

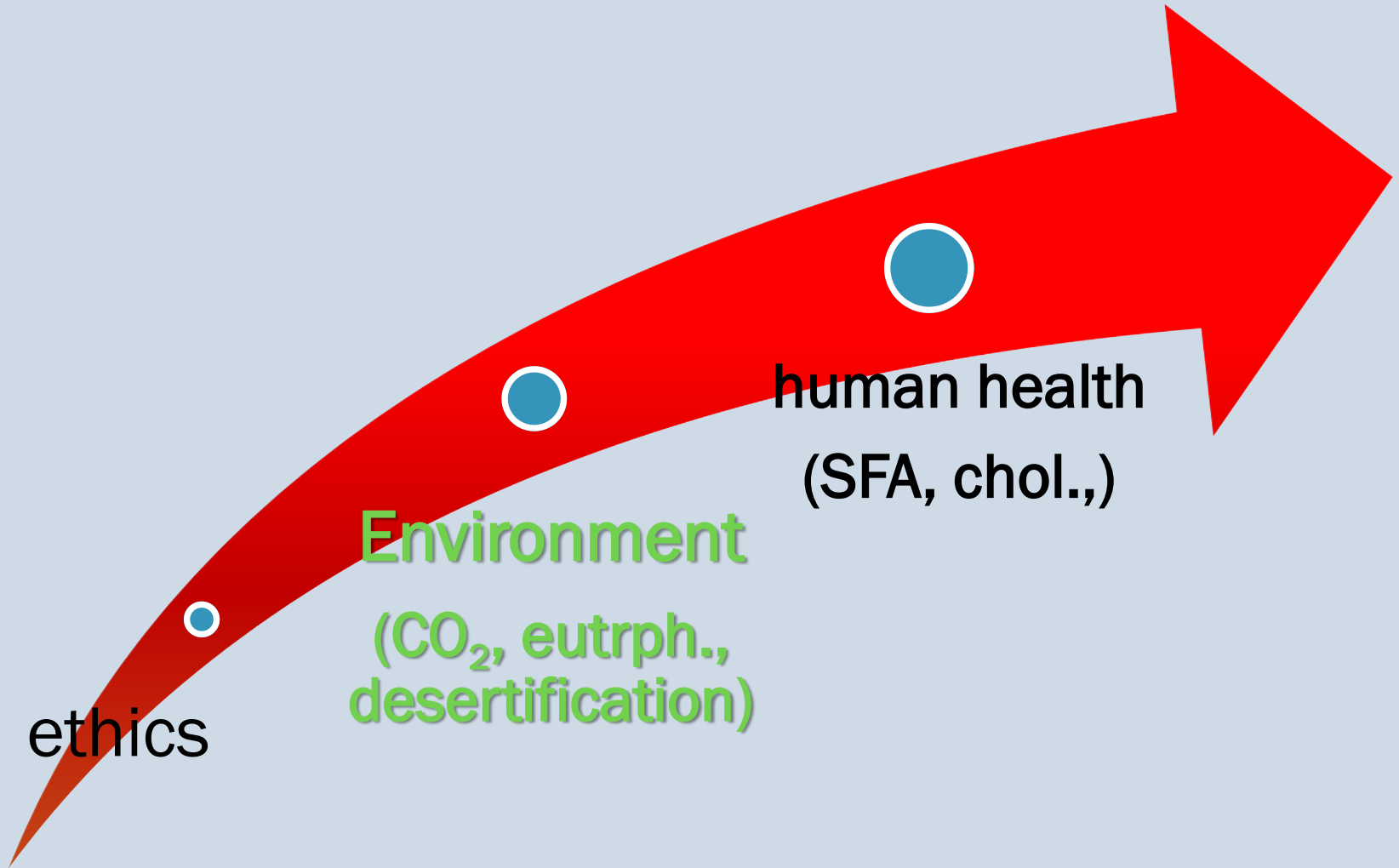
# Sustainability in rabbit production

## General remarks

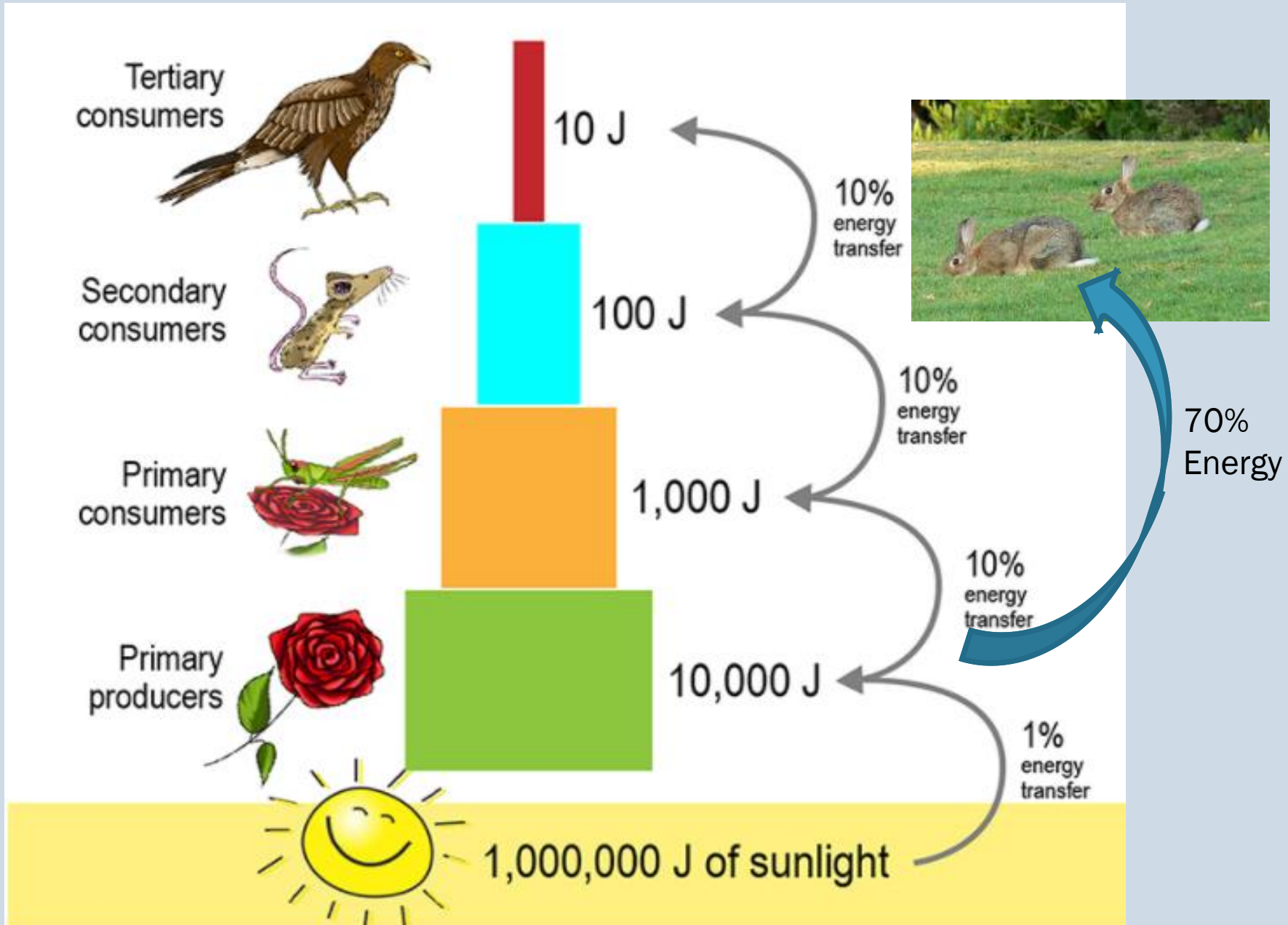
Cesare Castellini UNIPG

[cesare.castellini@unipg.it](mailto:cesare.castellini@unipg.it)

# Pillars of animal production



# Main law of ecology



# Vegetal vs animal: bio-magnification

	vegetals	(rabbit) meat
Vitamin D <sub>3</sub>	-	+++
Vitamin B <sub>12</sub>	-	+++
Iron (heme)	-	+++
PUFA	++	+
LCPUFA	-	++
High quality protein	-/+	+++
<b>SFA</b>	<b>-/+</b>	<b>+++</b>

