

GOODFOOD Project

Good teaching practices in experiential learning for effective education in embedded food systems

Project No. 2020-1-PL01-KA203-082209

O2 – E-learning course on 'Food systems embedded in territories': e-lectures

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Food Systems - Connecting the dots

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Intended Learning Outcomes

After this lecture students should be able to:

- ▶ Describe the characteristics of a system
- ▶ Distinguish between food systems and food chains
- ▶ Apply systems thinking to food



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... but first, a word about our words ...

system

systemic

(affecting an entire body or organism)

systematic

(orderly, methodical)



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1 Systems Roots

“Systems theory is an interdisciplinary theory about every system in nature, in society and in many scientific domains as well as a framework with which we can investigate phenomena from a holistic approach.”

Capra (1997) cited in Mele et al. (2010)



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1.1 Actually, its *Systems Theories*

Ludwig von Bertalanffy's General Systems Theory

Niklas Luhmann's Systems Theory

Jay Forrester/MIT System Dynamics

Donella Meadows' Systems Theory

Elisabeth Dostal's Biomatrix Theory

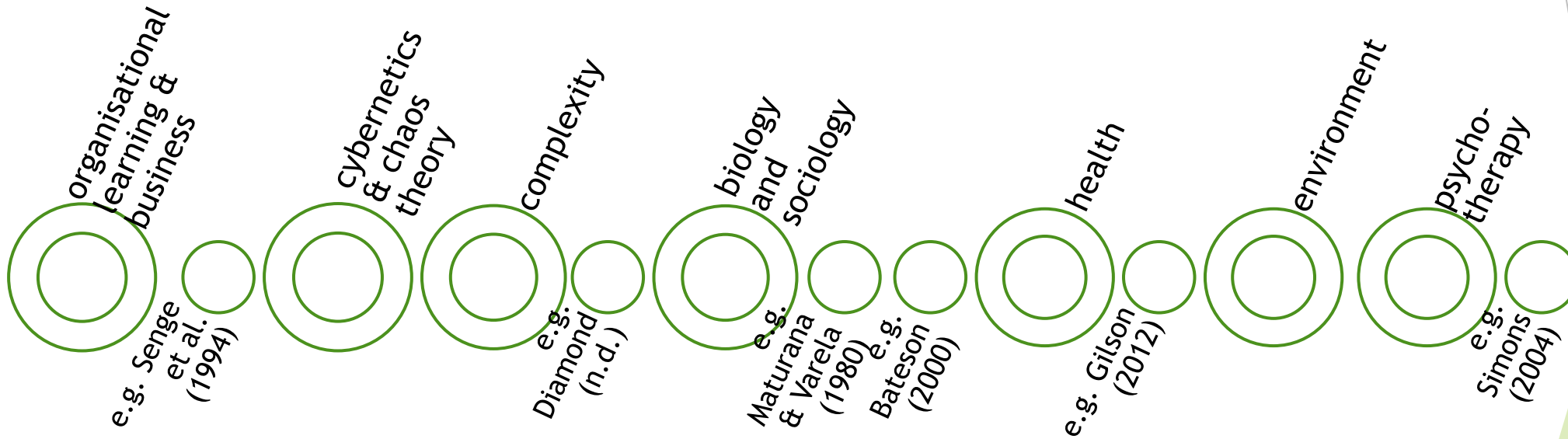


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1.2 Systems approach in science

