Living labs in the Mediterranean bio-economy:

why and how to create a network of inspiring and interactive demonstrators around the Mediterranean basin?

Hugo de Vries,

19 June 2019, ARIMNet conference

Content

- What are Living Labs?
- My 3 experiences with living labs?
- Why could a network of living labs contribute to research and innovation projects in the Mediterranean?
- How would such a network help in finding solutions for agri-food-environment problems locally & transnationally?
- What are major problems and what could be key potential Living Labs?
- ***Could we jointly start to imagine first Living Labs?***
- ***Could we validate the Living Labs via 'plausible' scenarios?***

An adventure together with Florence Jacquet, Marie-Jo Amiot-Carlin, Bernard Hubert, Fabrice Gouriveau, Marie Ollagnon, Anne-Laure Le Cam and Hugo de Vries

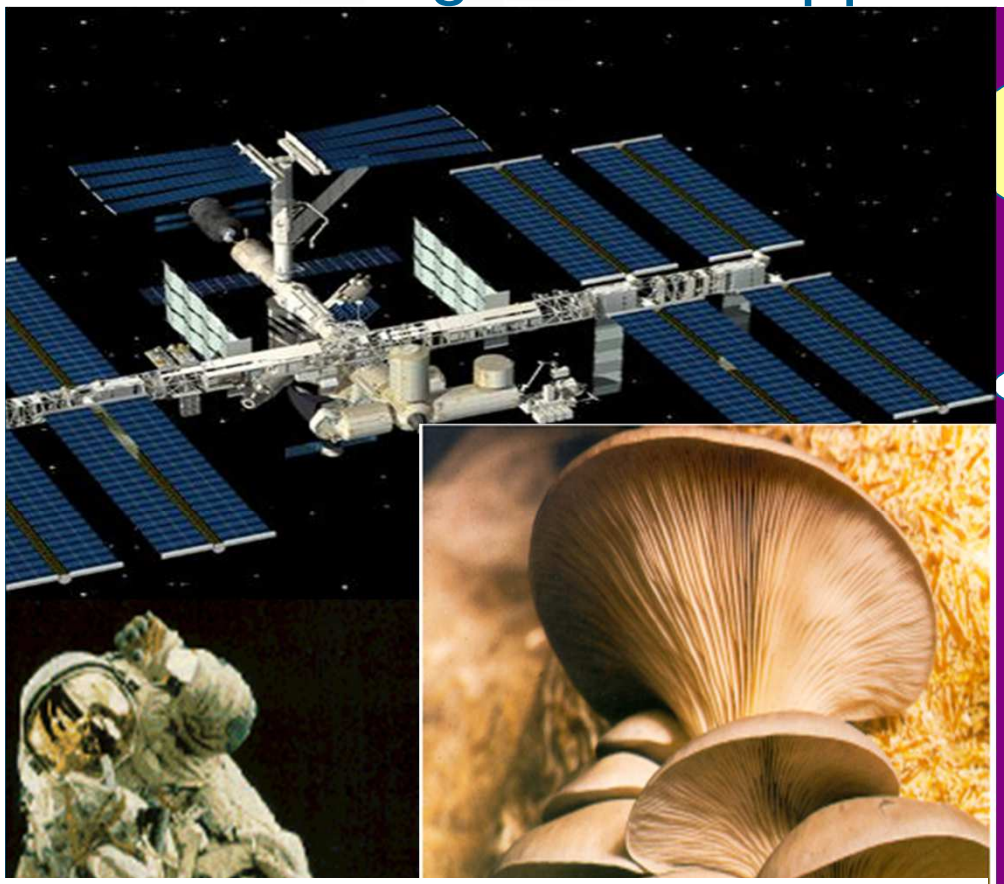
What are Living Labs?

