

Can organic amendments enhance food security? insights from diverse regional contexts

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Plans for a report and a policy brief

On behalf of INSOILFER Working Group 2 technical committee on soil management



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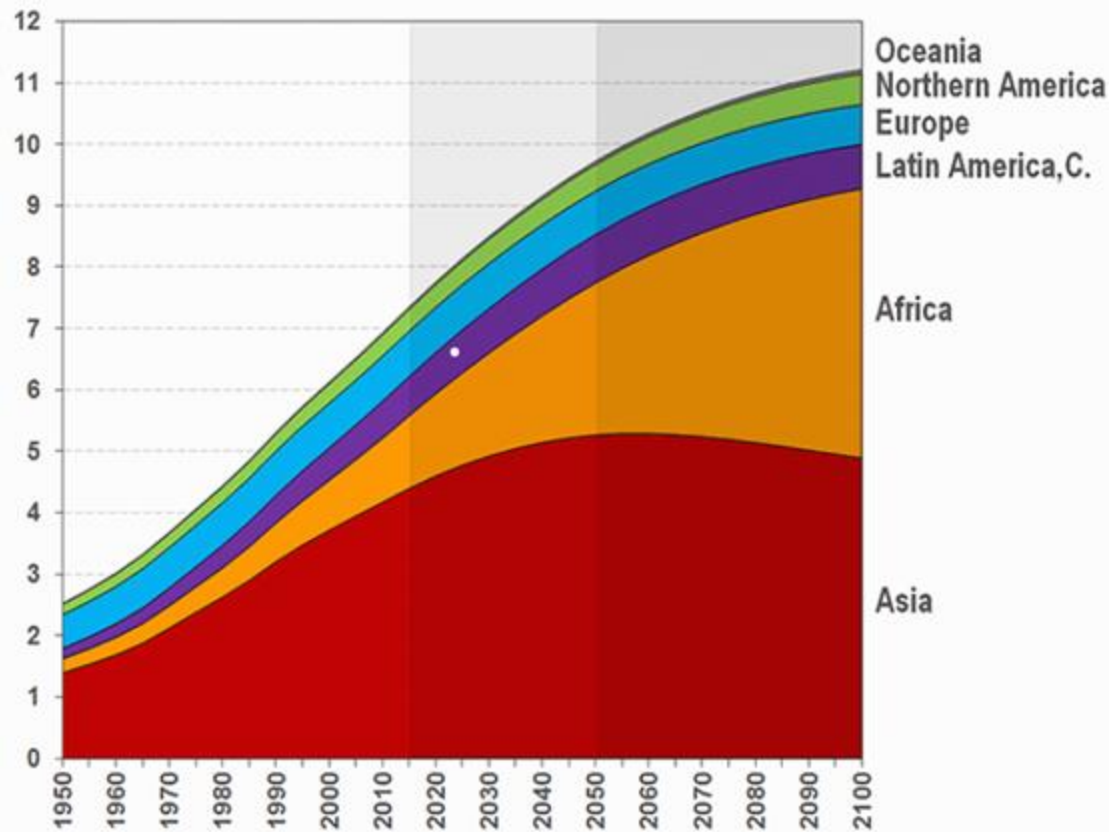
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Context and background

