

# Cropbooster-P, work package 5 workshop

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WELCOME and THANK YOU!

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and

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Francesco Loreto



# Cropbooster-P.....

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has to come up with a plan to sustainably improve Europe's crop yields (or their productivity) while preserving nutritional quality.

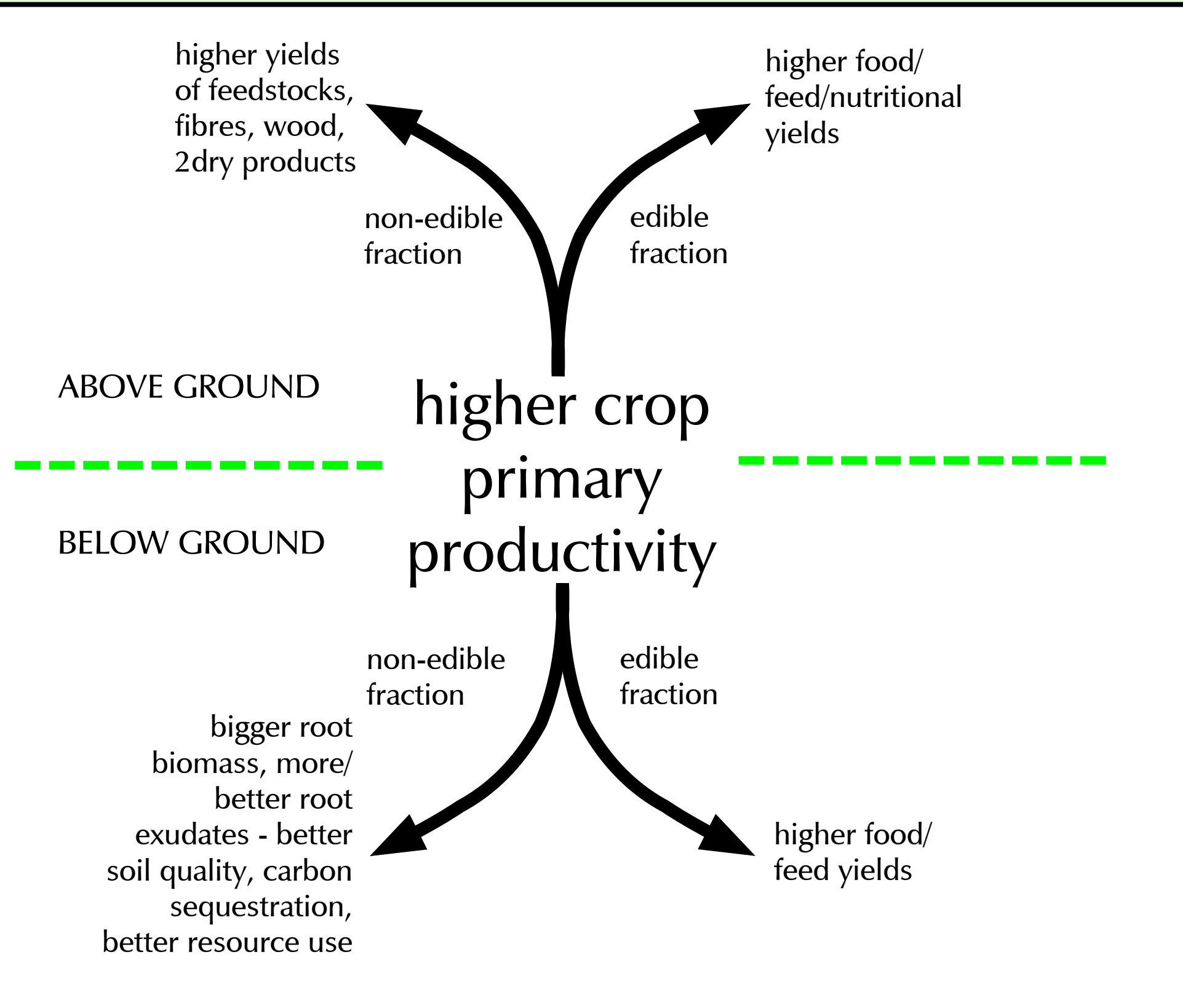
And times are changing.....