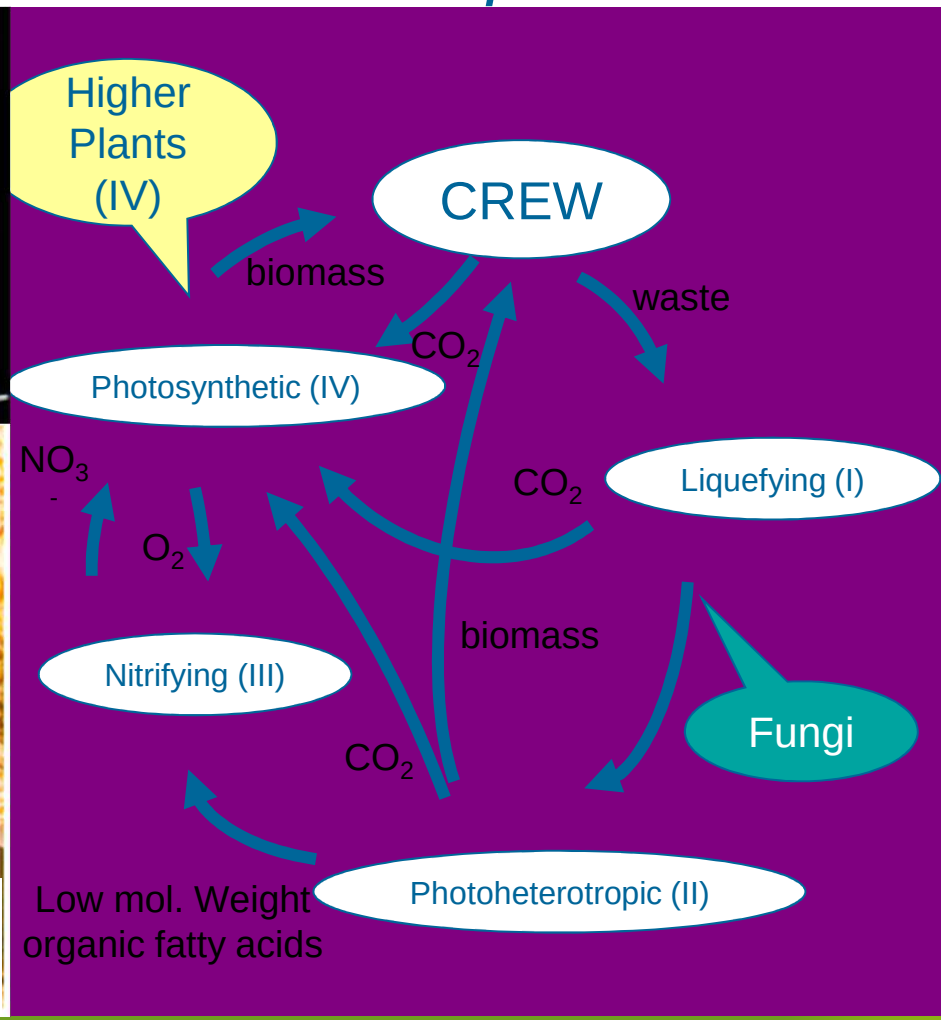
- A **living lab** is a research concept. A living lab is a user-centered, open-innovation ecosystem, often operating in a territorial context (e.g. city, agglomeration, region), integrating concurrent research and innovation processes within a public-private-people partnership.

- The concept is based on a systematic user co-creation approach integrating research and innovation processes > real life use cases.