# Nutritional density of foods

## What do we get from our food choices?

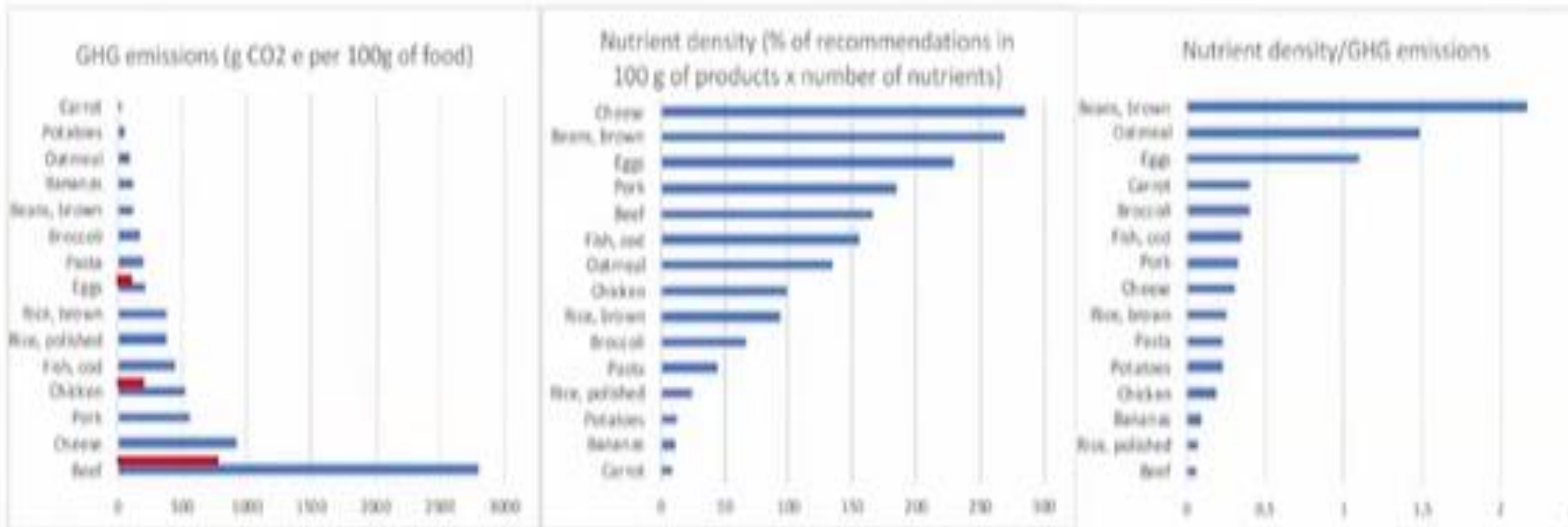


Figure 2. Classification of foods based on their nutrient density and their GHG emissions (adapted from Bruun Werner et al., 2014)

