of data	issues related to the	
	- Apply these	ethical conduct of research	
	understandings to his/her	- discusses the effects of	
	own project	different (chosen)	
		methods	

Results and execution

Data processing (qualitative and quantitative), logical and complete presentation of data

Not fulfilling the criteria of 'Satisfactory'	Is able to - Present the results in a complete and adequate manner	As 'Satisfactory' and additionally: - Resulting data are well presented and can be	As 'Good' and additionally: - Student shows an independent, complete and thorough analysis of data
	- Select and order information, distinguish essentials from trivialities and recognize connections, while justifying your choices.	useful as a starting-point for publication, if additional data are collected - Data is validated	with an excellent presentation thereof

Discussion and conclusions and ability to critically evaluate

Structure of arguments, conclusions, link to research problem, comparison with other studies, strength and limitations of the study

Not fulfilling the	Is able to:	As 'Satisfactory' and	As 'Good' and additionally:
criteria of	- Answer your research	additionally:	- Present a concise (but
'Satisfactory'	question in a clear and	- Deal with all the different	complete) evaluation of the
	univocal way.	aspects in a critical manner	findings in the light of the
	Connect the findings to the	- Discuss the findings,	theoretical background
	theoretical background in	taking into account the	-Reflect critically on the
	order to answer the	relevance of the research	effect of the limitations on
	research question	in science and society	the findings of the study
	 Show satisfactory 	using a wide variety of	
	knowledge of the field of	scientific literature	
	research to discuss the	- Discuss limitations and	
	results	their implications	
	- Discuss the findings using	- Make recommendations	
	additional relevant	and make these explicit for	
	literature	the target group(s)	
	- Formulate strengths and	- Draw convincing	
	limitations of the study	conclusions	
	- Formulate		
	recommendations		
	- Draw a sound conclusion		
Structure and organics	tion		

Structure and organisation

General structure, clarity of organization, coherence in line of thought

Not fulfilling the	Is able to:	As 'Satisfactory' and	As 'Good' and additionally:
criteria of	- Show coherence in line of	additionally:	- Show coherence in line of
'Satisfactory'	thought: the problem	- Show coherence in line of	thought with in-depth
	definition, the theoretical	thought with scientific	scientific quality: the
	background, the methods,	quality: the problem	problem definition, the
	the analysis and the	definition, the theoretical	theoretical background, the
	conclusion and discussion	background, the methods,	methods, the analysis and
	are logical connected (but	the analysis and the	the conclusion and
	may be superficial at some	conclusion and discussion	discussion are logically
	points)	are logically connected.	connected
	- Provide structure,	- Well-chosen references	
	division in chapters,	- Layout adds to	
	headings and subheadings	understanding of the text	
	- Organize content clearly	C	
	- Treat references		
	correctly		
	- Provide a clear layout		
Scientific and English v	vriting skills		
-	-		
Not fulfilling the	Is able to:	As 'Satisfactory' and	As 'Good' and additionally:
criteria for	- Produce a text that might	additionally:	- Demonstrate ability to
'Satisfactory'	contain some language	- Demonstrate good use of	write a text that is ready for
	errors and ambiguous	language, including	publication
	sentences	grammar and spelling	
	- Presents the figures,		
	tables and references in a		
	clear way		
	- Write acceptable English		
	- Write in a readable and		
	understandable way		

Video presentation

Unsatisfactory (u)	Satisfactory (s)	Good (g)	Excellent (e)
Summary (approx.	2 pages) / abstract (200-300) words)	
Not fulfilling the criteria of 'Satisfactory'	Is able to - Make a video from which the viewer mostly understands the topic and might remember the video. Some introduced themes/topics may distract from message. - Use Images/ Graphics and information used within the video has little or no relevance to the points discussed and/ or the topic	As 'Satisfactory' and additionally: - Make a video from which the viewer is left with general understanding and will remember the video. - Show a fair amount of creativity displayed, but lacks "oomph!" - Images/ Graphics and information used within the video has moderate relevance to the points discussed and/ or the topic.	As 'Good' and additionally: - Make a video from which the viewer is left with a strong understanding of the topic, will remember the video, and feels like they want to learn more. - Shows excellent creativity, has appropriate levels of "oomph" within the video. - Images/ Graphics and information used within the video are highly relevant to the points discussed and/ or the topic.
Scientific content			

