



ASKFOOD Webinar: Beyond COVID-19: Challenges and new opportunities for sustainable and innovative food systems; 15/1/2021

From scenarios to prioritized education & research programs for sustainable food systems; *new competences & skills required*'.

Hugo de Vries

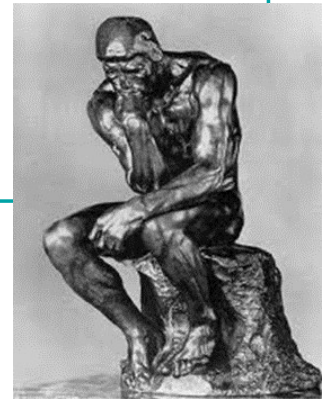
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➤ Outline



1. Sustainable food systems
2. Thinking about transitions like 'towards sustainable food systems' = '*being capable* of looking into the future'
3. Understanding societal challenges and mission-oriented R&I&E
4. The need for a new working approach, competences and skills
5. My lessons learnt



➤ 1. Introduction: sustainable food (bioeconomy) systems

Sustainability defined by Brundtland (1987)

Food systems are part of bioeconomy systems

Concept of bioeconomy introduced in 2002 with focus on biotechnology, then on resources bioeconomy and now on (socio-)ecological bioeconomy

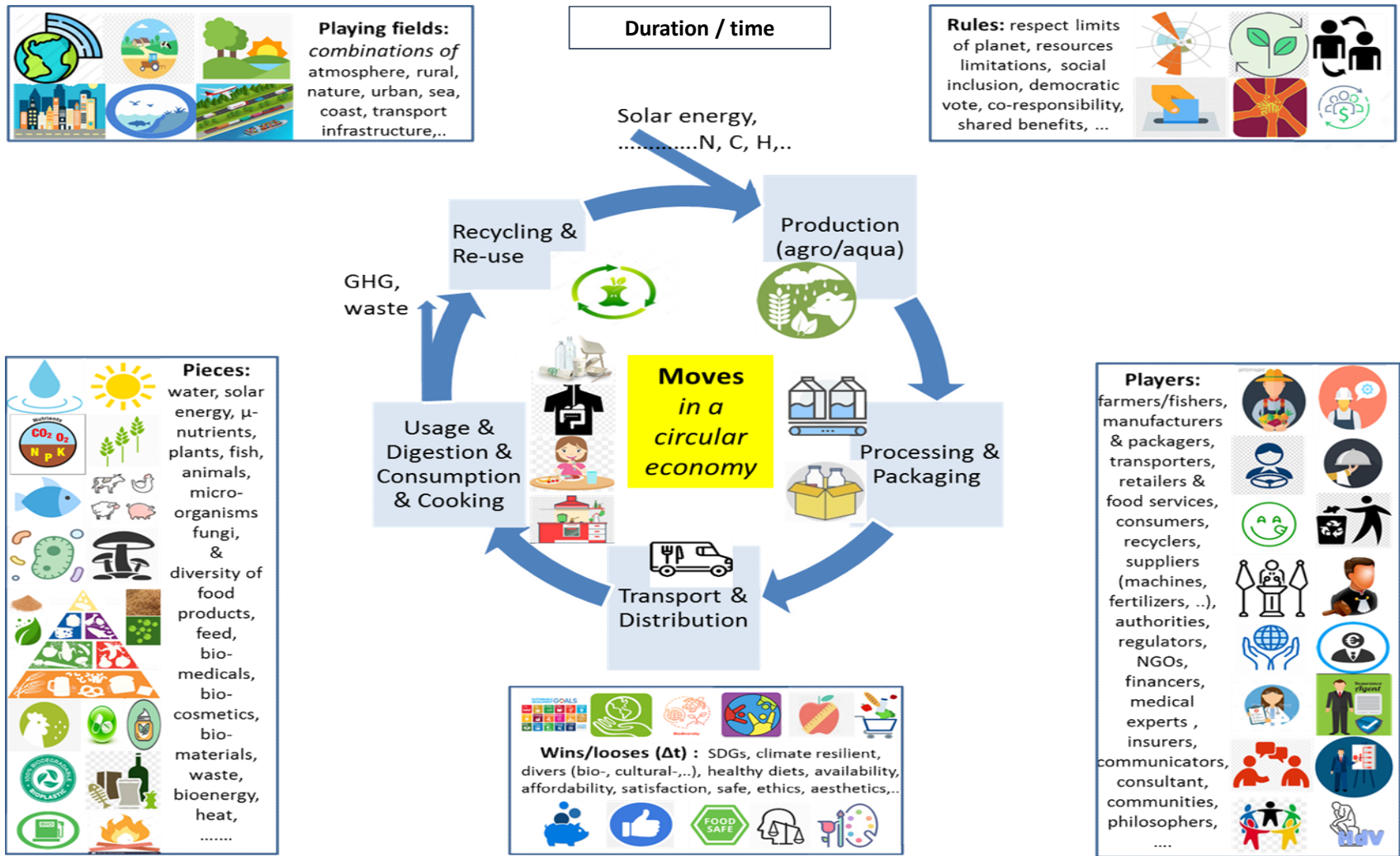
System boundaries: planetary limits : **radar** (Rockstrom et al, 2009; Stockholm resilience center) and also including social lower limits: **doughnut** (Raworth 2017)