My experiences with Living Labs (1) MELISSA Project in our division at Wageningen UR

Micro-ecological life support alternative *in space*





More information:
https://www.esa.int/spaceinimages/Images/2015/06/MELiSSA_loop_diagram

My experiences with Living Labs (2): The restaurant of the Future *"Really understanding consumer behaviour"*




- Restaurant for 200 persons
- Grand café
- Research kitchen
- Sensory laboratory
- Mood rooms & Mind room

Variables:

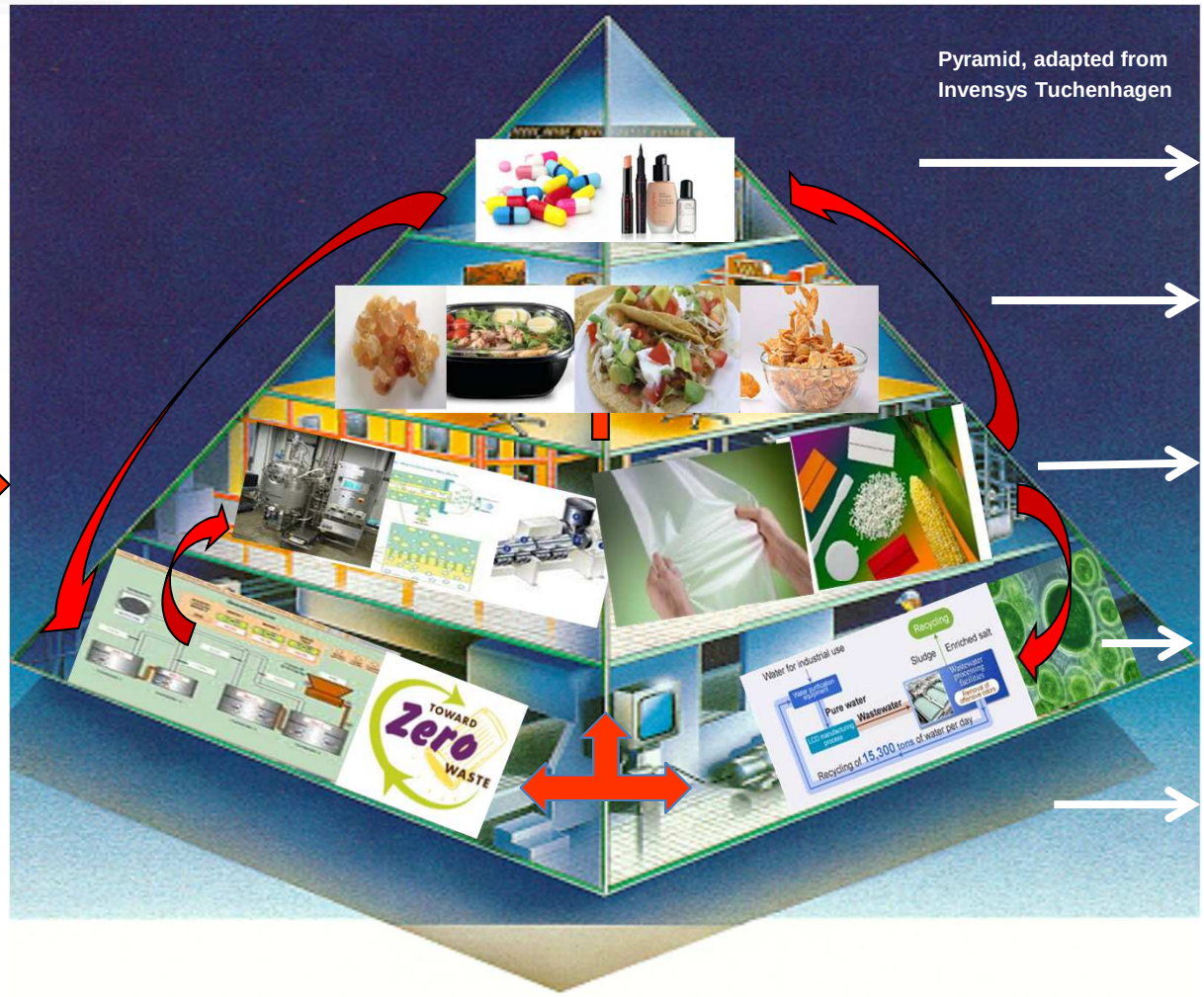
- Light
- Odor
- Temperature, pressure
- Product offerings, etc.