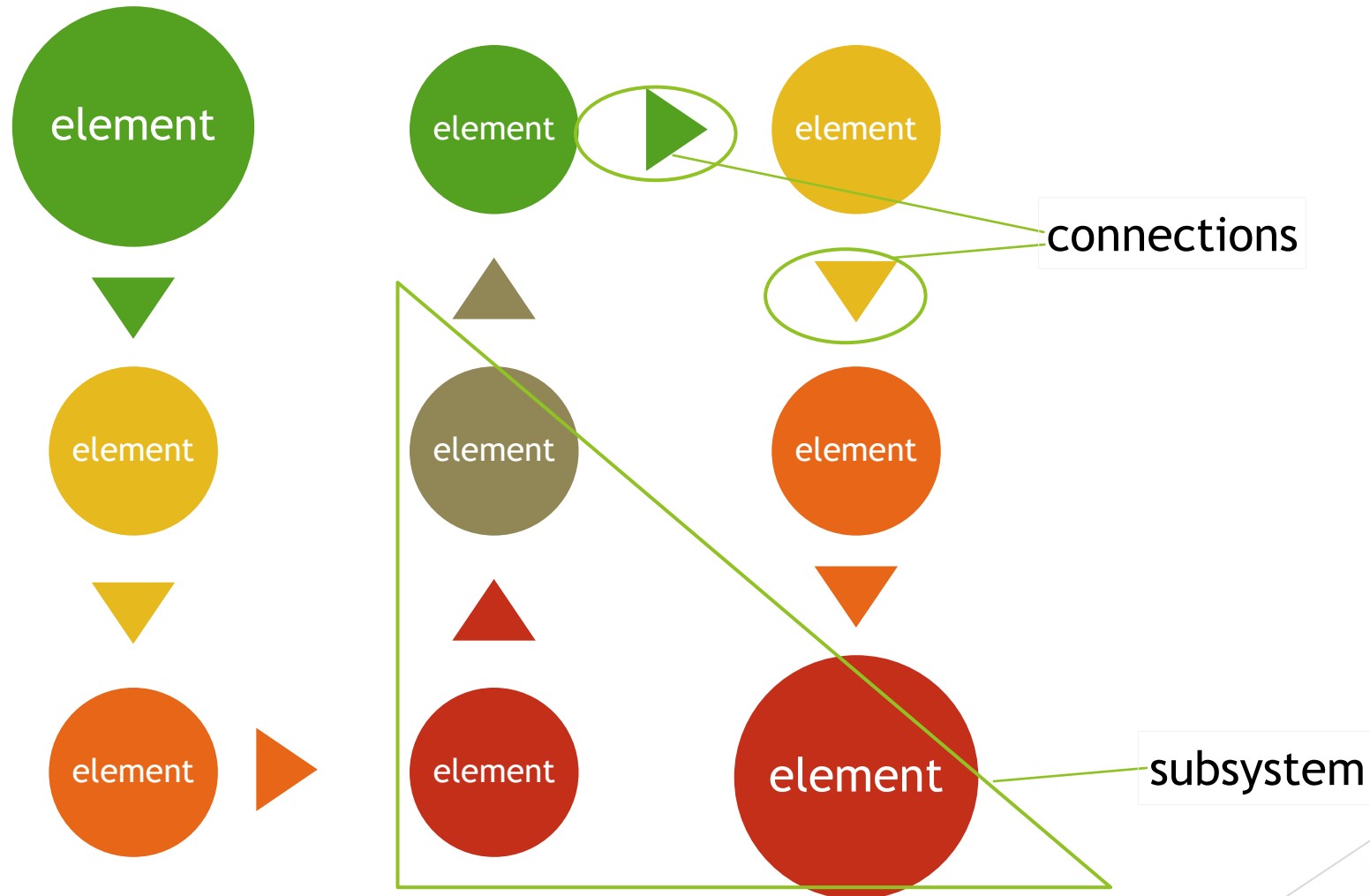


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2 Systems Basics and Systems Thinking



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3 Applications to the field of food

- ▶ Food systems are mixed biological and social and mechanical systems
- ▶ Food systems have the purpose to feed humans
- ▶ Therefore a food system representation must contain production AND consumption AND humans
- ▶ An organic food system representation must contain all these AND organic

