

Policy Impact Assessment – Key findings

27/09/2018 Benjamin Görlach, Ana Frelih Larsen



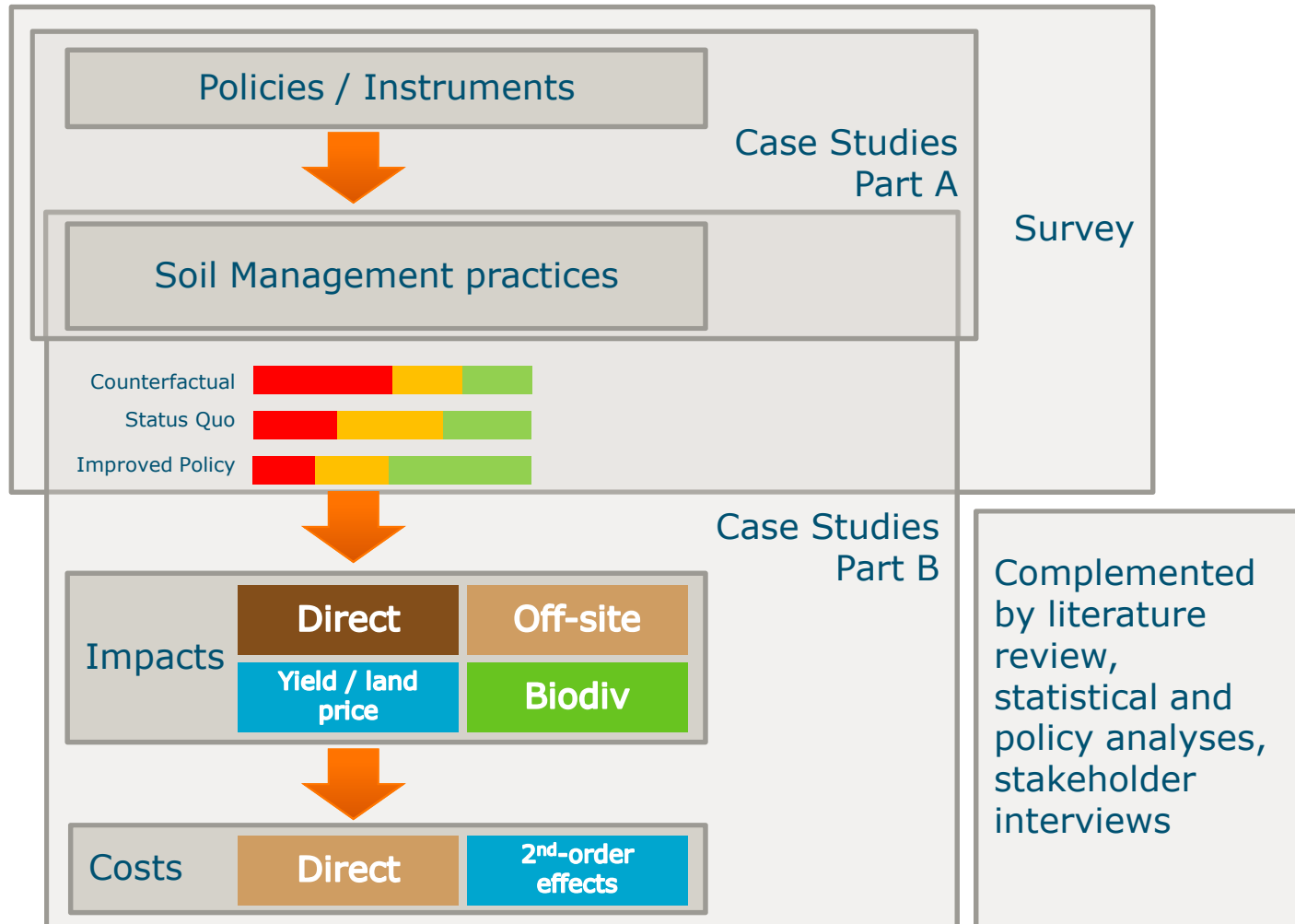
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From Policies to Soil Management to Impacts