- 45 video cameras
- video analysis workstation

My experiences with Living Labs (3)

The pyramid of biomass valorization

Variety of renewable resources



High Value, low volume

Pharma & Cosmetics

Food & Feed

Bioplastics & polymers

Bulk chemicals and Fuels

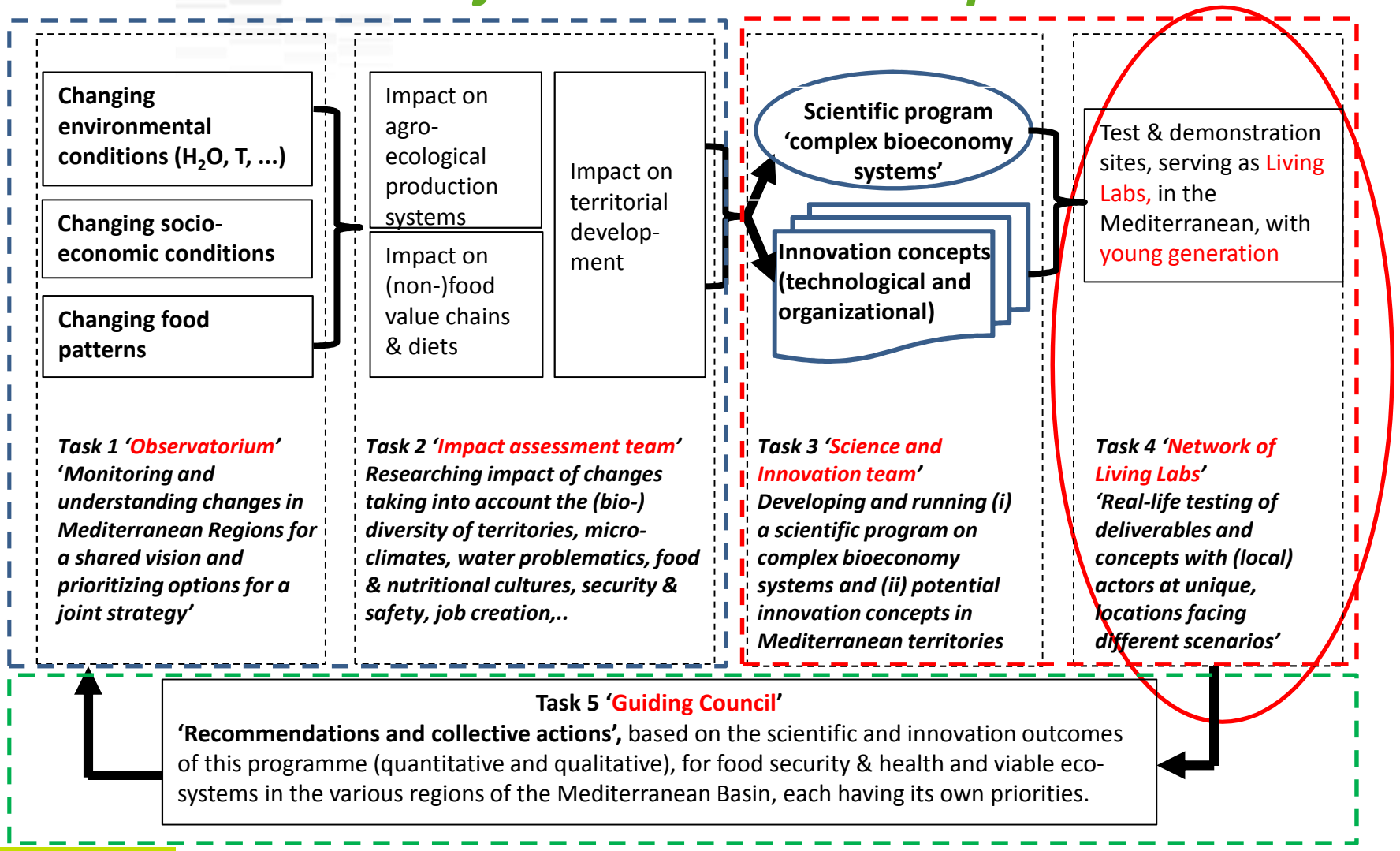
Energy & heat (storage)

Low Value, high volume

Partners:

Living Labs in the Mediterranean; **WHY?**

Part of a coherent work plan



How would such a network help in finding solutions for agri-food-environment problems locally & transnationally?