EC sustainable *and circular* bioeconomy 2018 >>>> **Green Deal and Farm to Fork >>>>**
Food considered as largest part of the bioeconomy.

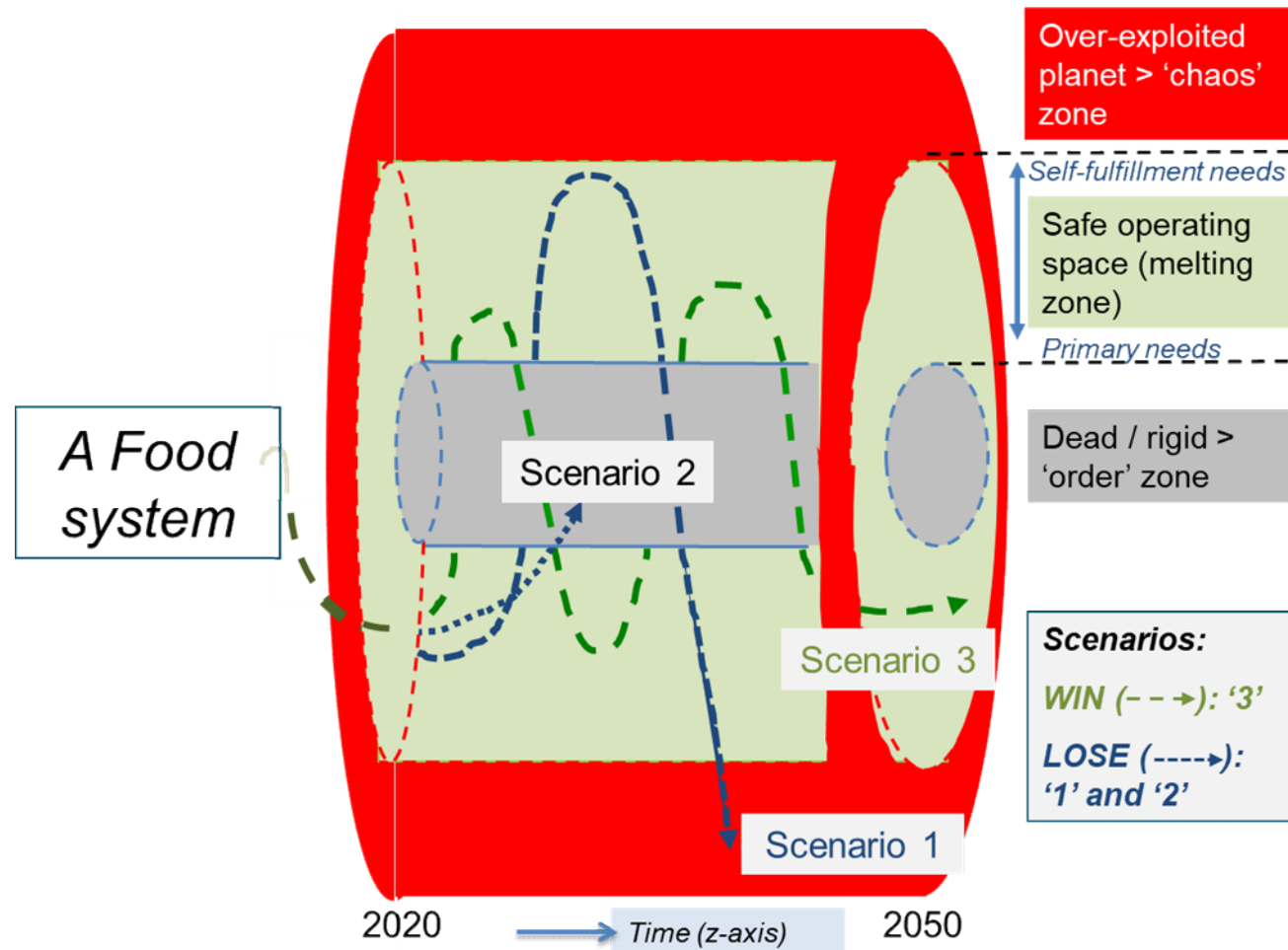
https://ec.europa.eu/food/farm2fork_en

➤ Systems may be described via 7 building blocks (like in game theory)

- 7 Building blocks of systems:
- Players
 - Pieces
 - Moves
 - Playing fields
 - Rules
 - Outcomes (win-lose)
 - Time / duration



➤ Sustainable food systems evolving in the melting zone between order and chaos



Adapted from own publication submitted to the special issue of the Journal of Agricultural and Environmental Ethics. (authors own design)

- 2. Thinking about transitions like ‘towards sustainable food systems = ‘being capable of looking into the future’ (I)