# Dietary habits of animals & food competition

Herbivore	Omnivore	Seed eating
Cattle	Pig	Chicken
Sheep. goat		Turkey
Rabbit		



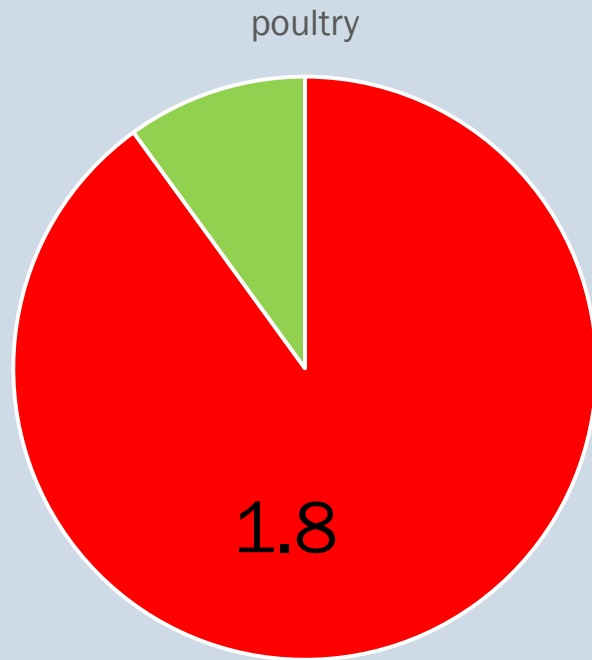


# Feed conversion

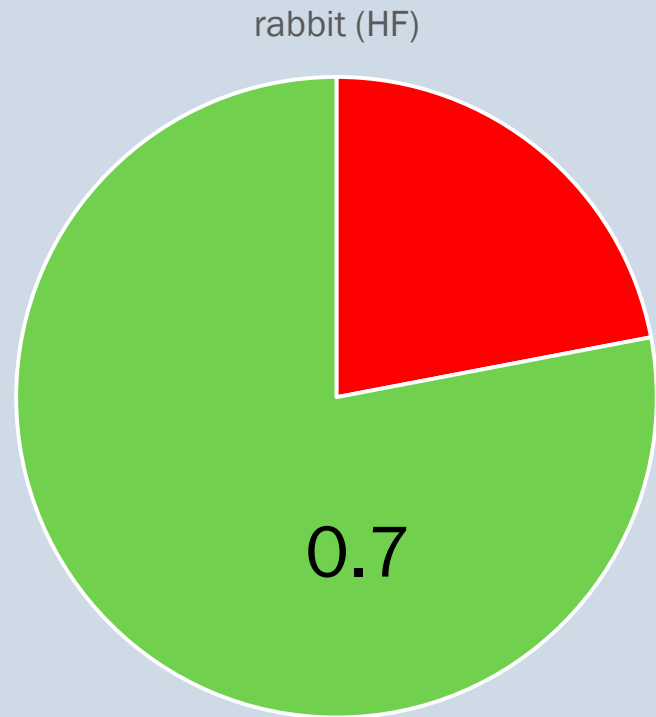


	Poultry (free range)	Rabbit
FCI	2.7-4.5	3.5-4.5