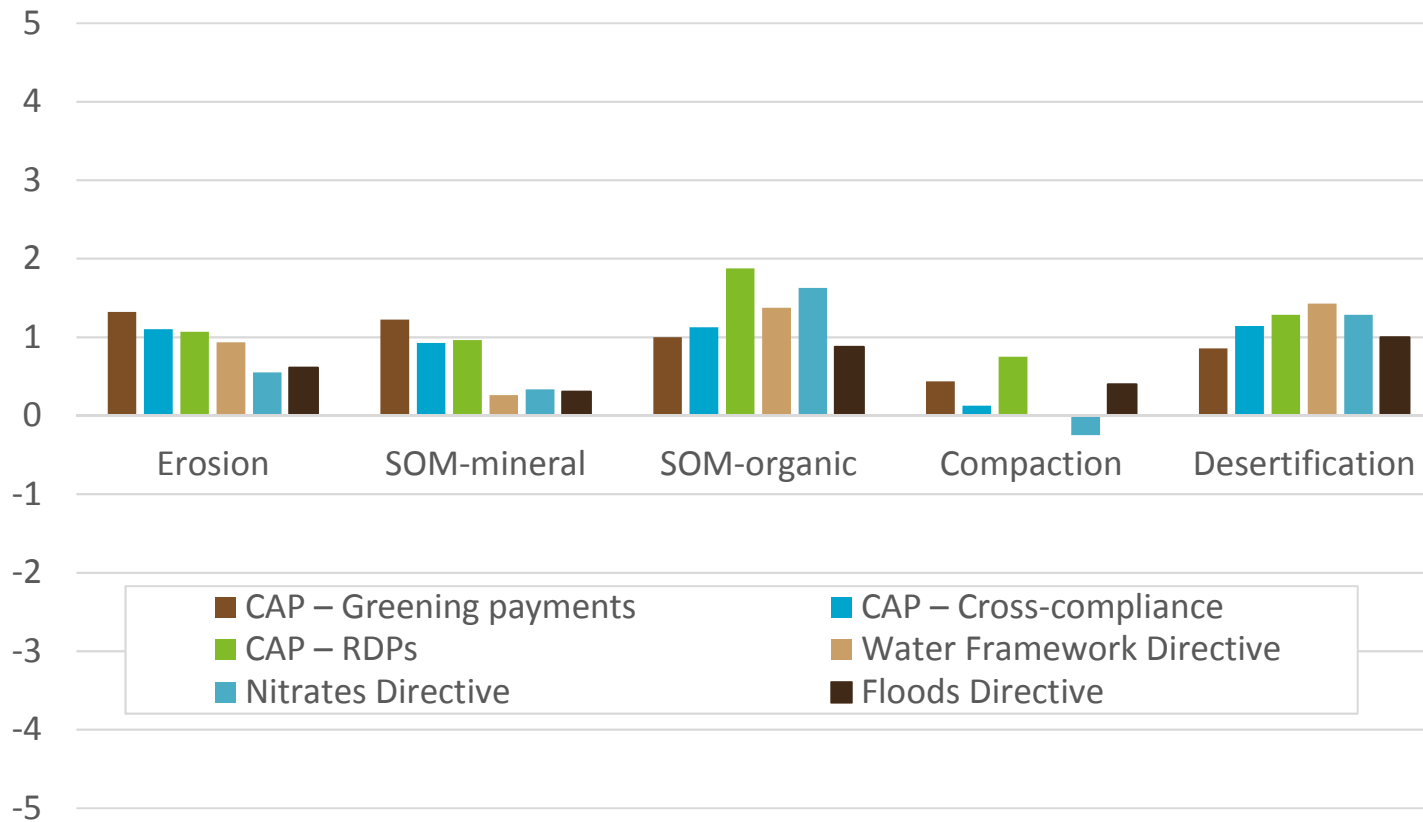


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The challenge to establish causality

- No dedicated soil policy at the EU level, but rather a set of policies that *a/so* have an effect on the way soils are managed. Identified as most relevant by stakeholders in CS areas:
 - Water Framework Directive
 - Common Agricultural Policy
 - Habitat Directive
 - Nitrates Directive
 - Floods Directive
 - ... and several others
- Challenge was to establish a causality between EU policies and soil management practices, in order to capture the impacts of EU soil-related policies.

Impact of EU soil-related policies – stakeholders' perceptions (survey)



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Ambition categories for soil management: examples

	Low ambition	Medium Ambition	High Ambition
Erosion	Conventional tillage Row crops Autumn ploughing	Conservation tillage Forest residues barriers Contour farming Catch/cover crops	no till / mulch tillage / strip tillage Maintenance of dry-stone walls
Loss of SOM (mineral soils)	Crop management with monoculture	Organic farming Input of organic amendments	Conservation agriculture Cover crops
Contamination	Natural attenuation/ no cultivation Crop rotation Applying mineral and organic fertilizers	Liming applying organic fertilizers Cultivation of biofuel crops or energy forestry Natural assisted remediation	applying (inorganic) amendments Afforestation Remediation of contaminated soils