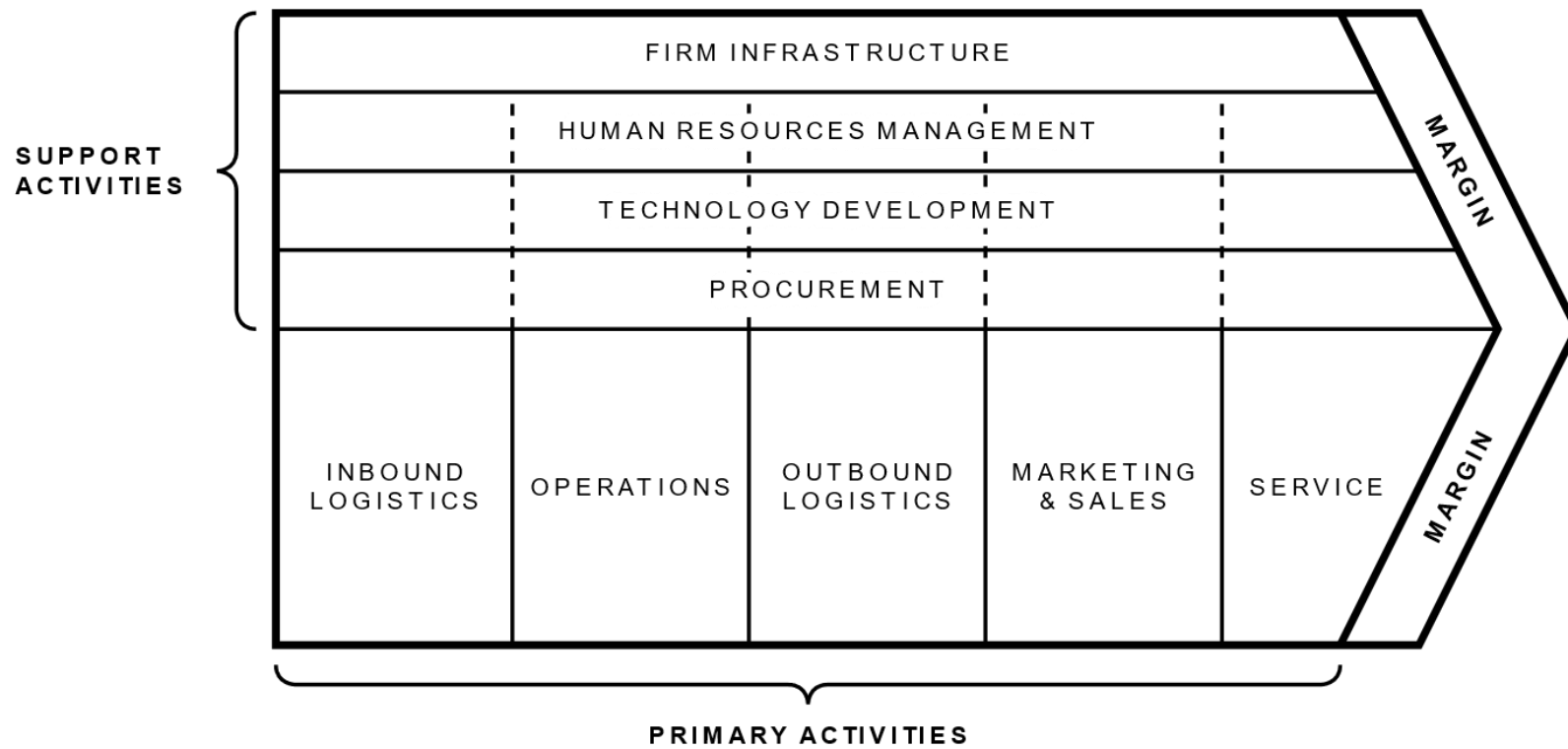


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4 From Chains ...