**Mid-term:** climate change, CO<sub>2</sub> (etc); our industrial base should change; we have ambitions to reduce our pressure on the environment - etc

**Longer term:** - added concerns about diminishing global food and nutritional security



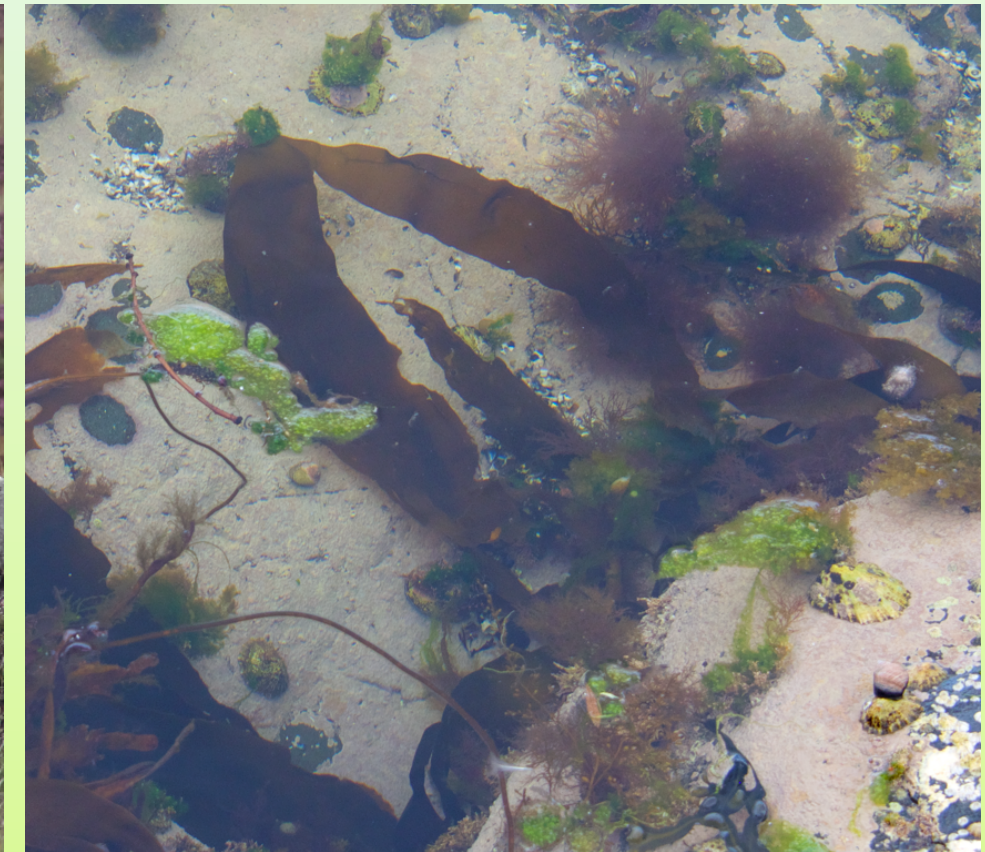
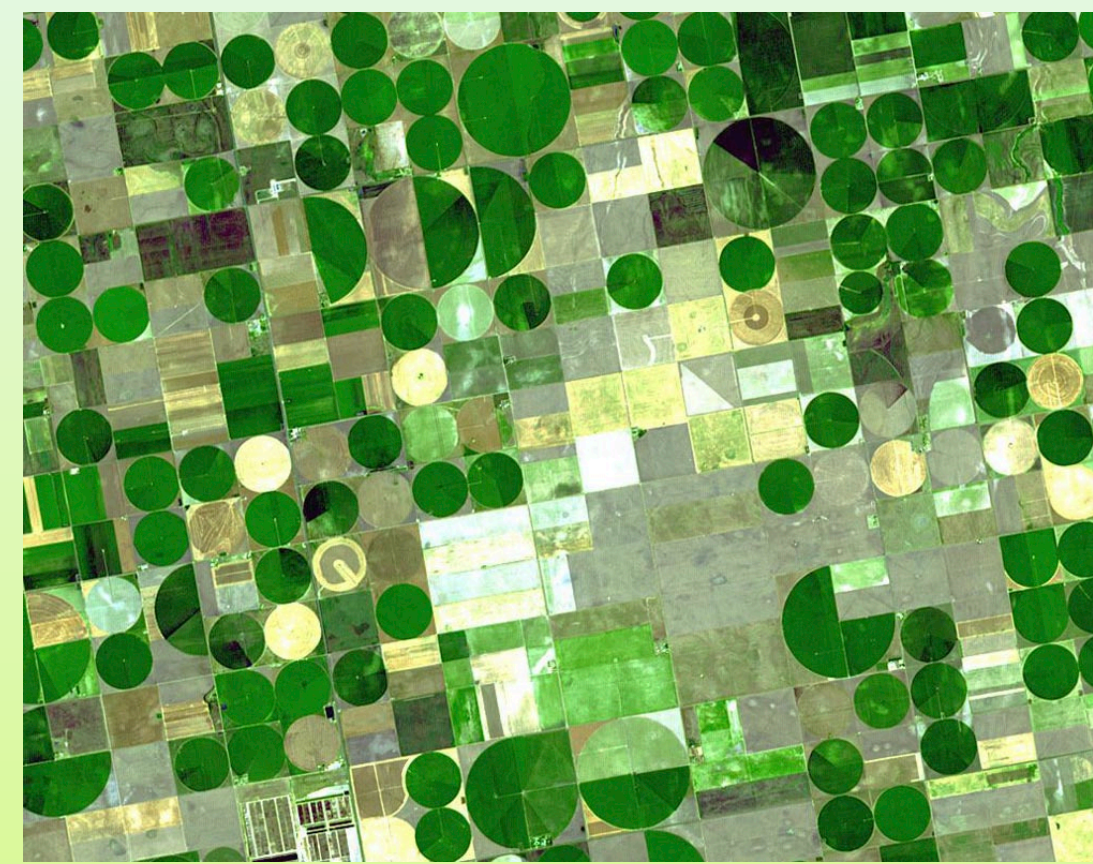
# Agriculture and better crops will play a role easing this change