Protein	2.8	3.0

# Poultry vs rabbit



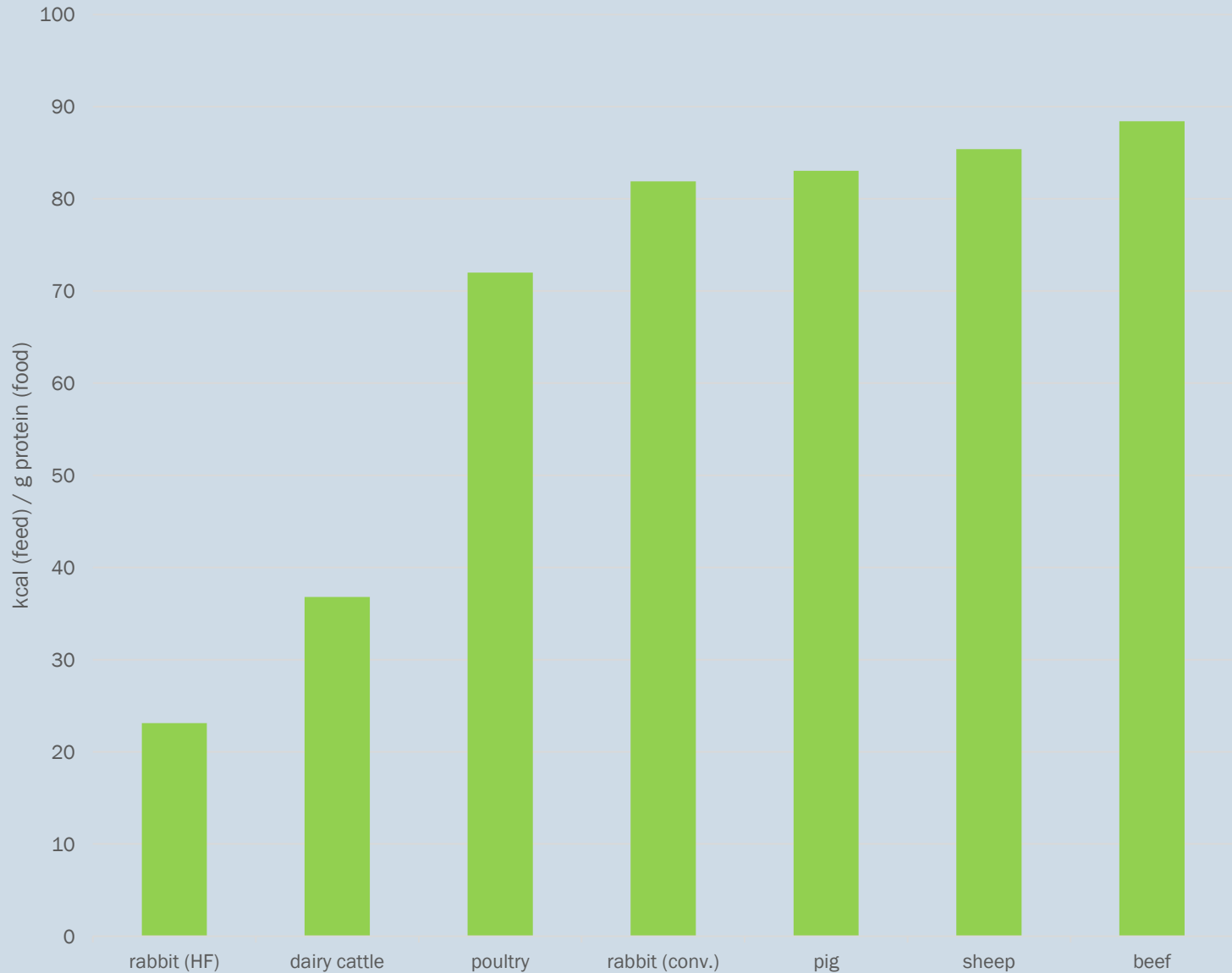
■ competition ■ no comp



■ competition ■ no comp



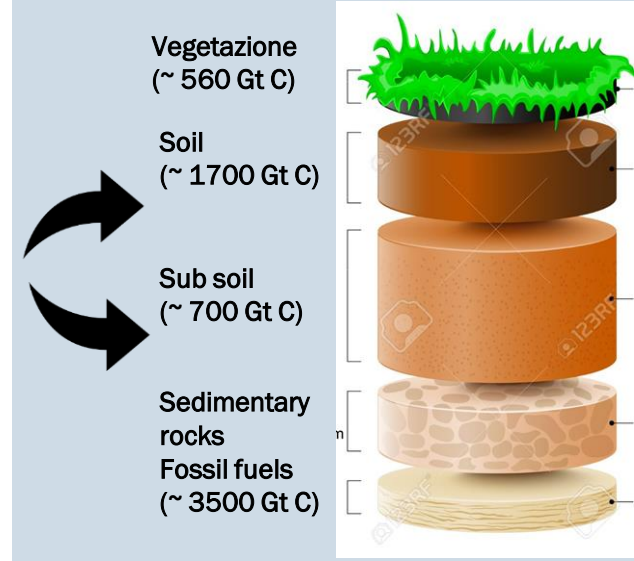
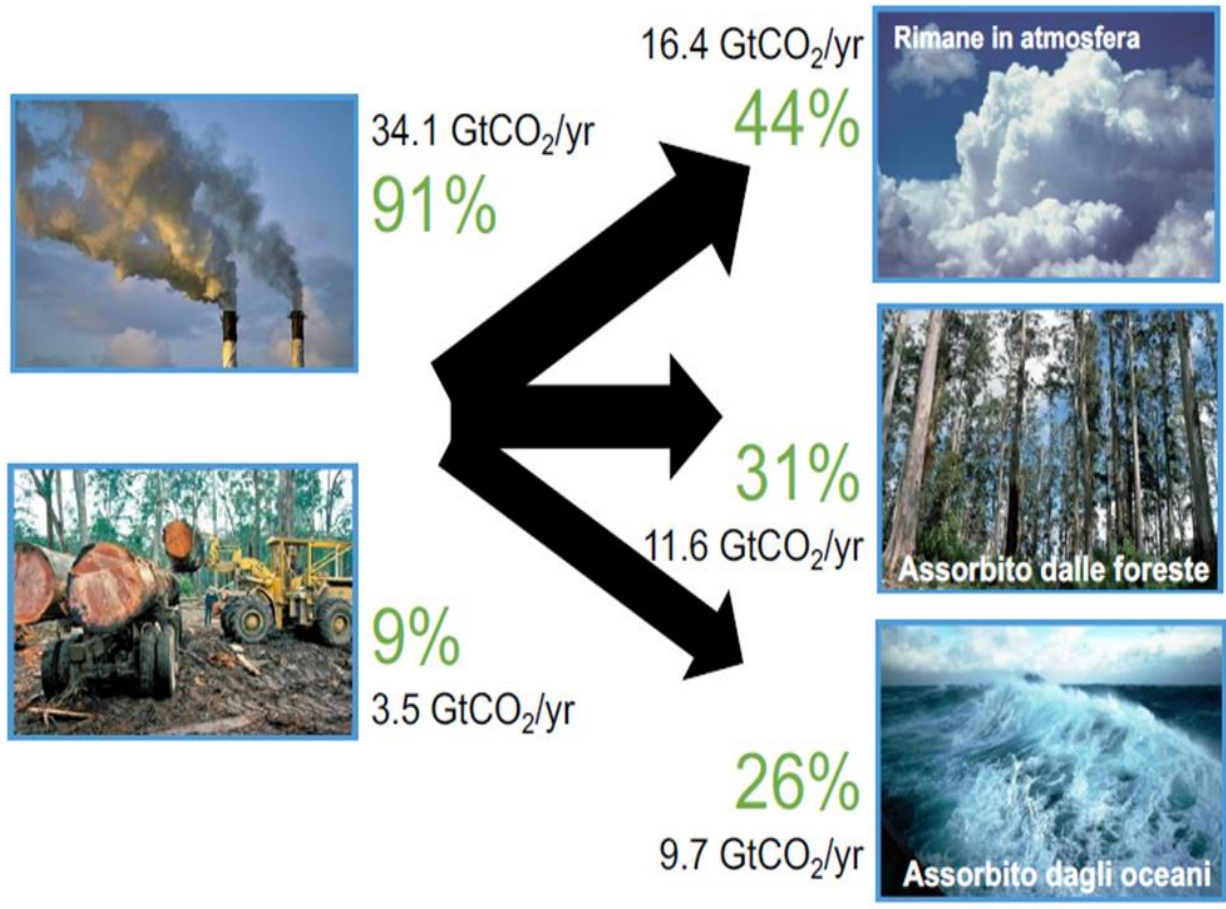
# Kcal of non competitive feed for producing 1 g protein



