

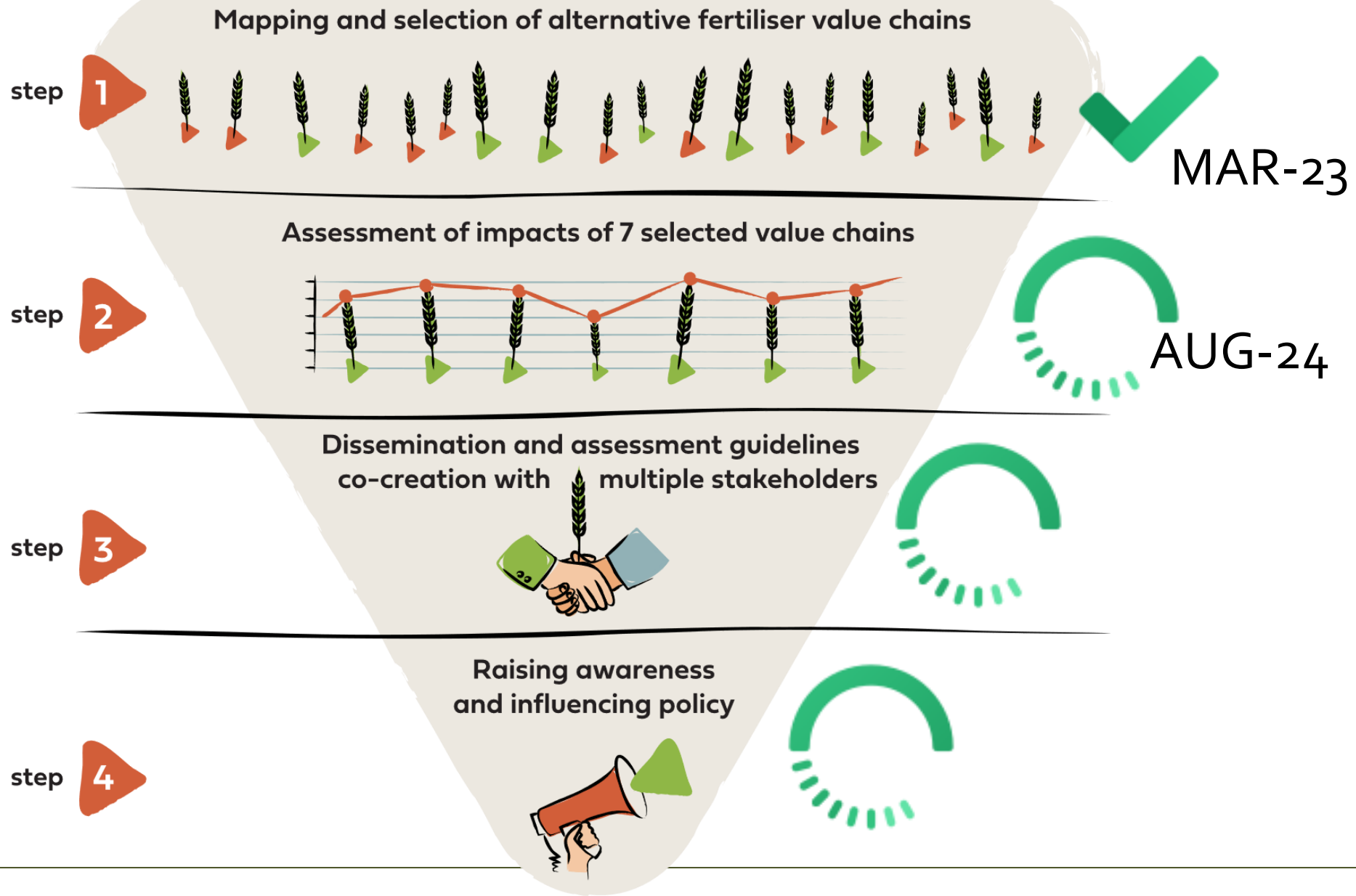
FER-PLAY Seminar

CIRCULAR FERTILISERS FOR HEALTHY SOILS: DRIVERS AND CHALLENGES

18 Apr 2024

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Our consortium

FER-PLAY consortium gathers key representatives along the alternative fertiliser value chains:



