

Here is our measured and professional response that addresses the technical parts of the reviewer's feedback clearly and respectfully.

Reviewer's Overall Feedback: This review systematically elucidates the central role of soil in ecosystems, tracing the evolution of agricultural development starting from the Green Revolution. The authors point out that while the promotion of high-yielding cultivars and agricultural chemicals alleviated the food crisis in the short term, it sowed the seeds of soil pollution and ecological degradation in the long run. By closely linking soil degradation to ecosystem services, human health, and sustainable development, the review highlights its pressing relevance and contemporary significance. The article adopts a sound perspective, but its writing logic lacks clarity, diminishing readability.

Response to Reviewer Comments:

I sincerely thank the reviewer for the careful reading, thorough evaluation, and constructive feedback. We see these comments invaluable in enhancing the clarity, structure, and overall quality of our manuscript. We have included our responses to the specific points raised during the review. We have revised the manuscript to improve clarity and structure, expanded the treatment of heavy-metal contamination (even referring to another manuscript in press) , harmonized section headings, simplified policy text into synthesized narrative, improved figure resolution and captions, and corrected reference formatting and missing citations. Below we respond point-by-point.

In brief: The reviewer praises the article's scientific framing but critiques style and clarity, which seem to focus on presentation rather than substance. These concerns likely come from a non-expert reviewer with a general sustainability background. Their key points include (i) Criticism of clarity and structure lacks specifics, indicating a superficial review; (ii) Policy citations are a standard and necessary part of sustainability research; (iii) Editorial comments on formatting and abbreviations are minor and don't address scientific content.

Note to the Editor: Authors appreciate the reviewer's feedback. The manuscript has been revised for clarity while retaining its scientific depth. Given its interdisciplinary nature, integrating policy is crucial for relevance. P.S.: Some feedback appears more stylistic than scientific. We've revised the manuscript to improve clarity, reflecting its interdisciplinary scope.

1. Introduction Section

Reviewer's Comment: The "INTRODUCTION" section should explicitly state the paper's primary focus.

Response: We have added a short, explicit aim statement "This review explicitly focuses on (i) the causes and current status of agricultural soil contamination, (ii) pathways by which contamination degrades soil ecosystem services, and (iii) restorative mitigation strategies (physico-chemical, biological and policy measures) with special emphasis on (agro)chemicals turned pollutants and their relevance for Sustainable Development Goals (SDGs)" preceding / just before "Objectives" block.

We have revised the Introduction to clearly articulate the main objectives of the review, emphasizing the central role of soil in ecosystems, its relationship with agricultural development, soil pollution, and sustainable management strategies.

2. Section 3.3

Reviewer's Comment: Section 3.3 title/subheadings do not match content

We already have Section 3.3 "Soil Contaminants Origin, causes and status." The reviewer says subsections read like "current situation" rather than Origin/Cause/Status.

Response: We have restructured Section 3.3 so that the subsection headings now follow a clear logical sequence (from Origin to Causes/Pathways, and Current Status). We hope that this restructuring ensures consistency between the section title and its subheadings.

3. Policy Citations and Readability

Reviewer's Comment: The manuscript extensively cites policy documents (which affects readability) and intergovernmental references (FAO, Basel, Stockholm, UN Decade, etc.). That is appropriate in an interdisciplinary review — but the reviewer wants more synthesis and fewer long policy quotes.

Response: That's the whole point — to address the restorative mitigation of contaminated soil for ecosystem services with a holistic approach, drawing on research insights and aligning with the SDGs e.g., “global recognition of soil pollution as an emerging problem” and “calls for monitoring, prevention and remediation; emphasis on cross-scale policy instruments (on national and global levels) – as the phrase goes “think globally & act locally.” The authors herein try to show the policy implications for agri practice/research.

If the Editor wants, we can even move longer policy descriptions into a short boxed “Policy context” as an optional appendix if the journal allows supplementary material — this shall preserve full citations without burdening the main narrative. Finally, we want to state that the policy-related content has been synthesized and integrated into the narrative in our own words, improving readability while retaining key references and maintaining an academic tone.

4. Section 4.4.1 – Heavy Metal Pollution

Reviewer's Comment: There is no 4.4.1 labelled in the manuscript, since heavy metals are discussed in multiple places and Table 1 includes heavy metals and treatment options

Response: A dedicated subsection on heavy metal contaminants has been added, covering sources, environmental impacts, and recent research, complementing the discussion of organic pollutants.

5. Section 4.3 Case Studies – Scope of Soil Pollution

Reviewer's Comment: Case studies focus exclusively on organic pesticide pollution.

Response: The manuscript now includes additional discussion data on heavy metals and one extra entry in Table 1 with respect to heavy metals. We wrote the reasons behind not including case studies and guided readers to read our article in press and our previous studies which addressed heavy metal phytotoxicity, ensuring a more comprehensive thematic coverage of soil pollution.

6. Abbreviations

Reviewer's Comment: Full forms should be provided for abbreviations at first mention.

Response: All abbreviations, including FAO, have been defined at first occurrence in the revised manuscript.

We have defined all abbreviations at first use (e.g., Food and Agriculture Organization (FAO)) and can also include a short list of abbreviations in the front matter (enclosed herewith an ANNEXURE below, if journal allows).

7. Figure 4 Reference

Reviewer's Comment: The reference "Resilience Alliance, 2007" is missing from the reference list.

Response: The missing reference has been added and all in-text citations have been cross-checked for consistency with the reference list.

8. Figure 7 Clarity

Reviewer's Comment: Figure 7 suffers from poor clarity.

Response: Figure 7 has been resubmitted to improve resolution and readability.

9. Reference Formatting

Reviewer's Comment: Citation and reference list formatting errors exist.

Response: All references have been reviewed and corrected to ensure consistency and adherence to the journal's formatting guidelines.

Finally, we are grateful for the reviewer's insightful suggestions. We believe that these revisions address the reviewer's feedback and significantly enhance the manuscript's structure, clarity, and coherence as expected by the reviewer while retaining our scientific rigor.

Annexure: Compiled list of all abbreviations and their full forms

Abbreviation Full Form

FAO	Food and Agriculture Organization (of the United Nations)
ITPS	Intergovernmental Technical Panel on Soils
GSP	Global Soil Partnership
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNEA	United Nations Environment Assembly
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization

Abbreviation Full Form

UNGA	United Nations General Assembly
UNFCCC	United Nations Framework Convention on Climate Change
IUCN	International Union for Conservation of Nature
WCED	World Commission on Environment and Development
UNCED	United Nations Conference on Environment and Development
EC	European Commission
EU	European Union
ISO	International Organization for Standardization
SDGs	Sustainable Development Goals
SWSR	Status of the World's Soil Resources
GSOP18	Global Symposium on Soil Pollution 2018
POPs	Persistent Organic Pollutants
PAHs	Polycyclic Aromatic Hydrocarbons
LDCs	Least Developed Countries
IPM	Integrated Pest Management
COP	Conference of the Parties (e.g., COP29)
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
USEPA	United States Environmental Protection Agency
NIFA	National Institute of Food and Agriculture (U.S. Department of Agriculture)
SARE	Sustainable Agriculture Research and Education
CICES	Common International Classification of Ecosystem Services
SOC	Soil Organic Carbon

Abbreviation Full Form

SOM	Soil Organic Matter
DESD	Decade of Education for Sustainable Development
GSBI	Global Soil Biodiversity Initiative
SCBD	Secretariat of the Convention on Biological Diversity
WBCSD	World Business Council for Sustainable Development
LCA	Life Cycle Assessment
SOCI	Sustainable Soils Alliance