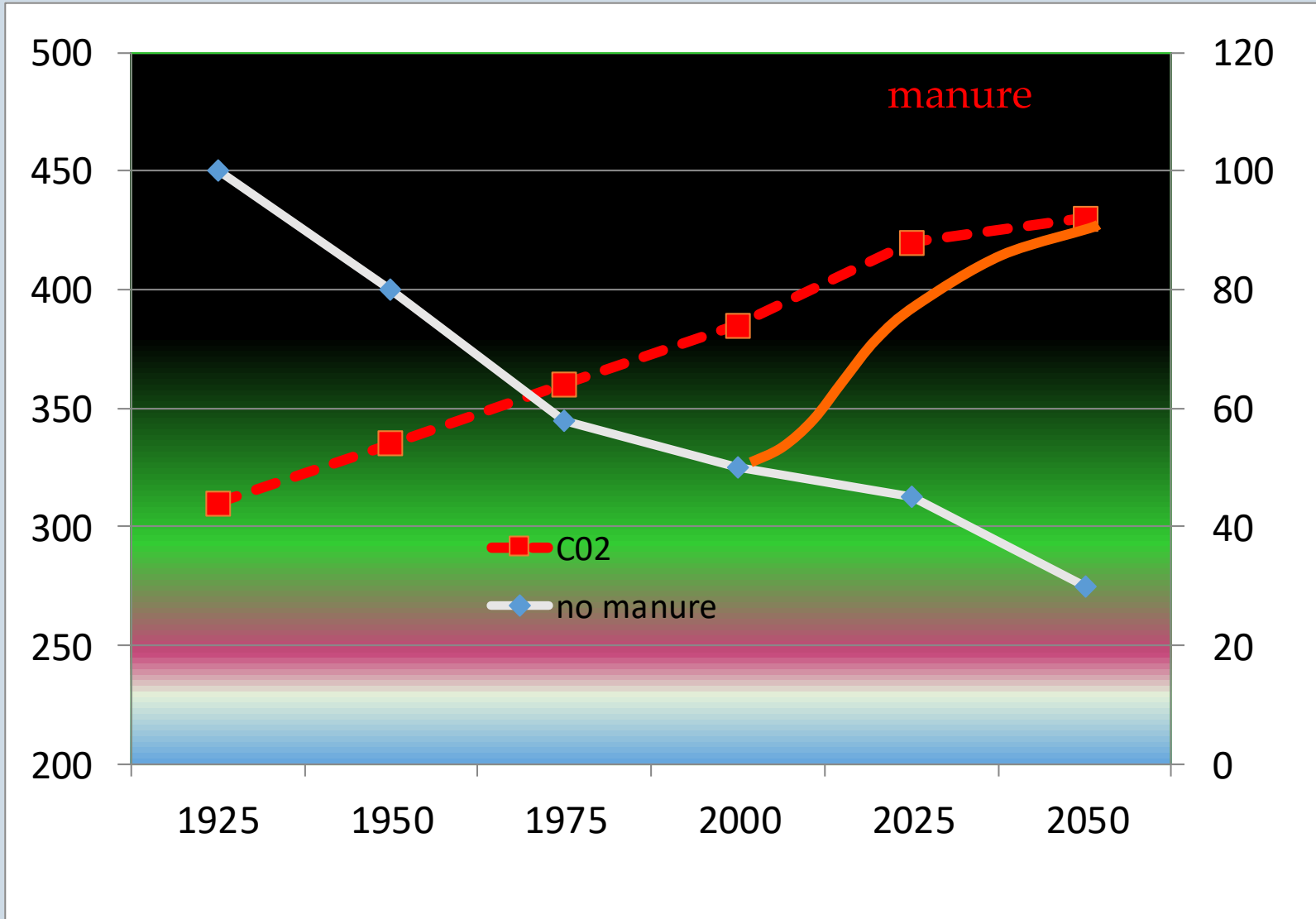
# Environmental impact

# C source

# C sink



# Organic matter soil/CO<sub>2</sub> air



# Environmental impact: role of organic matter





<https://youtu.be/vpTHi7O66pl>



# Regenerative agriculture

Year 0

Years 1-3

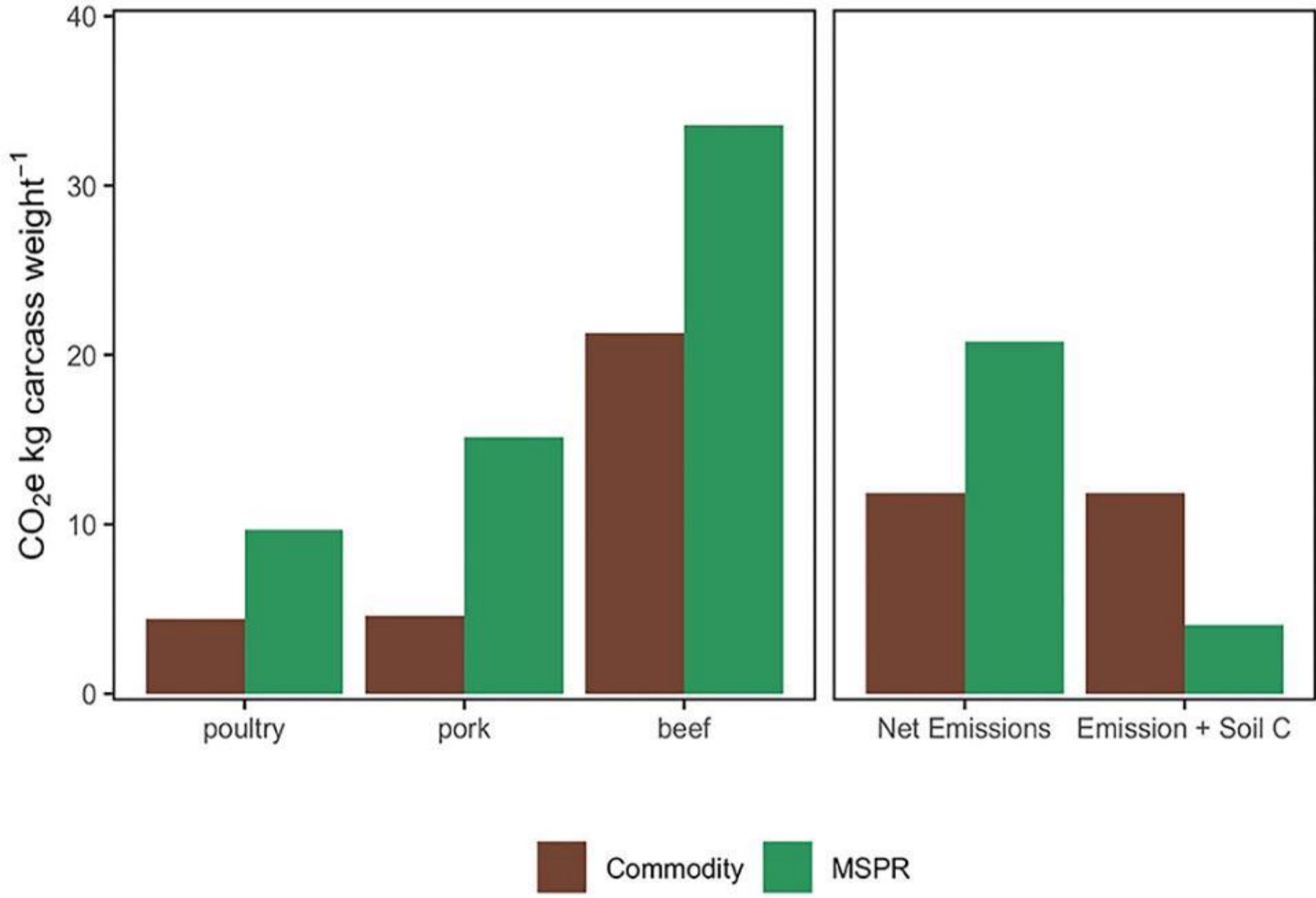
Years 3+

Advanced  
Regeneration

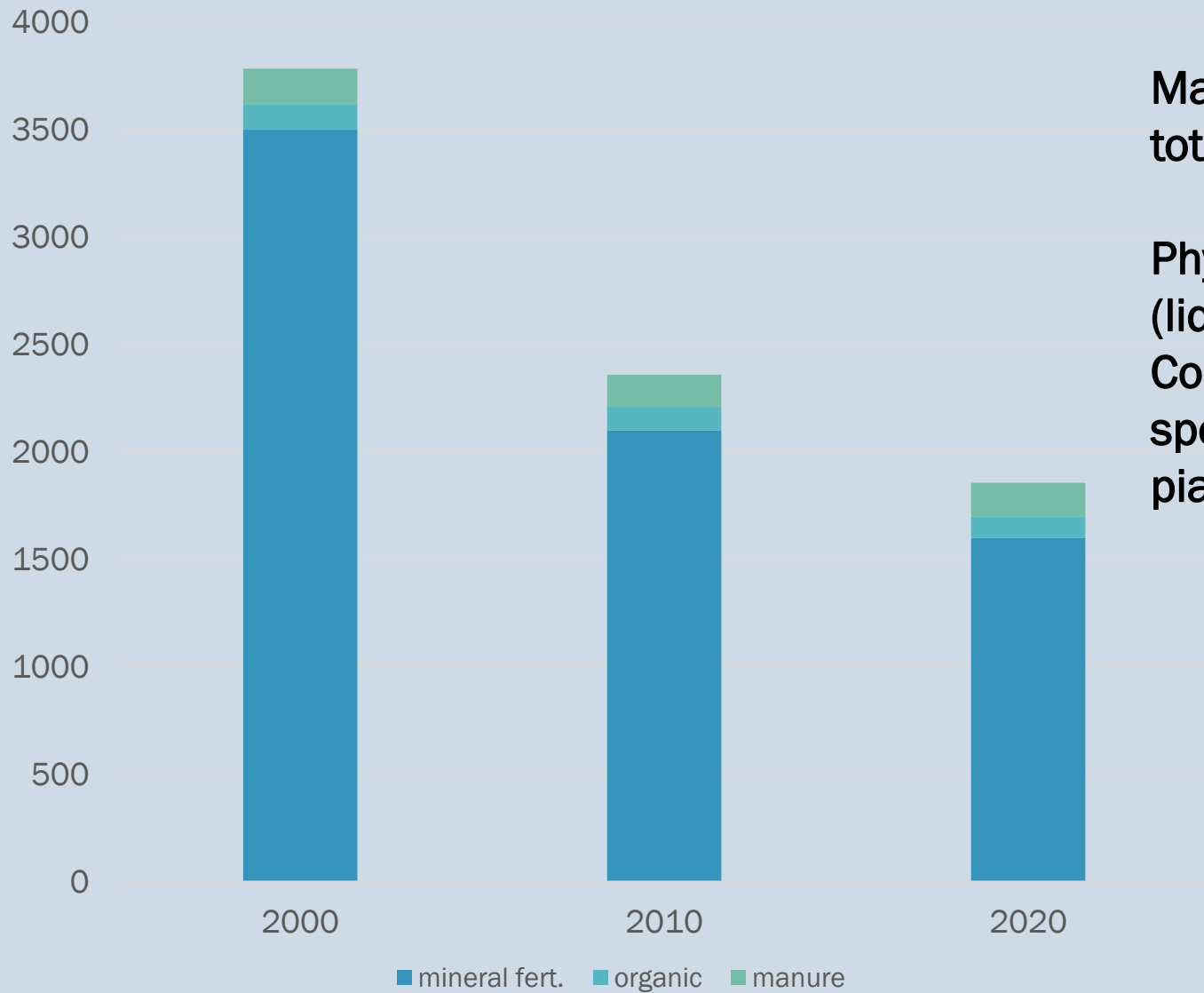