ALTERNATIVE FERTILISER PRODUCERS:


  Digestate from all main secondary raw material types, 183 members



  Compost from wastewater, sewage sludge, bio-waste, 120 members

  Struvite from wastewater, sewage sludge, digestate & manure

FARMERS (END-USERS) ASSOCIATIONS:

  Conventional farmers, 1.5 M members



  Organic farmers, 100,000 members

  Young farmers, +200,000 members



LOCAL ADMINISTRATION ASSOCIATIONS:



  Pan-European network of cities & regions for sustainable resource management, +100 members

IMPACT ASSESSMENT & AGRONOMY EXPERTS:

  R&I in waste valorisation & LCAs realisation

  R&I in wastewater treatment & LCAs realisation

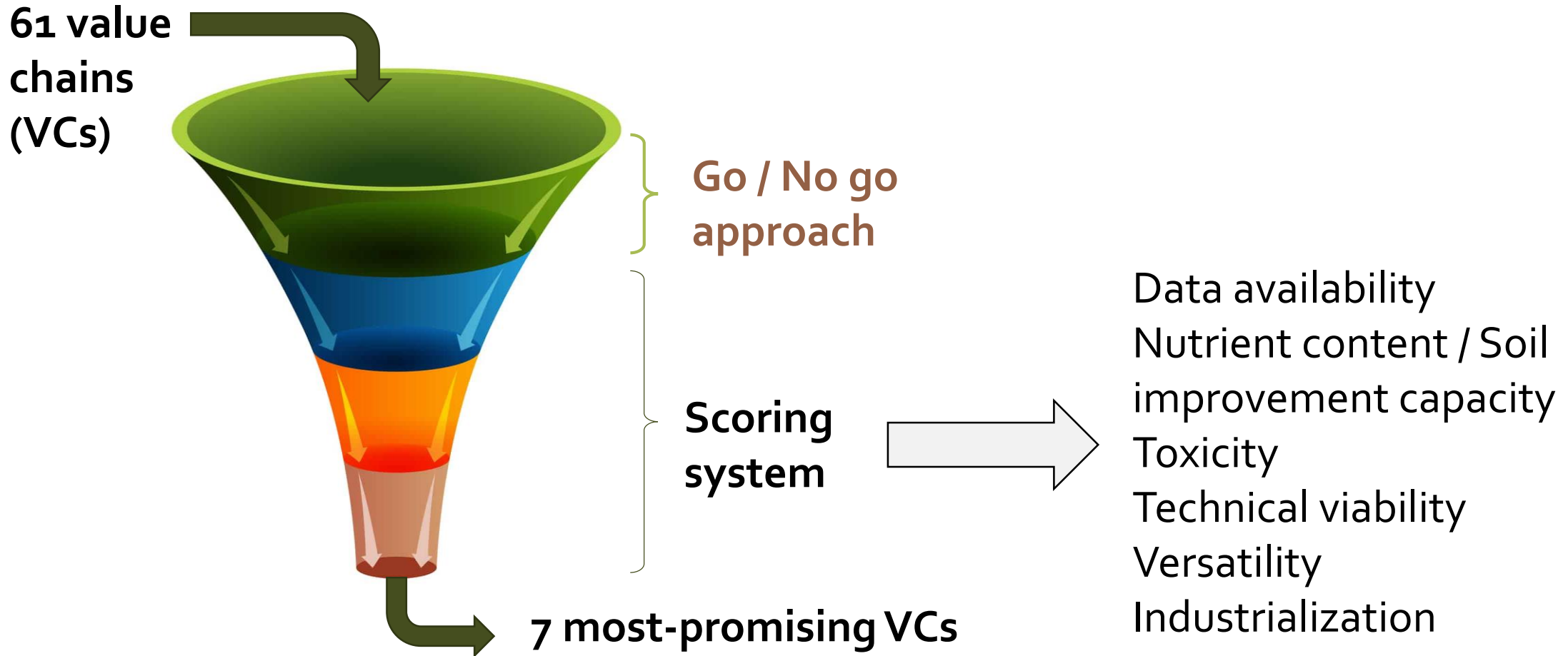
  Consultancy in LCAs & market uptake

  R&I in agriculture, network 3,000 farmers. SAFEMANURE contributor




COMMUNICATION EXPERTS:

  Dissemination & communication