Structure and thread of arguments, clarity of conclusion

Not fulfilling the	Is able to:	As 'Satisfactory' and	As 'Good' and additionally:
criteria of	- Produce a video	additionally:	- Demonstrate strong line of
'Satisfactory'	presentation with a clear	- Content of	argumentation
	structure with question,	presentation is well	- Provide convincing conclusions which
	methods, results,	structured and content	stimulate further debate
	conclusion and	is well chosen; (suits	
	discussion nicely	the results of research	
	summarized and a	and fits the audience)	
	logical thread of	- Conclusions are clear	
	argument	and appropriate	
	- Place the research in a	- Gives direction to	
	broader scientific	future research	
	context		
Ability to hold a dis	cussion based on the prese	ntation	
Not fulfilling the	Is able to	As 'Satisfactory' and	As 'Good' and additionally:
criteria of	 Responds to questions 	additionally:	 Respond to questions in convincing
'Satisfactory'	 Provide answers based 	 Provide answers 	way
	on the research	which are to the point	 Demonstrate and show a deep and
	conducted	and	thorough knowledge and insight of the
		show a broad view of	research field
		the subject	- Demonstrate excellence in the
		- Reflect on own	discussion
		research	
		- Demonstrate good	
		interaction with the	
		audience	

Personal performance

Attitude	
Social skills and responsiveness to feedback	
Not fulfilling the criteria for 'pass'	Is able to: - Collaborate - Openly and respectfully communicate internally and externally - Ask for advice, and feedback, - Reflect on feedback - Incorporate feedback
Self-reflection	
Not fulfilling the criteria for 'pass'	 Formulates personal learning objectives (personal development plan) and assess own progress Critically evaluates own performance, both introspectively and in discussion with others (during peer feedback round). Shows ability to revise own judgments, views and behaviour
Motivation and scientific curiosity	
Not fulfilling the criteria for 'pass'	 Is clearly interested in scientific inter- and transdisciplinary research and sees this as an essential component of complex societal issues Is committed to the subject Works no less than 8 hrs. a day Demonstrates enthusiasm and involvement in the research topic and area Participates in formal/informal placement activities

		- Shows a desire to contrib	ute to the field of research
Ownership of project duri	ng placement		
Not fulfilling the criteria for 'pass'		 Works independently, and reflects on his/her own activities, work processes and skills Takes action and initiative to overcome problems and to achieve the best results. 	
Initiative			
Not fulfilling the criteria for 'pass'		 Independently acquires and critically assesses information during the research Takes action to perform the research and is able to change plans when necessary, in cooperation with the coach Is looking for opportunities to learn and to develop 	
Code of conduct			
Not fulfilling the criteria fo	r 'pass'	 No plagiarism Unbiased use of and pres Critical 	entation of data
Execution			
Unsatisfactory (U)	Satisfactory (S)	Good (G)	Excellent (E)
Work pace and planning			
Not fulfilling the criteria for 'satisfactory'	Is able to - Keep up with the planning and is flexible enough to make new plans when necessary - Produce satisfactory products and quality in relation to time invested	As 'Satisfactory' and additionally: - Is a good planner and well able to combine and plan different tasks - Produce more than expected products in terms of quantity <i>or</i> quality in relation to time invested	As 'Good' and additionally: - Able to anticipate on unforeseen and longer-term tasks - Produce more than expected products in terms of quantity <i>and</i> quality in relation to time invested
Practical research skills an	d execution		
Not fulfilling the criteria for 'satisfactory'	Is able to (with some guidance): - Review scientific literature - Develop an adequate research plan (problem statement, objectives, research questions, research approach, research methods, and planning) - Collect the data using appropriate (transdisciplinary) methods adequately. - Analyse data (in collaboration with stakeholders via extended member check) and, if needed, employ appropriate computer software	As 'Satisfactory' and additionally: - Has the competence and initiative to conduct the methods and review more independently. - Exhibits in-depth learning and reflection - Good analytical skills	As 'Good' and additionally: - Employs thorough data analysis. - Able to iterate between the meta and in-depth level

Communication and colla	 Exhibit learning and reflection on the limitations of the study Exhibit learning and reflection on the level of transdisciplinarity of the project and how the transdisciplinarity could be increased Demonstrate accuracy in data collection, storage and processing 		
Communication and colla	poration		
Not fulfilling the criteria for 'satisfactory'	Is able to (with guidance): - Communicate research conclusions, knowledge and rationales underpinning them, to specialist and non- specialist audiences, clearly and unambiguously - Collaborate with researchers from various scientific disciplines as well professionals and policy makers related to the food system, policymakers and the general public (if applicable)	A 'Satisfactory' but with minimal guidance	As 'Good' and additionally expand and/or develop a (new) network
Developing insights			
Not fulfilling the criteria for 'satisfactory'	Is able to (with guidance): - Apply scientific knowledge to formulate solutions/advice for a complex societal problem in the context of food systems	As satisfactory: - Can make essential contributions to scientific discussion about plans, results and consequences of research	As 'Good' but with minimal guidance

CARQ-assignment

swers all Stud CARO) and	ent clearly builds on	Student clearly build
l in the t	links to module material	on his/her experience in doing inter/transdisciplinary research
) (scor	e 1-10)	(score 1-10)
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)	cARQ) and in the (scor	in the (score 1-10)



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