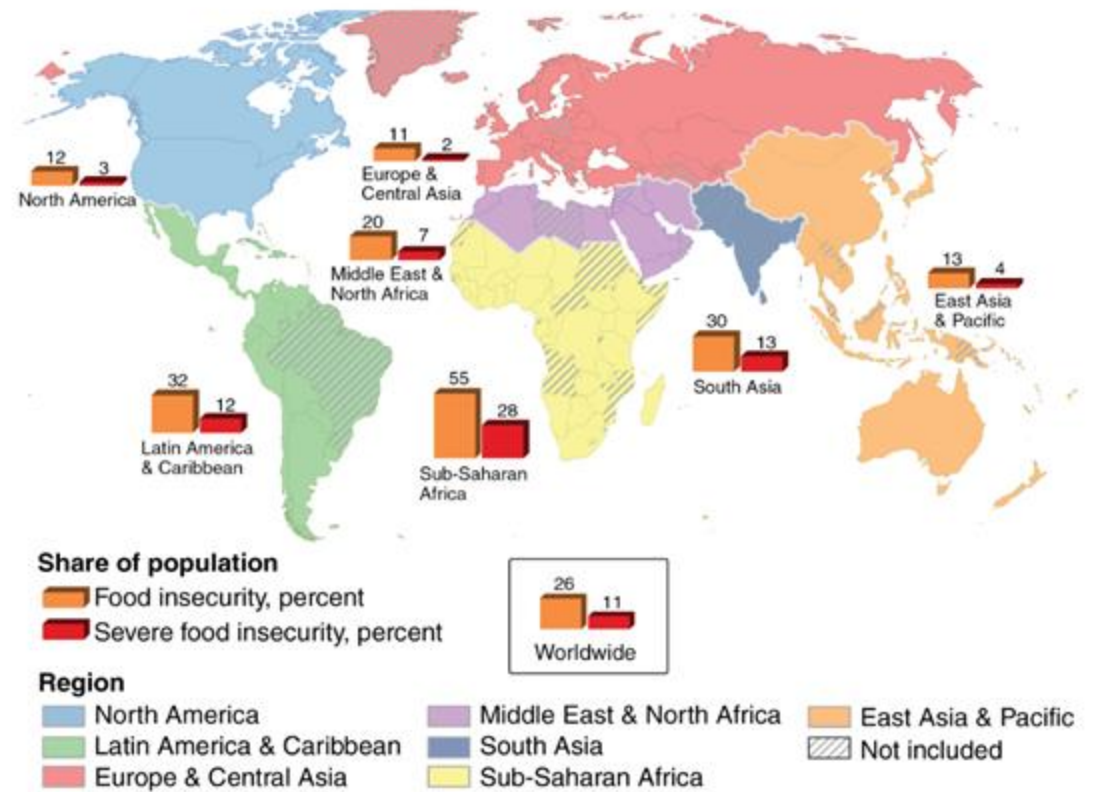
Historical and projected population by region from 1950 to 2100



Source: HYDE (2016) & UN, WPP (2019)

OurWorldInData.org/world-population-growth • CC BY

Food insecurity and severe food insecurity by region



Source: USDA, Economic Research Service using data from the 2017 Gallup World Poll.

The million-dollar question : How can we ensure the world is food-secure?



monoculture



Soil health

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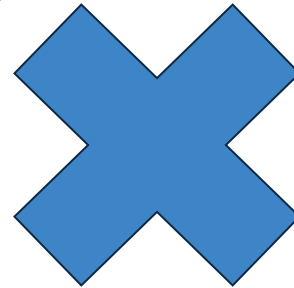
Challenges in using organic amendments to enhance food security are inherent in the amendments themselves

Organic amendments

Releases nutrients slowly and nutrients are not immediately available to crops

Variable nutrient composition, variable quality influencing their effectiveness

Lower upfront cost but many need larger application volumes and transport costs; often labor-intensive.