Mapping and scoring of 61 value chains



Life Cycle Sustainability Assessment (LCSA)

 Urban waste water	 Struvite
 Industrial waste water	 Struvite
 Sewage sludge	 Stabilised sludge
 Biowaste	 Composted biowaste
 Biological by-products	 Feather meal
 Digestate	 Solid fraction of digestate
 Treated manure	 Spent Mushroom Substrate

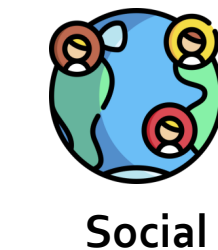


Methodology (14040, 14044) adaptations

Distribution of impacts?
Zero-burden assumption?
Avoidance of impacts



Identification of hotspots (evaluation of impact per life cycle phase)



D2.2

Recommendations
Comparison against mineral fertilisers

State of the play



Environment

Environmental – LCA

inventory ready!



Economy

Life Cycle Cost (LCC)

inventory ready!



Social

Social Acceptance

**Results partially
available**

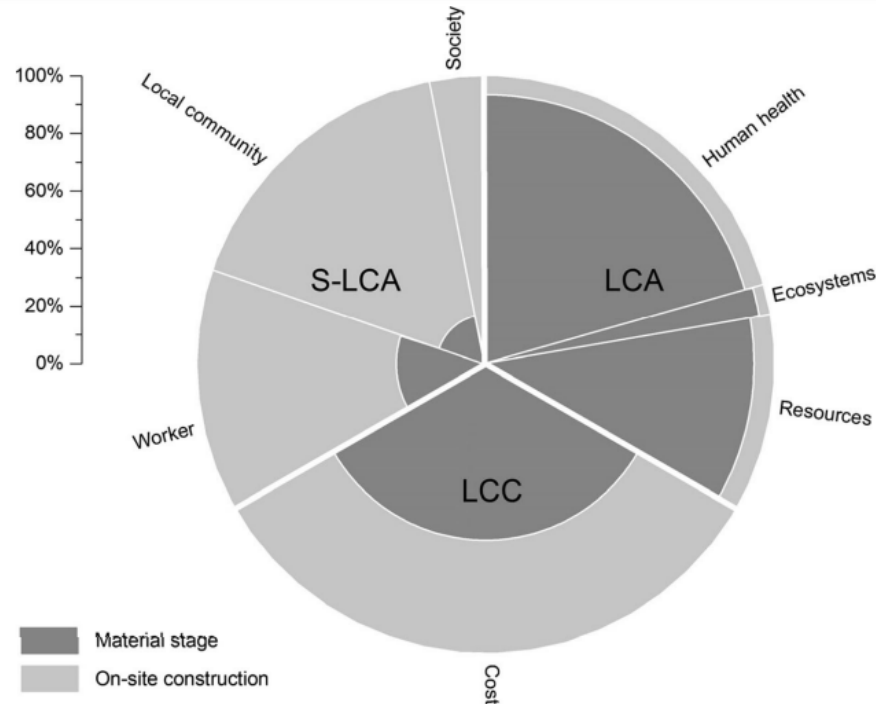
Social – LCA

inventory ready!