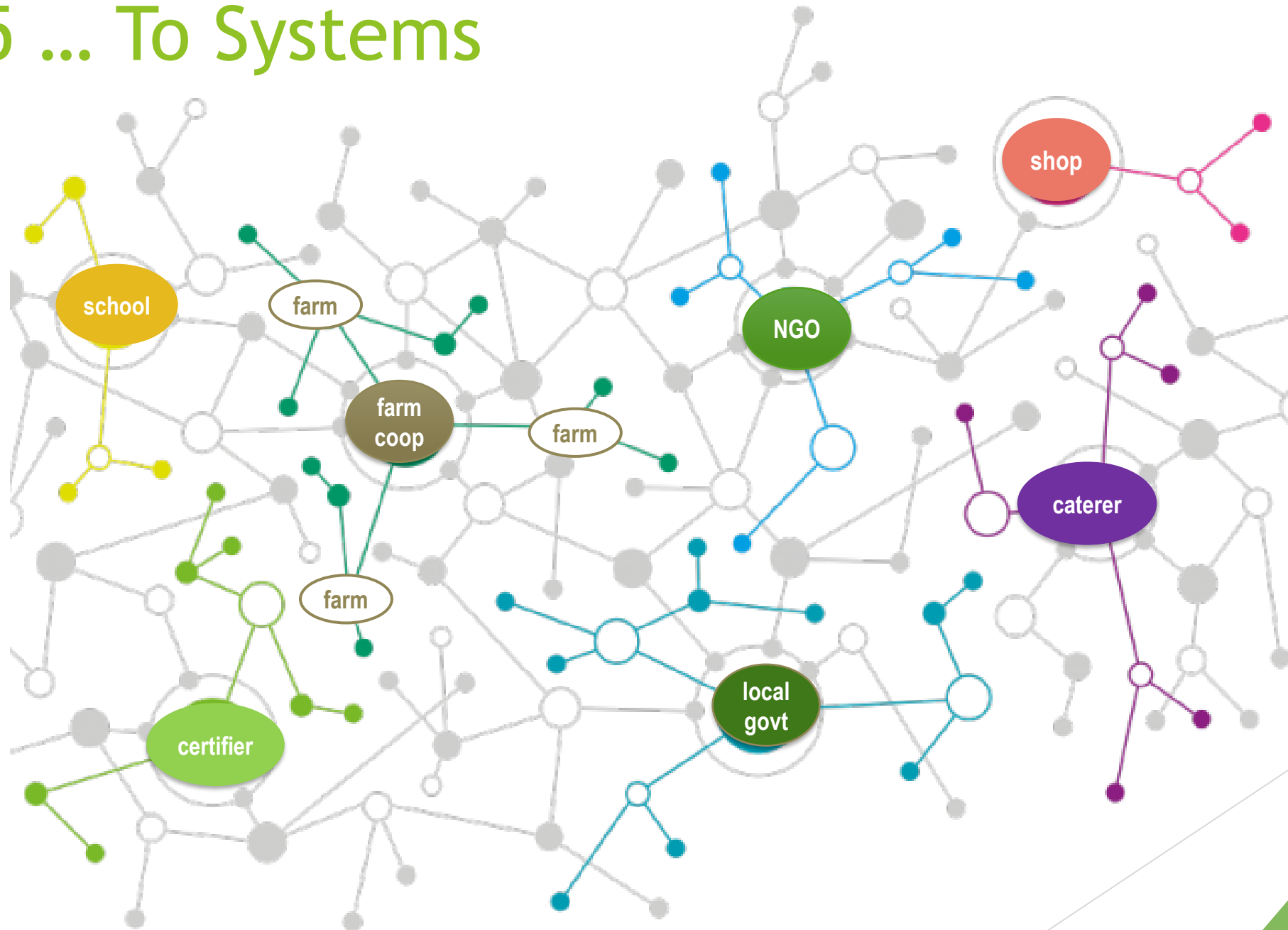


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5 ... To Systems



5.1 ... and Food systems

- ▶ “Food systems (FS) encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded.” (FAO 2018 - see your reading)
- ▶ Complex, adaptive and dynamic with “cross-scale” interactions between biophysical and social factors linked through feedback mechanisms
(Allen and Prosperi 2016; Nesheim et al. 2015; Erickson 2008; all cited in Jamil 2020)
- ▶ Consists of elements e.g., actors, activities, interactions, boundaries, drivers, inputs, outcomes
(Grant 2015; Ingram 2011; Erickson 2008; all cited in Jamil 2020)