They really believed it ...

“Radio has no future.”

“Heavier-than-air flying machines are impossible.”

“X-rays will prove to be a hoax.”

Lord Kelvin, British mathematician, physicist, and president of the British Royal society, C. 1895

- Thinking about transitions like ‘towards sustainable food systems = ‘being capable of looking into the future’ (II)

“I think there is a world market for about five computers”.

Thomas J. Watson, chairman of IBM, 1943

“We don’t like their sound. Groups of guitars are on the way out”.

Decca Recording Co. executive, turning down The Beatles in 1962

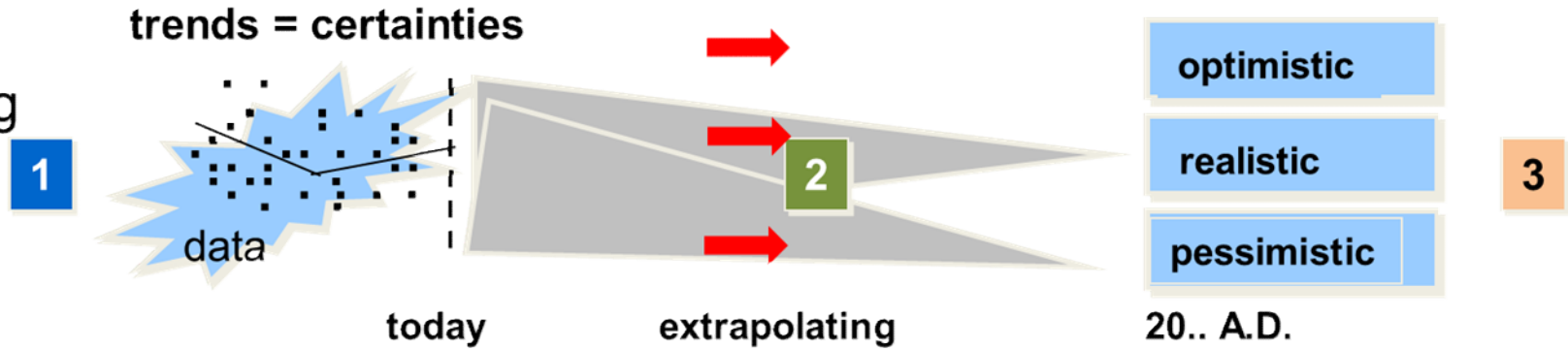
“There is not the slightest indication that nuclear energy will ever be obtainable. It would mean that the atom would have to be shattered at will”.