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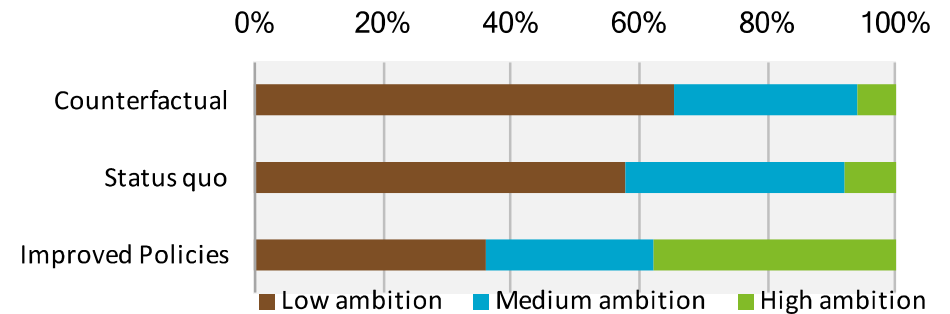


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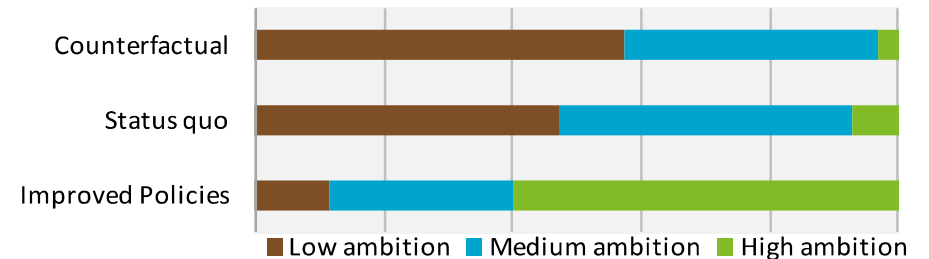


Impact of EU Soil-Related Policies on Soil Management Ambition: Case Study Results

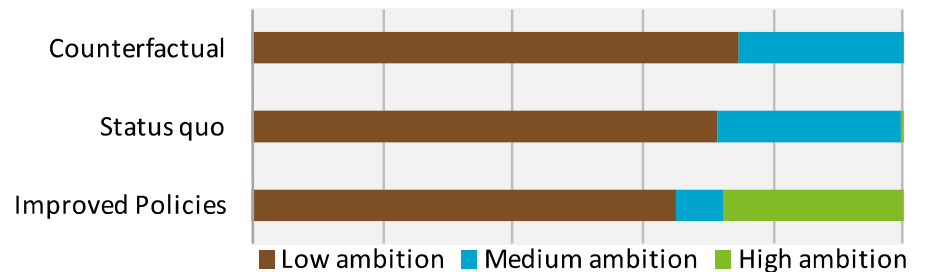
All case studies



Erosion case studies (CY, PT, CH, ES)



SOM case studies (NL, ES, IT)



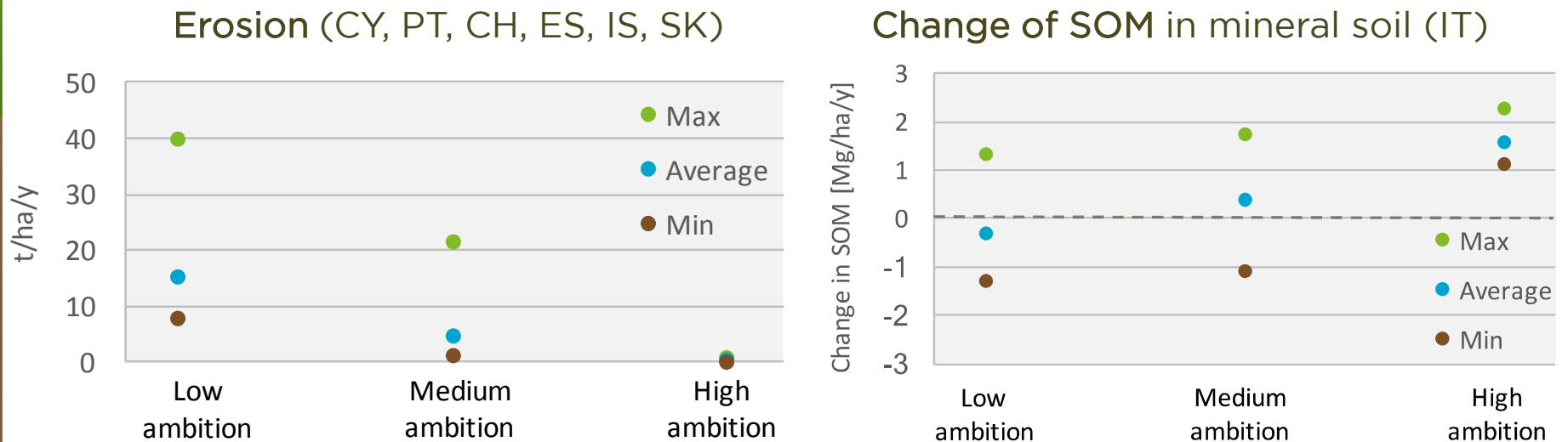
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Impact of soil management practices on soil threats: Case study results