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6 Scales in Food Systems

- ▶ Temporal (What time frame is being studied?)
 - ▶ e.g. the last 10 or 20 years, or, from 01.01.1990 until the present, or, the Edo Period in Japan
- ▶ Spatial (What undivided area is being studied?)
 - ▶ e.g. household, local, regional, global
- ▶ Jurisdictional (Which authorities are implicated? Also: Which political subdivisions are relevant?)
 - ▶ e.g. supra-national, national, federal, municipal
- ▶ Organisational (What organisational unit is being studied?)
 - ▶ e.g. single independent unit, cooperative, department, organisation



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7 Studying food systems

- ▶ necessitates setting up a frame and boundaries of the system, and, of course, your question(s)
- ▶ considering and deciding which category the elements come from: biological, social, physical, mechanical, etc.
- ▶ focuses on interactions of elements of a system, looks at flows (information, material, energy)
- ▶ The larger/longer you go, the more details you lose (or the more resources you need)
- ▶ An example of a studying approach: The City Region Food Systems (CRFS) approach, designed to improve our insights into the flows of resources—food, waste, people, and knowledge—from rural to peri-urban to urban and back again, and the policies and process needed to enable sustainability.

(see your reading: Blay-Palmer et al. 2018)

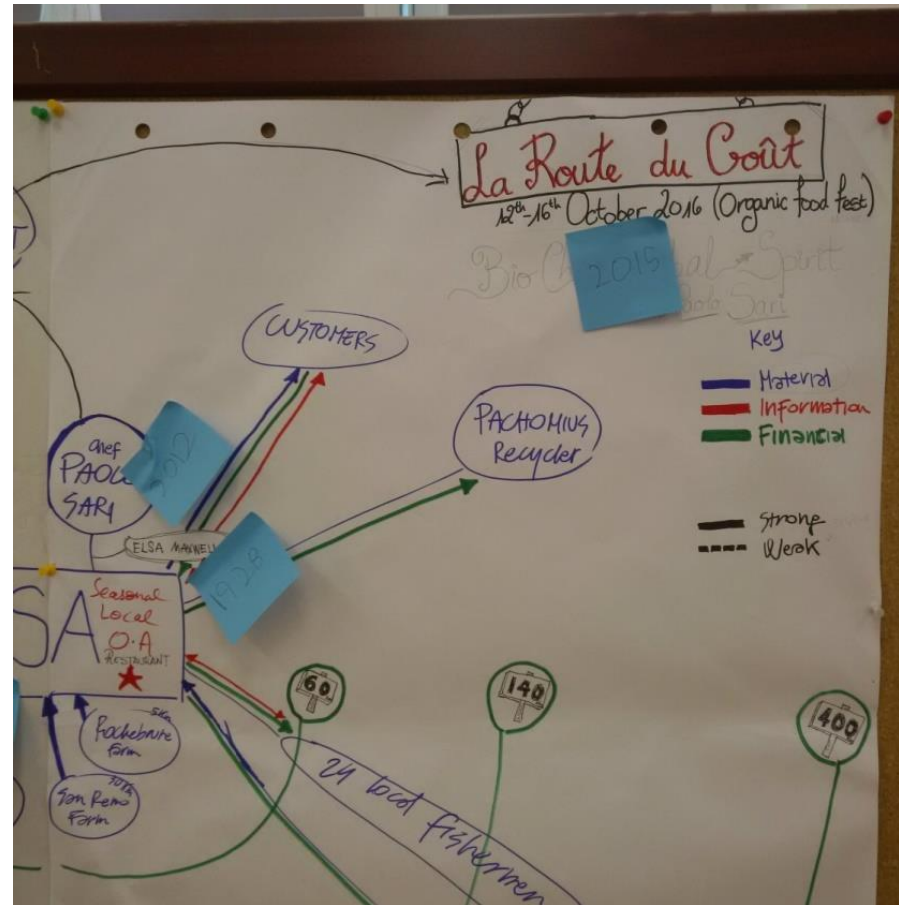
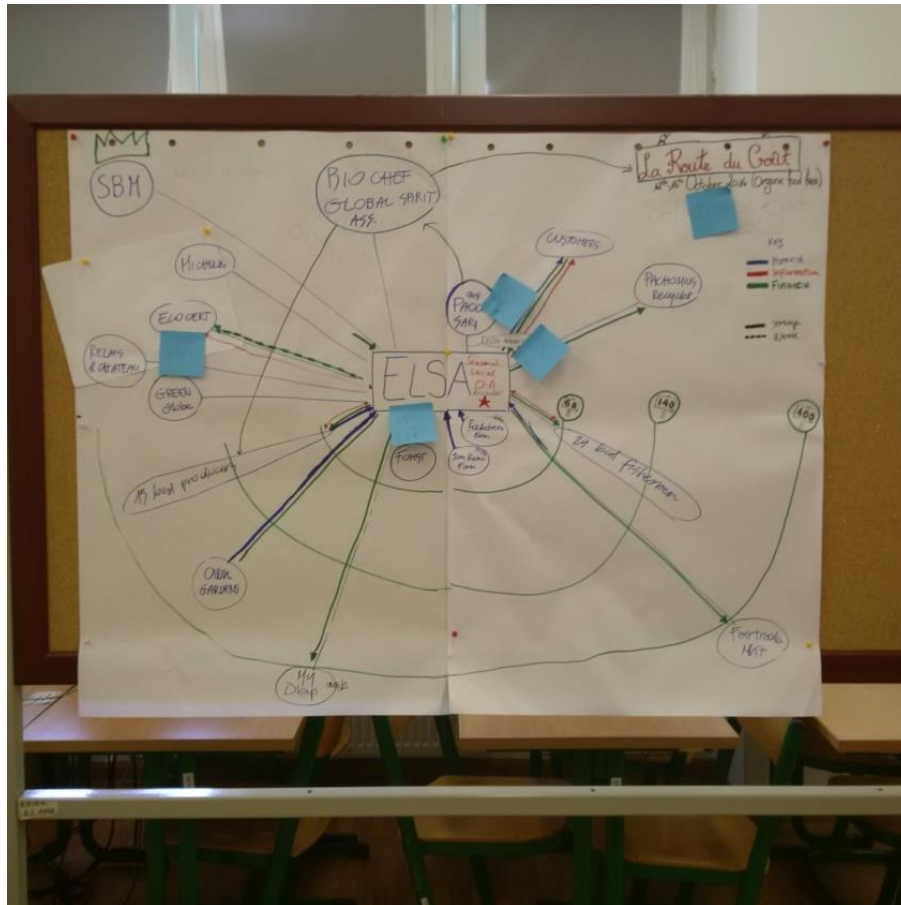