Albert Einstein, 1932

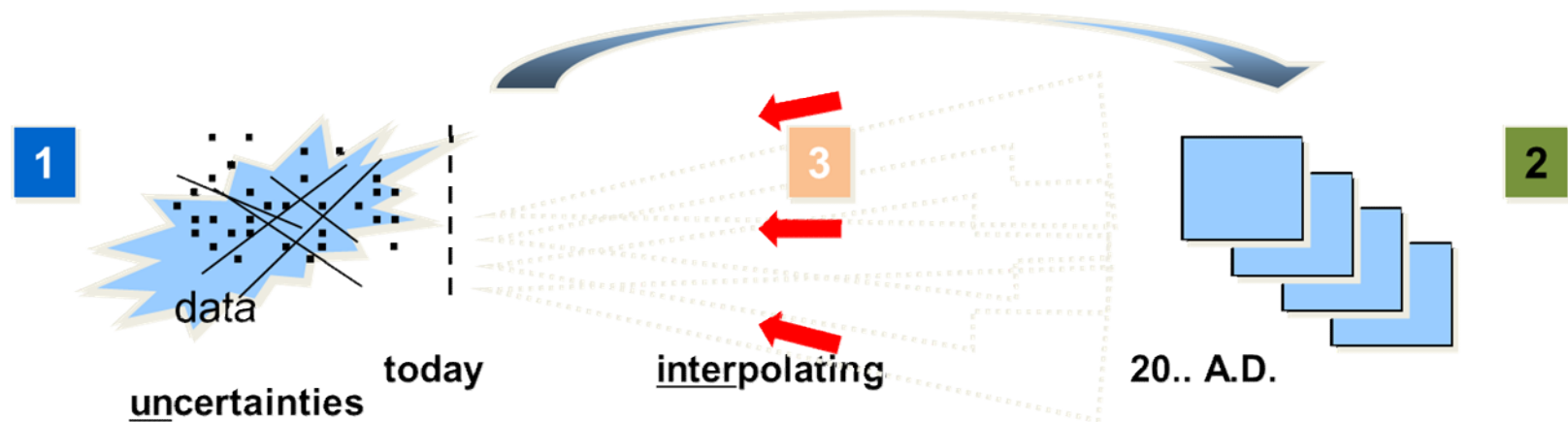
It is not easy!

➤ The goal of scenario thinking*: to better understand current options (e.g. R&I&E programs) in the view of potential futures

Forecasting / strategic planning



Backcasting / scenarios



➤ Key features of scenarios

Plausible: Logical, consistent and believable

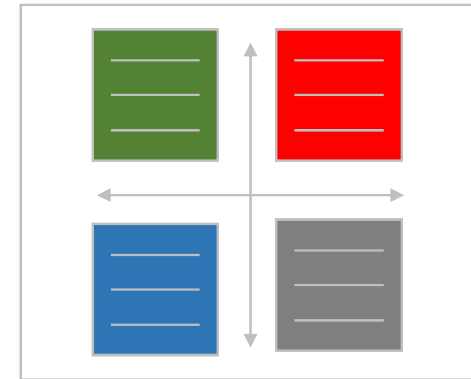
Relevant: highlight key challenges and dynamics of the future