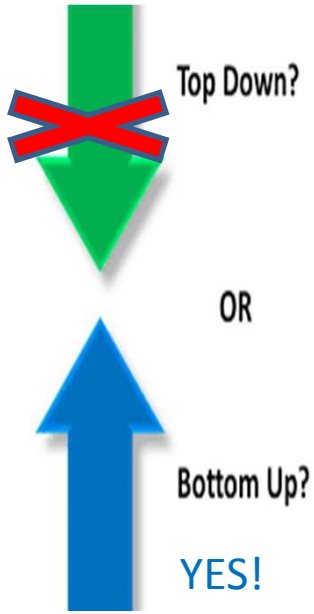
1. It is based on what is needed locally according to the local experts and fitting in their local culture
2. Those projects and solutions are adopted if stakeholders are really involved in the project
3. A network will allow exchanging best practices in the Mediterranean, leading to locally best adapted solutions
4. Images (visualization) are more convincing than words (reports); appreciated by young generation
5. Images are more inspiring in real cases (technologies, products, production fields, manufacturing sites, logistic centers, agriparks, nature environments, restaurants, …) & virtual designs (computer animations)

AND … AS KEY MESSAGE
'fully different approach'

- NOT jointly responding to a call for a project proposal with a predefined text

- **BUT locally defining the core question to be addressed and tested in a Living Lab === local priorities set the scene !**

- AND then sharing best practices in between Living Labs in the Mediterranean Basin (to learn from and to help each other)



What are major problems and what could be key demonstrators? (1)

- Shortage of water
- Malnutrition
- Import
- Biodiversity loss
- Climate change
- ……

- Loss of food culture heritage (the Mediterranean diet)
- Waste
- Unused by-products
- …..
- *Poverty, Political tensions*

What are major problems and what could be key Living Labs?

- Oasis research center,
- New life in desert center
- Mediterranean Artificial Intelligence Lab
- Mixed olive, wine, date agripark
- Pyramide of agro-value
- Hortus Botanicus for unique Mediterranean species
- Mediterranean diets resto's
- Dry & Flooding demo center
- Biodiversity park
- Urban healthy village/cartier
- Mediterranean child canteen
- Pine tree biorefinery mountain center
- Micro-forest desert park
- The entrepreneurial Mediterranean flair & innovation center
- Clean agro-tourism center
- Mediterranean natural colors center
- The Mediterranean Design Vitrine
- Algae food & non food test center
- Mediterranean circular economy park
- Terrasse agroproduction demo park
- Trade demo island for cooperation
- Water-recycling greenhouse demo
- New high tech 'Ponts du Gard'
- Underground production park
- 100% solar energy food system center
- Stand-alone mobile storage concept
- Mediterranean varieties library
- Mediterranean miniature agripark
- The aquaculture-algae-forest-hub
- The mobile farm
- Floating farms
- The natural fibre Partenon living lab
- The bioeconomy theatre plays
- Soil complex systems center
- ……..