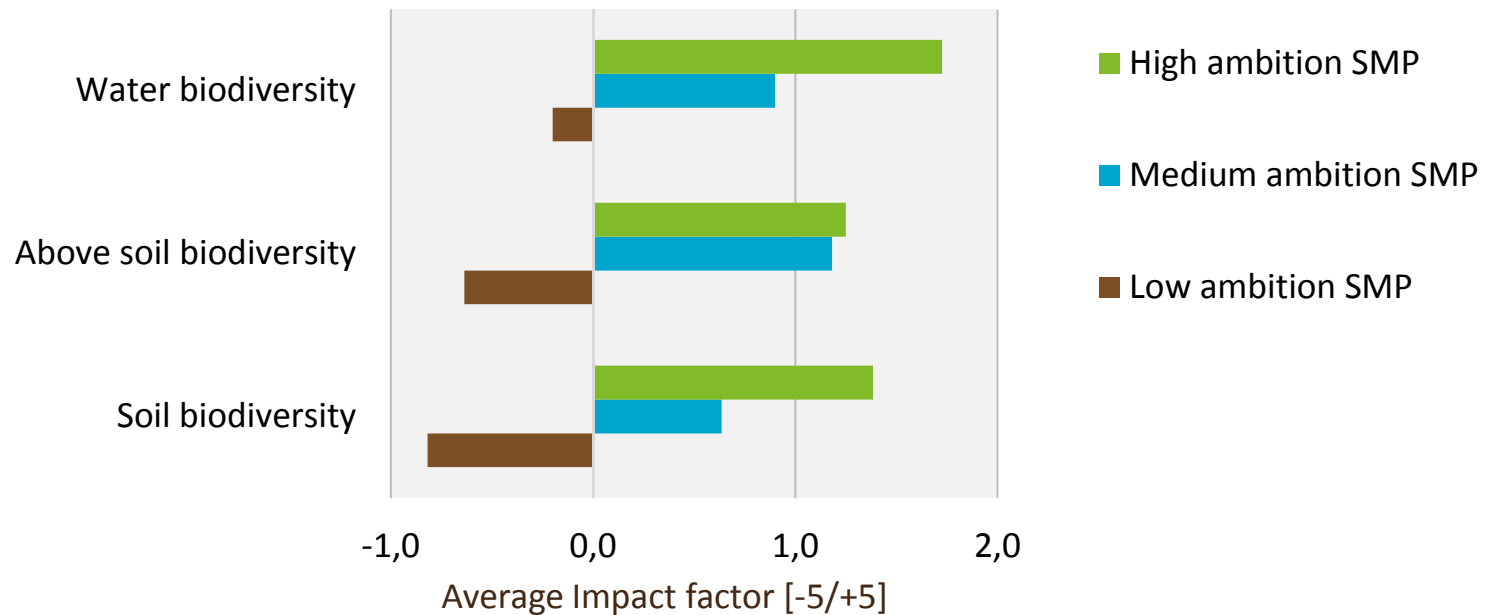
- Consistent finding and clear message that more ambitious soil management practices deliver the intended effects, in terms of reducing erosion, halting the loss of soil organic matter or managing contamination and salinisation.

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Impact of soil management practices on yields: Illustrative results from case studies

- More ambitious soil management practices tend to deliver higher yields
 - Better management of soil organic matter can increase yields 1-9% on mineral soils, 4-20% on organic soils.
 - Preventing soil erosion can increase yields between 5-13%.
 - Inorganic amendments, applied for the immobilization of soil contaminants, can increase yields by 25%.
 - The greatest potential increase in yield (up to 73%) achieved by avoiding soil salinization.
- Point to note: high-ambition soil management may also involve less intensive cultivation, or taking land out of cultivation

Co-benefits of more ambitious soil management: Case study results



- Changes in soil management deliver important co-benefits, such as improving biodiversity above and within the soil, and in adjacent water bodies.

Costs of soil management practices: Case study results

- Investment costs and running costs considered
- Strong variation between case studies, particularly regarding investment costs, due to the different types of measures considered
- Generally higher ambition comes at higher cost, but:
 - differences between ambition categories are modest compared to differences between case studies
 - several cases where costs are the same irrespective of ambition, one case where high-ambition measures are cheaper than medium ambition

Summary

- General remark: diffuse nature of EU soil-related policies means that assumptions are necessary to establish causality
- Set of EU soil related policies leads to modest increase in the ambition of soil management – in their absence, ambition would be lower
- More ambitious soil management practices work – improve soil functions, maintain or increase yields, deliver co-benefits
- More ambitious soil management often (not always) incurs higher investment and running costs; increases are mostly modest
- Current policies only deliver a small part of the potential improvement

Thank you!



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