Divergent: differ from one another in strategically significant ways

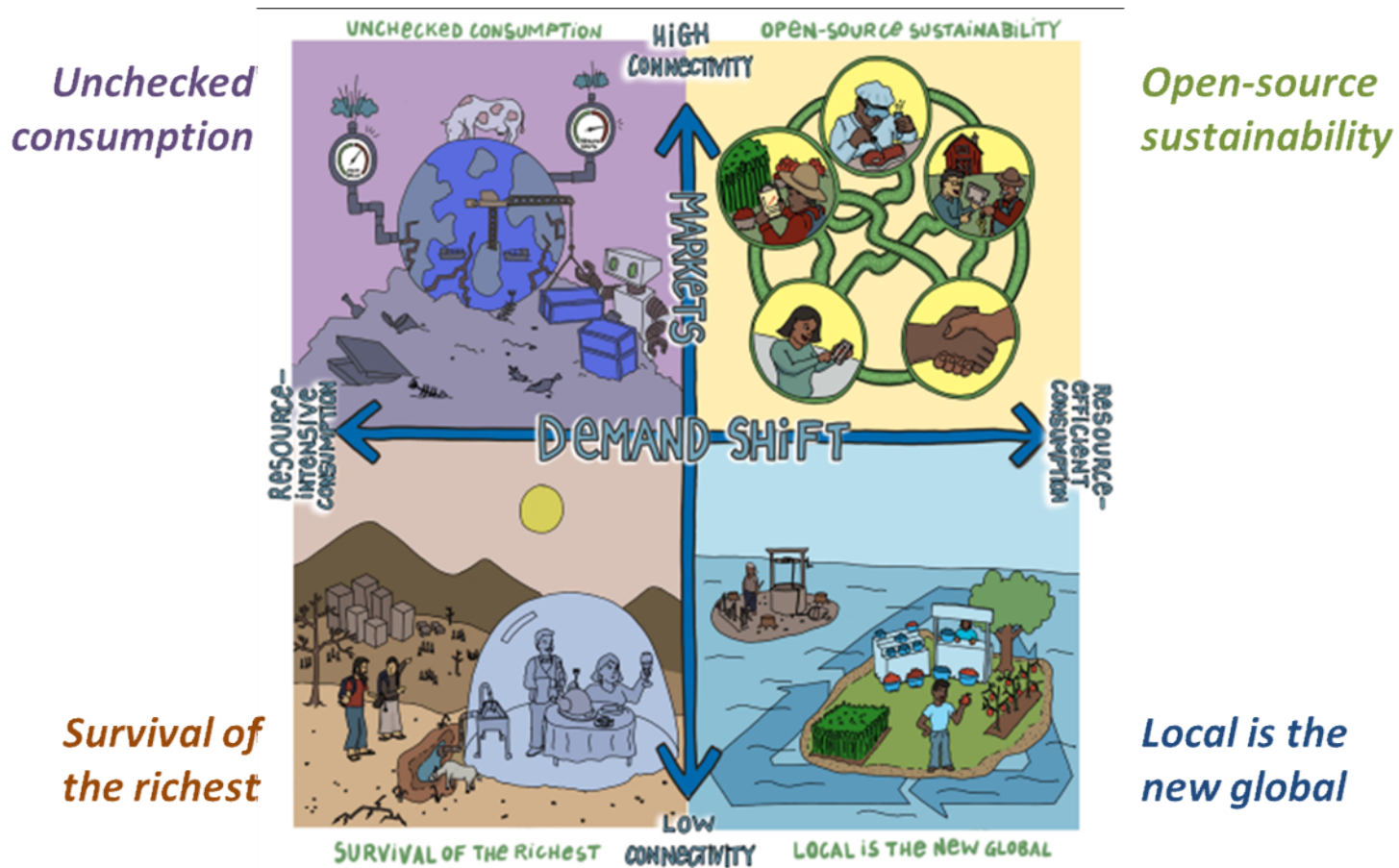
Challenging: challenge fundamental beliefs and assumptions of people concerned

- *Scenarios should **provoke thinking** rather than provide answers AND should **guide us**.*
- *Scenarios should be **contrasting** in order to face potential extreme futures and not being biased by only searching for positive options.*
- *Scenarios should be **evidence-based** and thoroughly discussed by experts in the field.*

Recognize that the "real" future will not be any of the scenarios, but that it will contain elements of all of our scenarios



➤ Example 1: what are 4 potential futures of global food systems?