# CO<sub>2</sub> in standard and regenerative agr.



# Use of fertiliser in Italy (t)



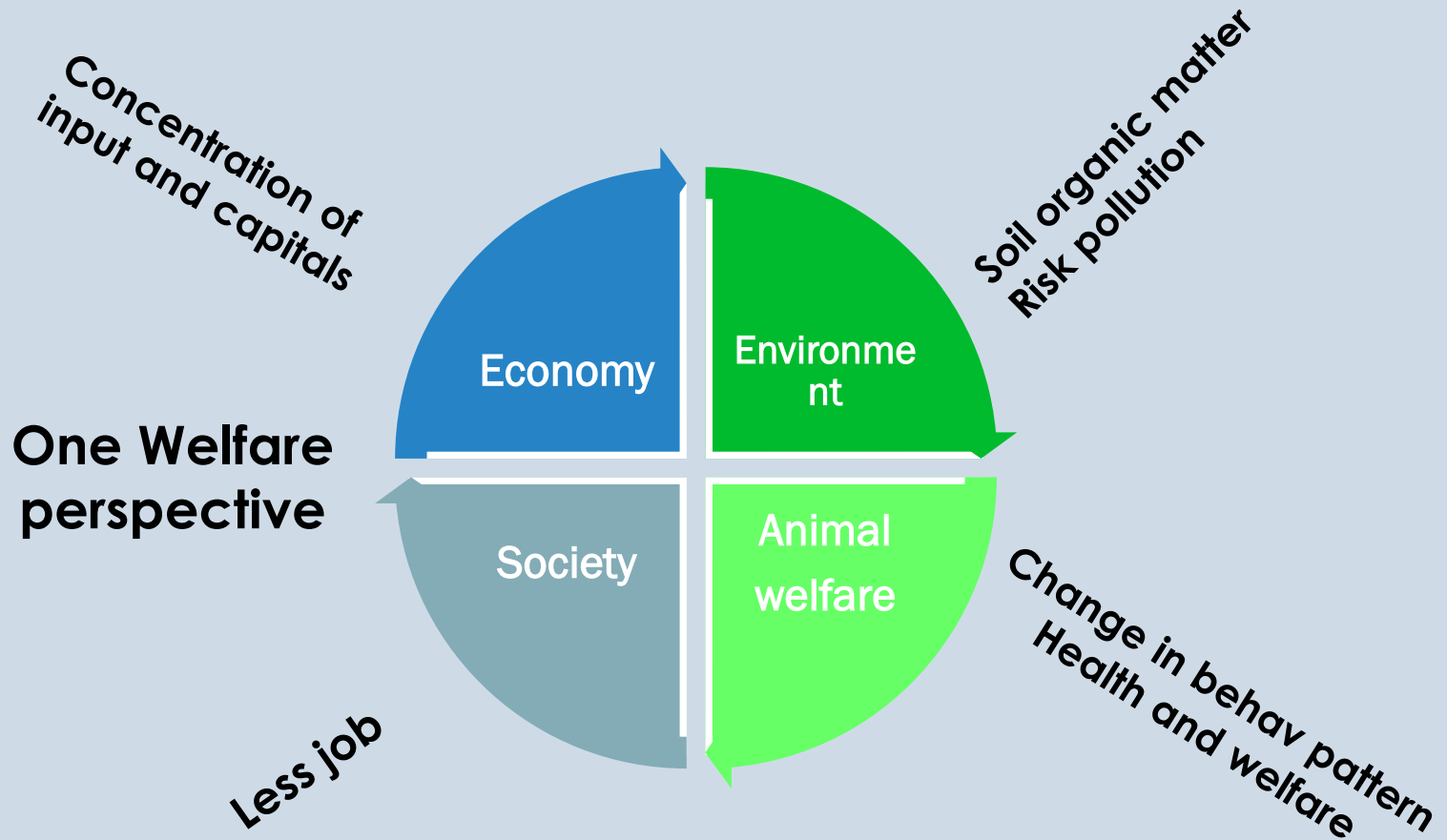
**Manure about 8-9% total**

**Physical aspect (liquid, solid, ..)  
Concentration in specific areas (57% pianura padana..)**

# Chemical composition faeces

	<b>Rabbit</b>	<b>Poultry</b>	<b>Pig</b>	<b>Beef</b>
Dry matter %	<b>26.0</b>	21.7	7.4	8.3
Organic matter %	<b>18.2</b>	16,0	5.5	6.5
N total ‰	<b>8.5</b>	13.5	5.5	3.7
NH <sub>4</sub> ‰	<b>1.9</b>	4.5	3.3	1.8
P <sub>2</sub> O <sub>5</sub>	<b>13.5</b>	8.2	4.0	2.3
K <sub>2</sub> O	<b>7.5</b>	6.6	3.9	5.6

# Modern production systems produce a lot but with negative externality



# Conclusion

- There is room for rabbit production
- The balance between positive/negative outcomes mainly depends on how production factors are declined (diet, genetic strain, productivity etc.)
- The whole analysis of sustainability requires a multicriteria approach (one welfare).