Or in images

The bio-refinery port

The sustainable tourism center

The green (agro-) logistic hub

Virtual biomass R&D center

Algae park

Pyramide of bio-based products

Green & social market

The eco - health institute

The biosphere and tropical gardens

The reference wineyard for all bioproducts

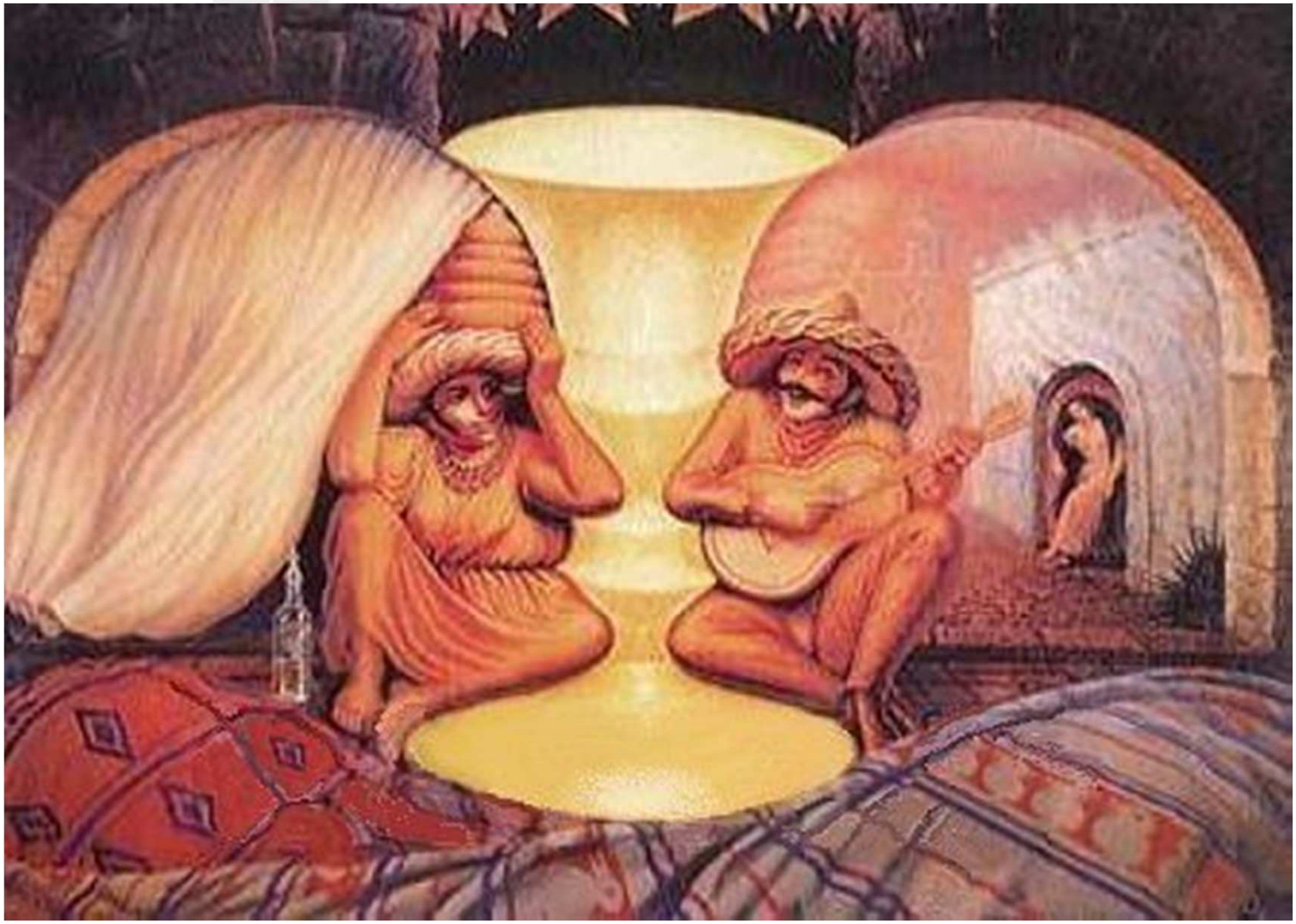
INRA SCIENCE & IMPACT

UMR iAte ingénierie des Agropolymères & technologies émergentes

Based on idea sharing with Christian Sanchez, Eric Dubreucq and Marie Ollagnon, UMR IATE

Or inspirational architectural designs

However, take care: images can differently be interpreted



Could we jointly define first options for Living Labs? Could we validate these options via 'plausible' scenarios?