Predicting the future is not easy!
 (think about Covid, financial crisis, etc.)

➤ **Example 2:** *How will I consume sustainably a healthy Mediterranean fresh dish in Scandinavia, today and tomorrow? (core question)*

Tomorrow (Boat)

Shop a little **GREEN**,
at **ANY COST**

(Added value, as fresh and convenient as possible in Modified Air Package and conventionally shipped)



Focus on **LONG TERM**

(New biodegradable packaging and solar-energy-driven storage and transport containers for healthy and convenience Mediterranean Products)

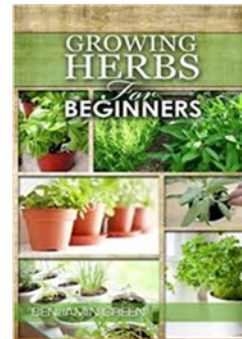
Planet (first)

Favour **LOCAL PRODUCTION**

in your own garden

(Due to climate change and COVID-19, Scandinavia starts to produce the fresh Mediterranean ingredients themselves except for labeled 'origin' products (not allowed))

Today (airplane)



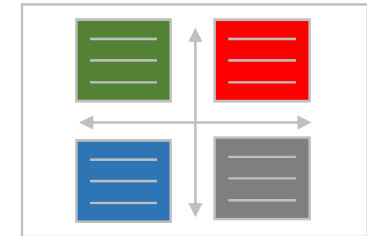
(unlimited) **Budget**

GLOBAL & CONVENIENCE

lifestyle first

(A delicious convenience & health Mediterranean meal at your table directly at your demand)

➤ From scenarios to prioritized options (e.g. R&I&E programs) via 'windtunneling'



Strategic Potential R&I Breakthrough

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Option 1	--	0	---	+
Option 2	+	++	++	0
Option 3	++	+++	+	-
Option 4	++	--	+++	--
Option 5	---	--	--	0
Option 6	+++	++	0	-

Strong fit	Neutral	Strong conflict
+++		-
++	0	--
+		---



This is a key reflection because it teaches us why there is a fit, what to do & how to act to make it fit!

*Option = possible future R&I&E program

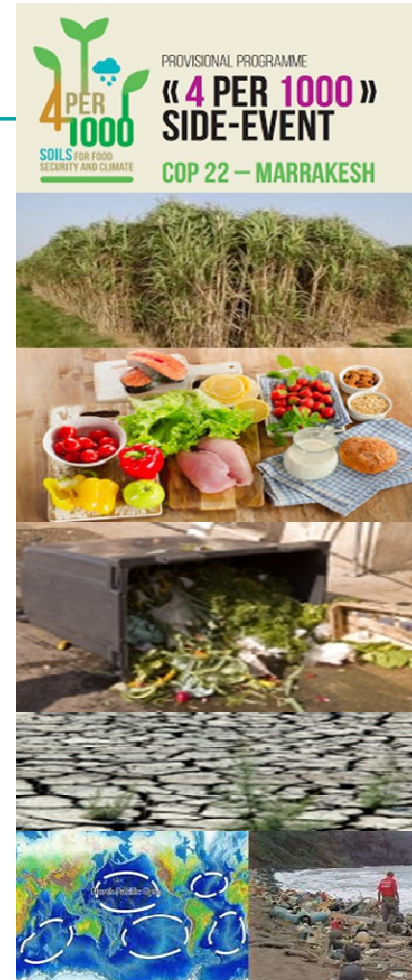
➤ 3. Understanding challenges & mission-oriented R&I&E