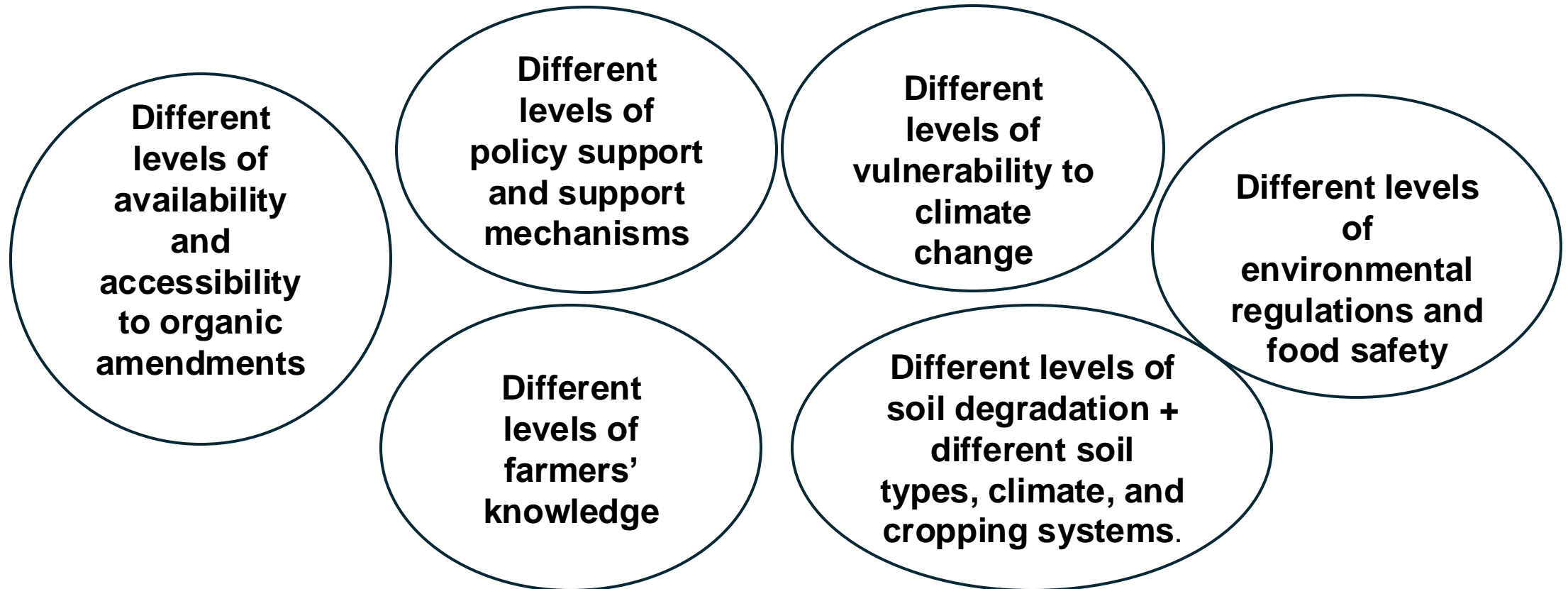
Mineral fertilizers

Quickly releases nutrients for immediate crop uptake

Consistent nutrient ratios allow precise application for specific crop needs.

Higher upfront costs per unit of nutrient but efficient in smaller quantities; lower labor requirement per application.

Challenges in using organic amendments for food security are context-specific



Questions



- 1) What factors best predict the use of organic amendments in enhancing food security across Least Developed, developing, and developed countries, where resource accessibility and availability vary widely?
- 2) Why is it that even in developed countries and regions with abundant organic materials, mineral fertilizers continue to play such a dominant role in agricultural production?
- 3) What strategies and complementary options are available to enhance food security in Least Developed Countries (LDC) and developing countries where organic amendments alone may be insufficient or not suitable?

Objectives

- 1) Exploring case studies to identify the contribution of organic amendments to food security across LDC, developing and developed countries.
- 2) Identifying the factors that encourage or limit the use of organic amendments in food security initiatives using these case studies and available literature on the topic.
- 3) Identifying complementary or alternative methods for food security where organic amendments alone may fall short.



Expected outcomes

- A deeper understanding among policymakers of the factors that make organic amendments effective in one region yet less effective in another can drive more targeted, practical, and well-informed policy decisions.
- Identifying these factors allows for strategies that consider regional variations in enhancing food security outcomes.
- Policymakers will gain an understanding of other approaches or complementary options when organic amendments may fall short in addressing food security, such as the use of organo-mineral amendments.



Report/policy brief outline

1) Introduction

Present the current status on food security, food insecurity and food supply/demand balance globally

Introduce the potential of organic amendments to address food security

Present global status of their use in this context with respect to current unsustainable practices

2) Statement of the problem and objectives of the report/policy brief

Present region-specific issues regarding organic amendments contribution to food security in LCD, developing and developed countries and state the objectives of the policy brief/report

3) Case studies on the contribution of organic amendments to food security and comparative analysis

Case study 1- For LDC

Case study 2- For developing countries

Case study 3- For developed countries

Key factors limiting or encouraging the adoption of organic amendments in food security across these countries

Report/policy brief outline

4) Key factors and considerations for designing effective food security policies that integrate organic amendments in diverse regional contexts and tentative solutions

5) Beyond organic amendments: complementary and alternative strategies for food security in low-resource regions

6) Conclusion

Approach for the mobilization of experts and WG2 communities

Organization



Outcome

From the report to the policy brief

Least-developed countries

The African case study



Zambia
Mozambique
others

The Asian case study



TBD

Developing countries

The Latin America case study



Honduras and Guatemala;
Dry corridor region
Others?

Developed countries

The North American case study



United States
Others?

The European case study



Southern Europe
countries
Others?

Our Requests to the ITPS

- 1) Review the proposal and help identify relevant case studies for inclusion in the global report/policy brief
- 1) We invite you to get involved, provide technical support, and let us know if you're interested in leading or working on specific tasks/ case studies.