# Agriculture and Crops - very diverse and complex

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# Work package 4 - the previous two days

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The plant biological options for sustainably improving yield and ways of making crops more nutritious





# Now for the Workpackage 5 workshop

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the bigger picture: the current state of crop production and the context for future crop improvement:

1. Climate change
2. The current and future situation with crop yields in Europe and beyond and the yield gap
3. The future crops of Europe
4. Crop resilience
5. Natural variation as a source for crop improvement
6. The options for breeding in Europe
7. Future Phenotyping options





# today's programme

<b>Day 3 (June 10th):</b>	<b>Speaker and topic</b>	<b>title</b>
9:30 - 9:40	Introduction, Jeremy Harbinson	
9:40 - 9:50	short pitches	
9:50 - 10:10	Resilience; Matthew Paul	Improving resilience in crops: can we combine yield with resilience?
10:10 - 10:30	Resilience; Hatem Rouached	How to improve plant resilience to stress: Lessons from nutrient homeostatic interactions
10:30 - 10:50	Resilience; Discussion	
10:50 - 11:00	break	
11:00 - 11:20	Limits to yield; what does modelling tell us?: Frank Ewert	Drivers of Crop Yield Variability and Change: Analyses through support of modelling
11:20 - 11:40	Limits to yield; what does modelling tell us?: Laura Dixon (presenter) and Andy Challinor	Aligning crop modelling with plant breeding and genetics
11:40 - 12:00	Limits to yield; what does modelling tell us?: Discussion	
12:00 - 13:00	Lunch	
13:00 - 13:20	Phenotyping: Sacha Mooney	Imaging Root-Soil Interactions
13:20 - 13:40	Phenotyping: Francois Tardieu	Multi scale phenotyping for crop performance in precise environmental scenarios: combining phenomics in controlled conditions with multi-site field experiments
13:40 - 14:00	Phenotyping: Discussion 1	
14:00 - 14:20	Phenotyping: Roberto Tuberosa	Phenotyping for root system architecture in the circular genomics era
14:20 - 14:40	Phenotyping: Martin Trtilek	Our road to the future of phenomics: The actors are Neutron, Raman and X-Ray
14:40 - 15:00	Phenotyping: Discussion 2	
15:00 - 15:15	Break	
15:15 - 15:35	Limits to Yield 2: Martin van Ittersum	Crop yields and opportunities for their increase in Europe
15:35 - 15:55	Limits to Yield 2: Matthew Reynolds	Yield limiting physiological traits across different environments
15:55 - 16:15	Limits to Yield 2: Discussion	
16:15 - 16:45	Open discussion	





# a small change

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Day 4 (June 11th):	<i>Speaker and topic</i>
9:30 - 9:40	Introduction, Jeremy Harbinson
9:40 - 9:50	short pitches
9:50 - 10:10	Future Breeding options: Genome editing: promises and limitations for plant breeding Peter Rogowsky; Research Director at INRA / ENS Lyon, France

# Final messages

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For every two talks there will be a 20 minute discussion - SO at the end of the first talk of each pair don't ask anything more than a simple question!

Please contribute to the discussions!

Raise your hand if you want to ask something or comment on something.