Sustainable food systems rely on:

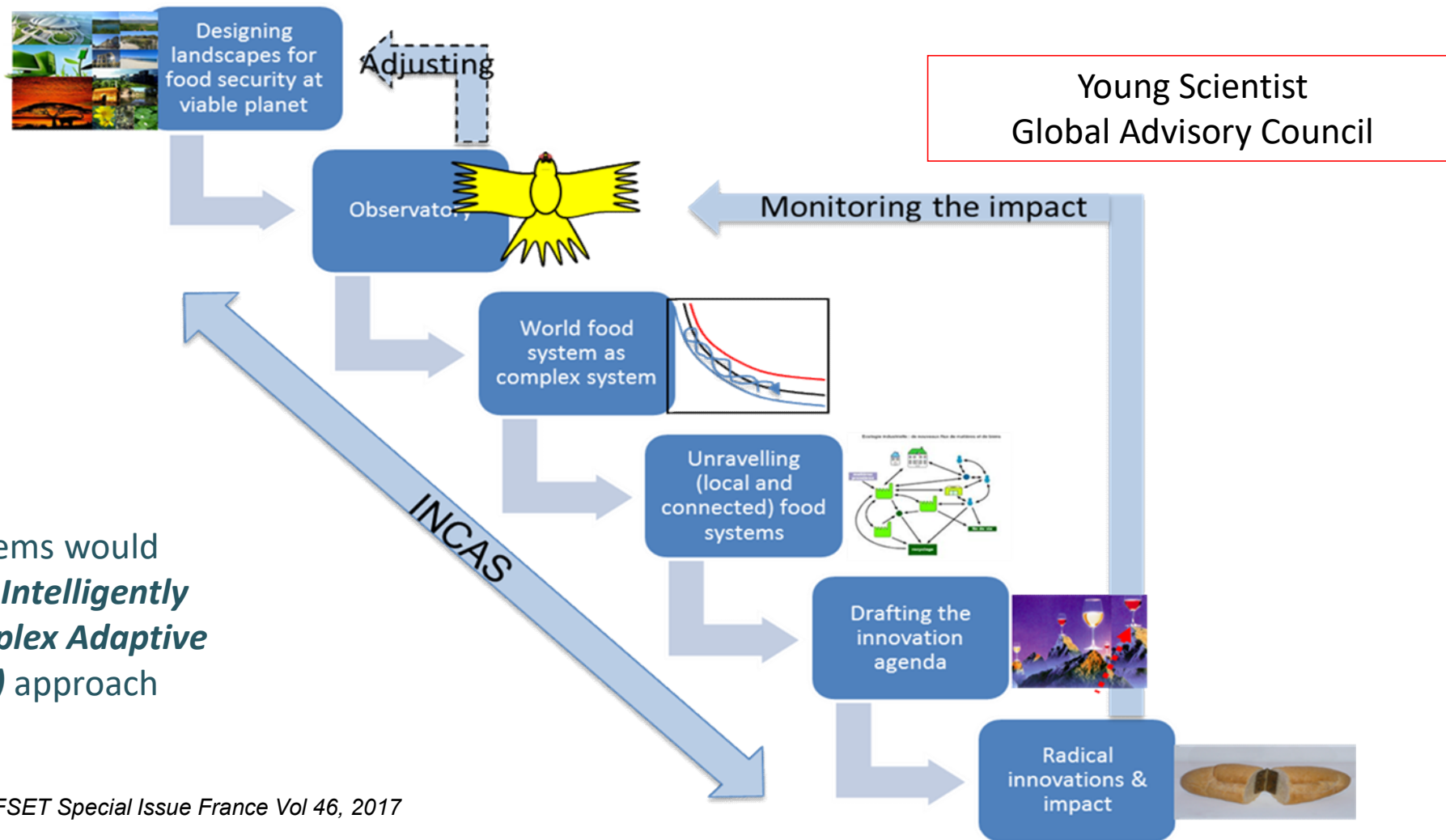
- A viable planet, biodiversity, reasonable climate, no over-exploitation of resources
>>>> transition towards a bio-based society
- Security of food and all primary needs for all:
>>>> thus NOT the rich versus the poor AND the food vs fuel 'battle'
>>>> transition to a fair, ethical, healthy, culturally diverse society

It is becoming a serious game addressing key missions: these are the starting point for a set of novel R&I&E programs.