Life Cycle Sustainability Assessment (LCSA)

Comparison against mineral fertilisers

Fig. 4 Contributions from the material stage (including material extraction and manufacturing) and on-site construction to the sustainability performance of the residential building construction project



Dong, Y., & Ng, T. (2016). *A modeling framework to evaluate sustainability of building construction based on LCSA*. The International Journal of Life Cycle Assessment, 21, 555-568

D2.2. Multi-assessment of impacts, trade-offs and framework conditions

SEP 2024

ferplay

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement N° 101060426.

Preliminary insights on environmental, economic assessment

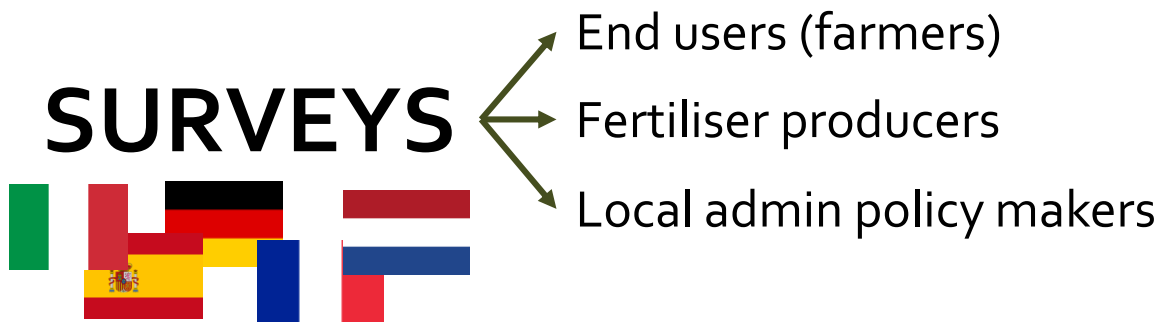
- Unique functional unit across products not useful
- Comparing fertilizers and soil amendments
- When 'waste' becomes the 'main product' a completely different approach is needed
- "Avoided impacts" are not useful when comparing one-to-one.
- Use phase uncertainties (to assess the application on soil, etc...)
- Effects on soil continue to be neglected.

Social assessment

What? Social acceptance

Why? “to contribute to **raising awareness** among **fertiliser producers, end-users, and local administrations**, **overcoming their concerns** and fostering the widespread uptake of circular fertilisers”

How?



Social LCA

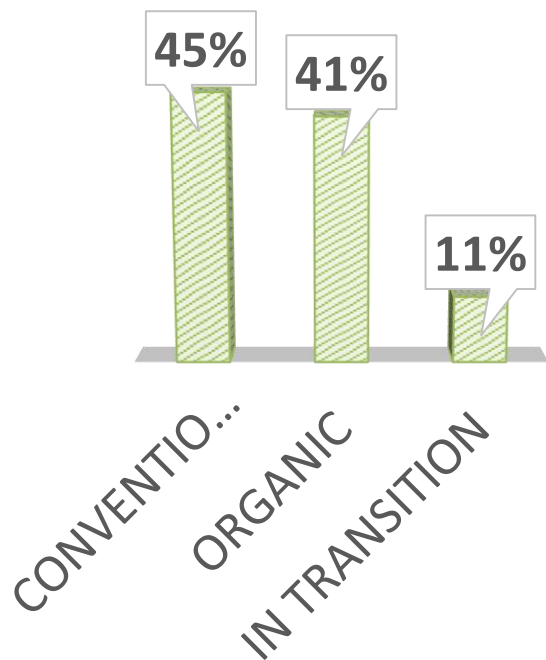
“to evaluate effects (positive or negative) that a product presents along its value chain from a social perspective”