- **Creative workshop : Living labs: Let's create our common future!**

- *Remember: before important insights and results of agri-food projects can be appreciated and inspirational for others, they should preferably be visualized and interactively accessible. This could be achieved through a network of demonstrators spread across the Mediterranean serving as living laboratories to address key topics.* ***Designed by whom? By yourself in this workshop!***

The Scenario Development approach*

** Adopted from Shell and Wageningen UR scenario development thinking*

The goal of scenario thinking

Scenario's are made to better understand current options (= your imagined Living Labs) in the view of potential futures

To look in the future is not easy….

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

They really believed it ...

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

Thomas J. Watson, chairman of IBM, 1943

They really believed it …

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

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

They really believed it …

"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

Key characteristics of scenario's

- 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 the reader

- All in all scenarios should provoke thinking rather than provide answers per s.

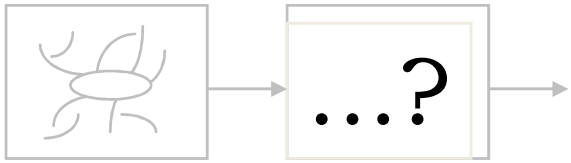
Recognize that the "real" future will not be any of the scenarios, but that it will contain elements of all of our scenarios

An overview of the scenario process

Phase I
Getting focus

1: Scanning the issues at hand

2: Formulating key question and time horizon



Before the workshop this part has been prepared by the organisers: **these slides**

Phase II:
Developing the scenario framework

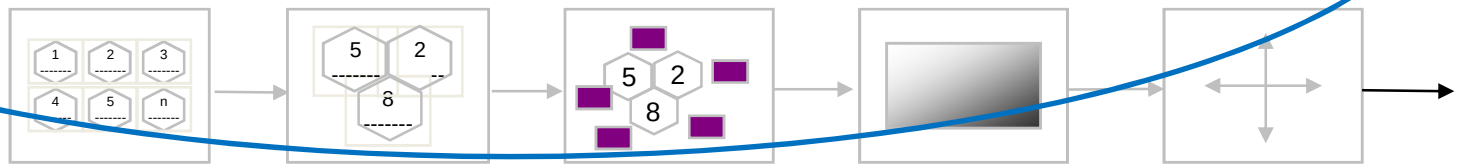
3: Mapping (un)certainties

4: Clustering the uncertainties

5. Distilling the driving forces

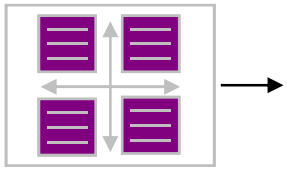
6: Scoring the variables

7: Selecting scenario dimensions



Phase III
Building the scenarios

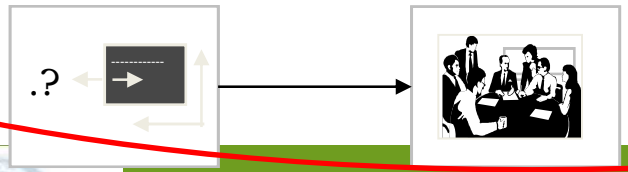
8: Fleshing out the scenarios



Phase IV
Working with the scenarios

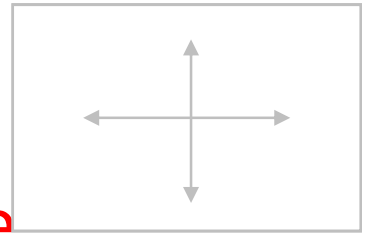
9: Answering the key question

10: Judging the options and setting the strategic agenda / planning



Your activities in this workshop

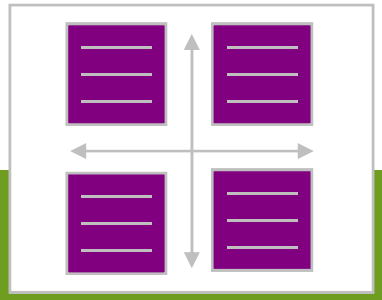
Actions (I + II):



1. Select as a group your preferable core question/theme, axes and scenarios out of the list that is provided by the organizers.