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➤ 4. This needs a new working approach / methodology / process (I)



World food systems would benefit from an *Intelligently Navigated Complex Adaptive Systems (INCAS)* approach

➤ 4. The need for new competences & skills (II): the actions to address the challenges are too complex for individuals > acting as a collective team

- Initiator
- Entrepreneur
- Organizer
- Strategy planner
- Administrator
-
- Commercial
- Social
- Economical
- Technical (various)
- Philosophical
- Pro-active – responsive
-

You often need all in a project team



Diversity & Cultural Awareness



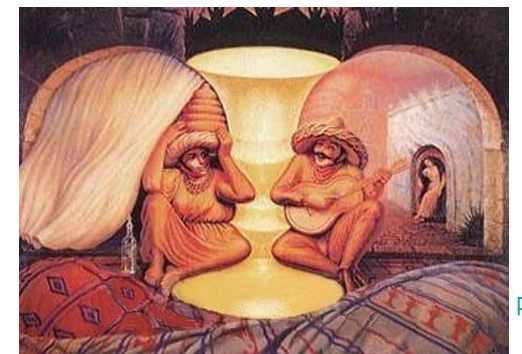
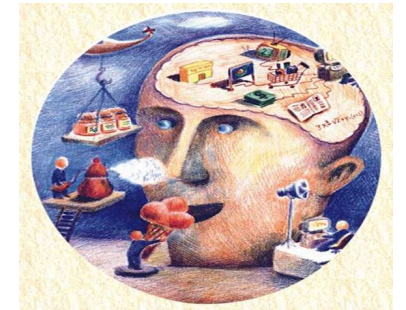
**You as an individual
BUT even more
YOU AS A COLLECTIVE,
international, TEAM,
playing a serious GAME**

**We have to rethink our R&I&E
programs, our individual
evaluations, projects,
publications, etc.**

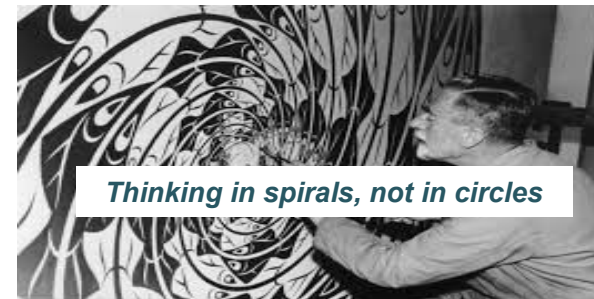
***Think about CERN, European
Space Agency, ..***

➤ Lessons learnt: new competences and skills

- ✓ Working with conceptual frameworks (about sustainable food systems)
- ✓ Develop visionary skills and working with scenarios (backcasting approaches, logical ways of prioritizing via an understandable methodology/process)
- ✓ Ask questions & Posing the right core question and leaving your comfort zone: think about contrasting futures, also the ones that you don't like
- ✓ Build teams with complementary skills: recognize, learn & respect them.
- ✓ To climb a higher mountain you need to pass a valley: be creative
- ✓ We have different perceptions! Include out-of-the-box thinkers



Thanks to MC Escher
Thanks to all colleagues, young and many years young
Thanks to you



<https://www.inrae.fr/en/bioeconomy>

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INRAE www.fffost.org/insights/News/1828324.aspx?t=Announcing-the-35th-EFFoST-International-Conference