S-LCA methodology developed ad-hoc

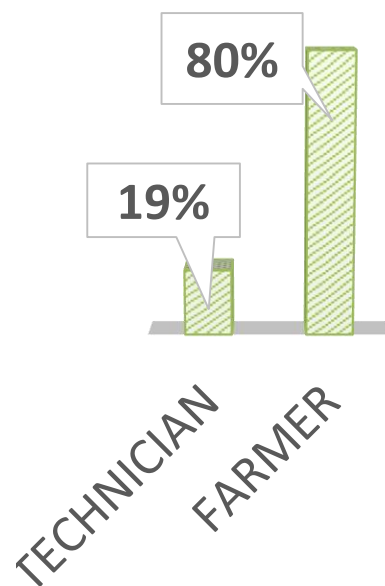
Social acceptance surveys

Profile of surveyed farmers (360 respondents)

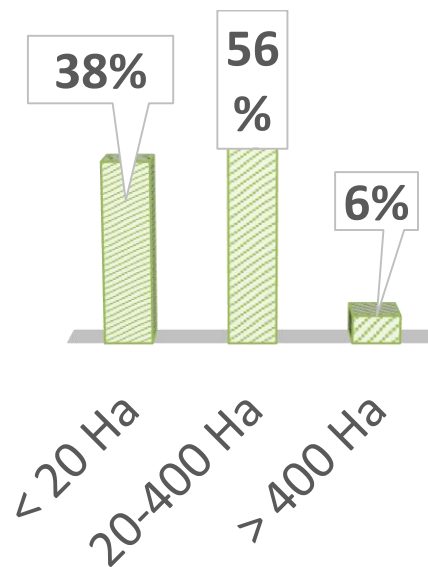
Type of farming



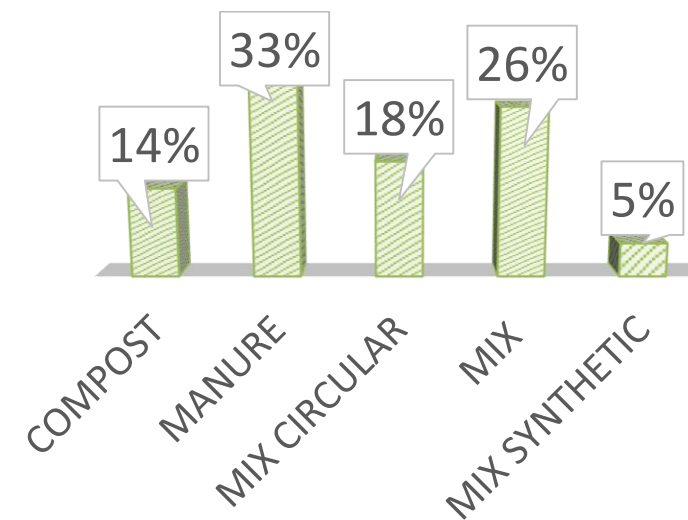
Role



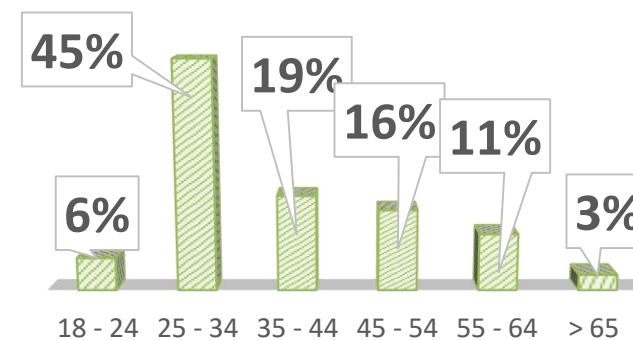
Farm size



Used fertilisers