- *Note 1: the axes serve as tools to position the scenarios*
- *Note 2: the core question provides a 'direction' (domain/theme) for the scenarios*

2. Discuss the four scenarios that are proposed and that fit in the two-dimensional plot: check if they are useful or should be changed (give them a short name!)



Actions (III):

3. **Work** with the scenarios to validate Living Labs:

   i. List the 4 scenarios next to each other (see next slide)

   ii. Use core question/theme to imagine ***living labs***

   iii. Check if each living lab either fits very well, neutrally or is in strong conflict with the scenario (process called windtunneling)

   iv. Check if such an option (=Living Lab) would fit in your country/region

   v. Prioritize the options (=Living Labs) in order of best fit with the scenarios.

Windtunneling....

Living Lab 1, 2, ..

Strategic Potential Living Labs

	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	- -
+		- - -

Example

The core question:

*(for example related to the **theme/domain of internal Mediterranean Trade of Fresh Products**)*

How will I get my **fresh** Fattoush Salad with Bab Ghanoush Dip from Leban in Portugal, today and tomorrow?

The core question: How will I get my fresh Fattoush Salad with Bab Ghanoush Dip from Leban in Portugal, today and tomorrow??

Tomorrow (Boat)

Shop in an affordable, **green** way

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

Think first about the **NEXT GENERATION**

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

Budget — Planet

Live a **CONVENIENCE** lifestyle

(A delicious convenience meal at your table directly at your demand)

Favour production in your **OWN GARDEN**

(Portugal starts to produce the fresh ingredients themselves)

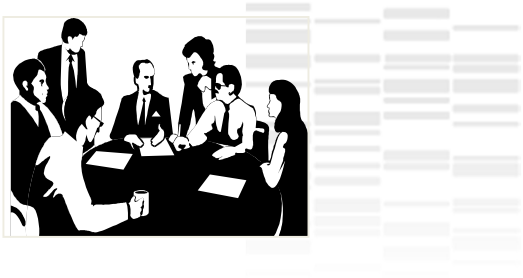
Today (airplane)

Windtunneling…. > how to find relevant living labs to address core question?

Strategic options = potential demonstrators

	GREEN	NEXT GENERATION	OWN GARDEN	CONVENIENCE
1. New agro-logistic test center	++	++	- - -	+++
2. Small mobile scale greenhouse	++	+ +	+ +	0
3. Children restaurant	+ +	+ + +	+	-
4. World reference market	+ + +	- -	- -	+ +
5. 'salad preparation platform'	++	+++	-	0
6. New packaging innovation center	+ + +	+ ++	0	+

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



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

3. Continue to work with the Living Labs:

i. Check if such an option (Living Lab) would fit in your country/region

ii. Prioritize the Living labs in order of best fit with the scenarios.

Program for the ateliers

- Introduction and repetition of the process (5-10 min)
- Familiarize with and/or modify the scenarios and axes in relation to a core question (30 min)
- Propose Living Labs (= options) for each scenario; ID card for each LL filled in (40 min)
- Prioritize living lab via windtunneling sheet (25 min); include fit in your region:
- Presentation of outcomes to all participants in plenary hall

The animators:

Florence Jacquet, Marie-Jo Amiot-Carlin, Bernard Hubert, Fabrice Gouriveau, Marie Ollagnon, Anne-Laure Le Cam and Hugo de Vries

Now, it's YOU!

Many thanks for your attention

And GOOD LUCK and INSPIRATION