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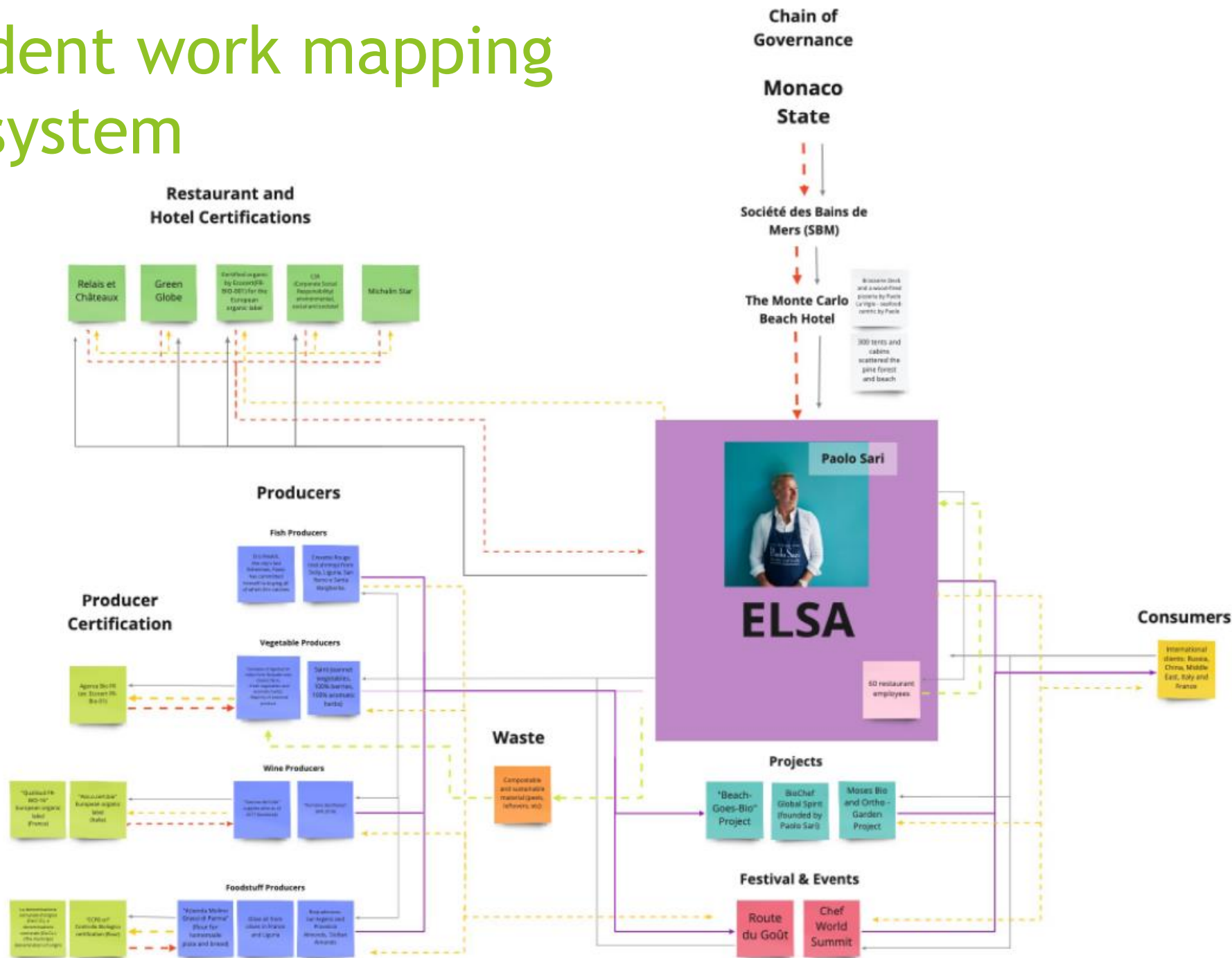


7.1 Student work mapping a food system



SS 2017: Student work on the food system „Elsa“, a 100%-organic restaurant with a Michelin Star in Monte Carlo. Almost all foods come from within a 100-km radius.

7.2 Student work mapping a food system



WS 2020: Student work on the food system „Elsa“, a 100%-organic restaurant with a Michelin Star in Monte Carlo. Almost all foods come from within a 100-km radius.

Summary

- ▶ Food systems serve the basic human needs of food and drink necessary in order to sustain human life.
- ▶ To look at a system you [the viewer] must connect the food with the people and/or the people with the food through whatever lies between them.
- ▶ It's the connections between the dots (elements) that are important in food systems studies; look at what is happening between the elements.
- ▶ A systems approach is useful because we can study interdependencies, feedback loops, leverage points within systems, emergent behaviour, and adaptation, amongst other things.



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Thank you!

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