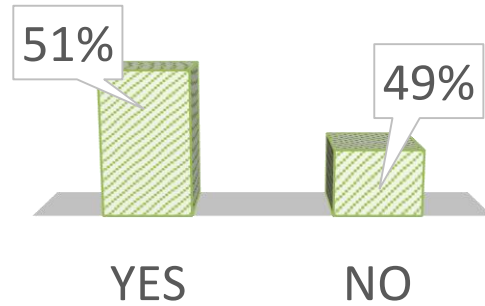


Contestants' age

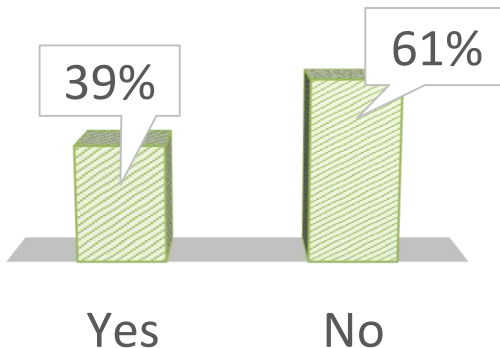


Main challenges about social acceptance

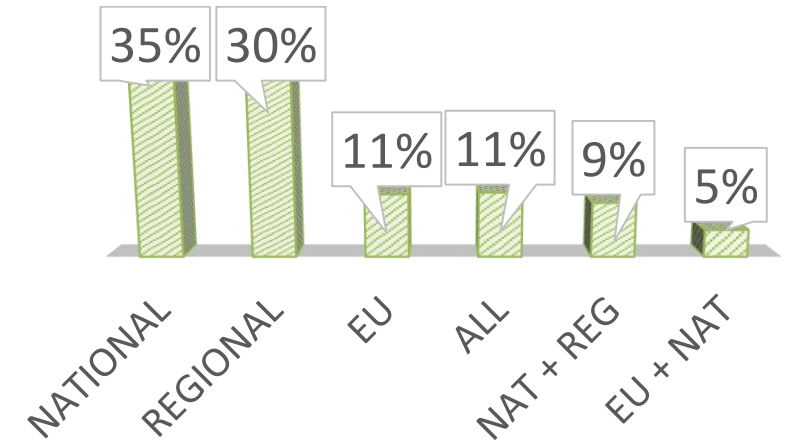
Yearly revision of updated regulation on CF



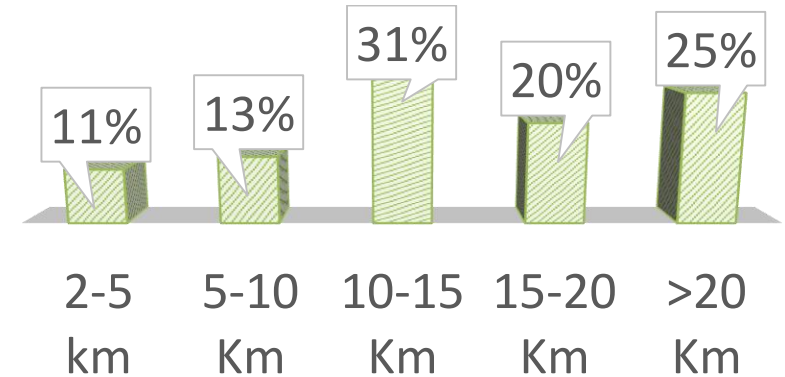
Wants a production plant in the surroundings



Awareness of the regulation for CF applications – geographical level

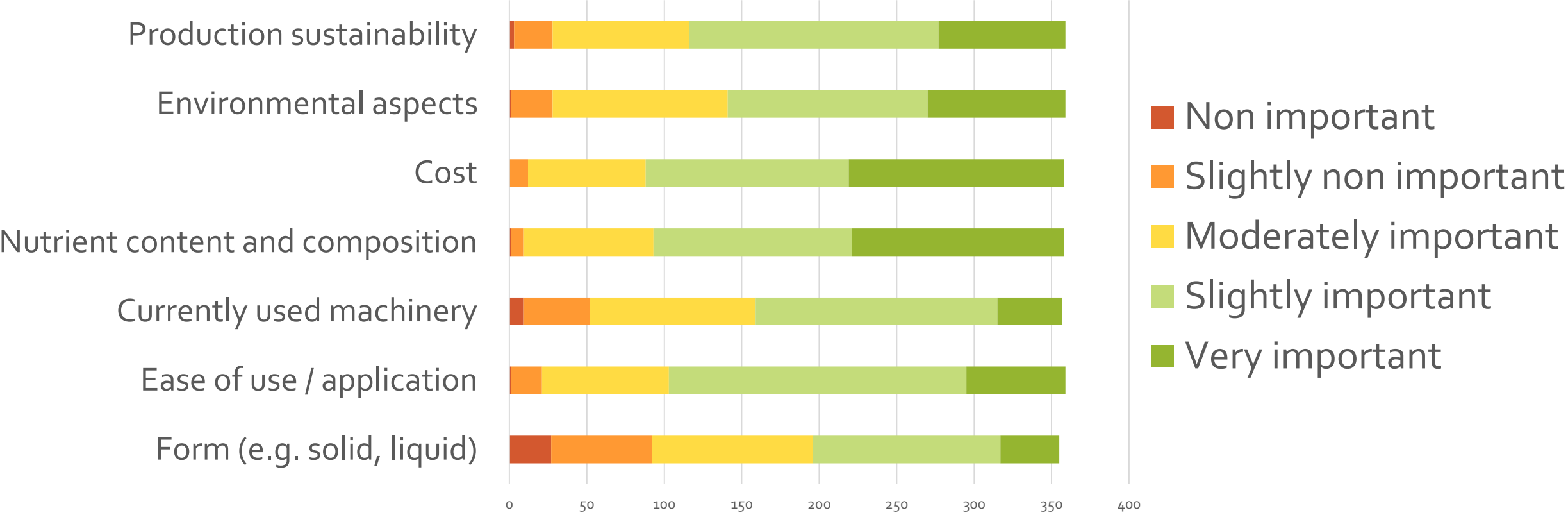


Desirable distance to have the CF production plant



Insights on social assessment

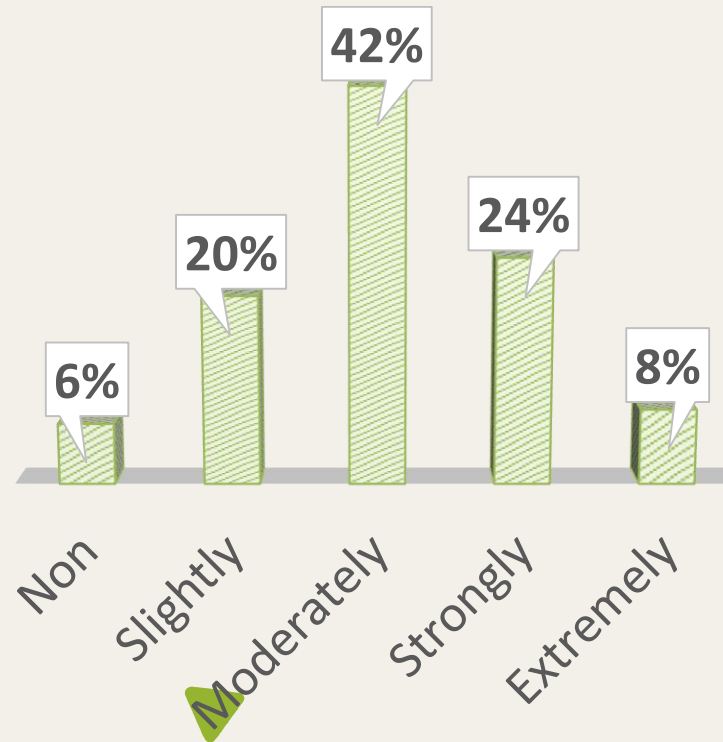
PREFERENCES FOR A CIRCULAR FERTILISER



Preliminary insights on social assessment

Social acceptance

Willingness to switch to CF



Social LCA



D2.2. Multi-assessment of impacts, trade-offs and framework conditions

SEP 2024



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Thank you for your attention!

Event co-organized by  and  ECN

Any Question?

Ask Eva Lopez

or

Alberto Confalonieri

If you're a
fertilizer
producer, have
your say in this
quick survey

