

SUPPLEMENTARY MATERIAL

Supplementary Figures & Tables

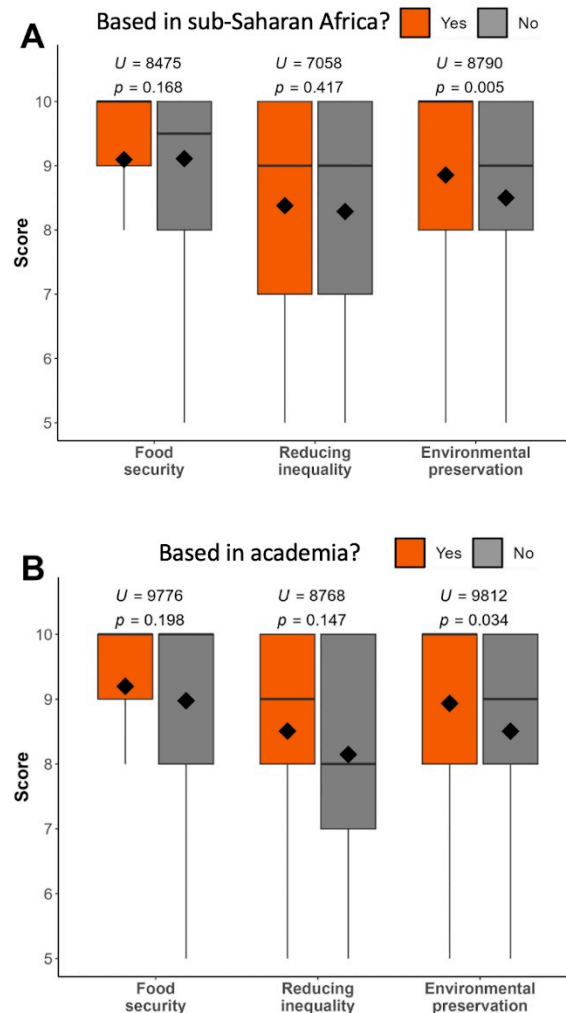


Figure S1. Variation in perceived research priorities according to geographical and professional context. Panels show boxplots comparing Likert scores (on a scale of 0-10) provided by participants asked to score the importance of three Sustainable Development Goal (SDG) areas; black diamond shows the mean; centre line shows the median; box shows the inter-quartile range; whiskers show 1 standard error. Panel (A) compares scores for participants based inside ($n = 232$) and outside ($n = 87$) sub-Saharan Africa. Participants outside sub-Saharan Africa were mainly based in the Global North. Panel (B) compares scores for participants that self-identify as an academic ($n = 161$) and non-academic ($n = 163$). Statistics and p-values are from paired Wilcoxon signed-rank tests.

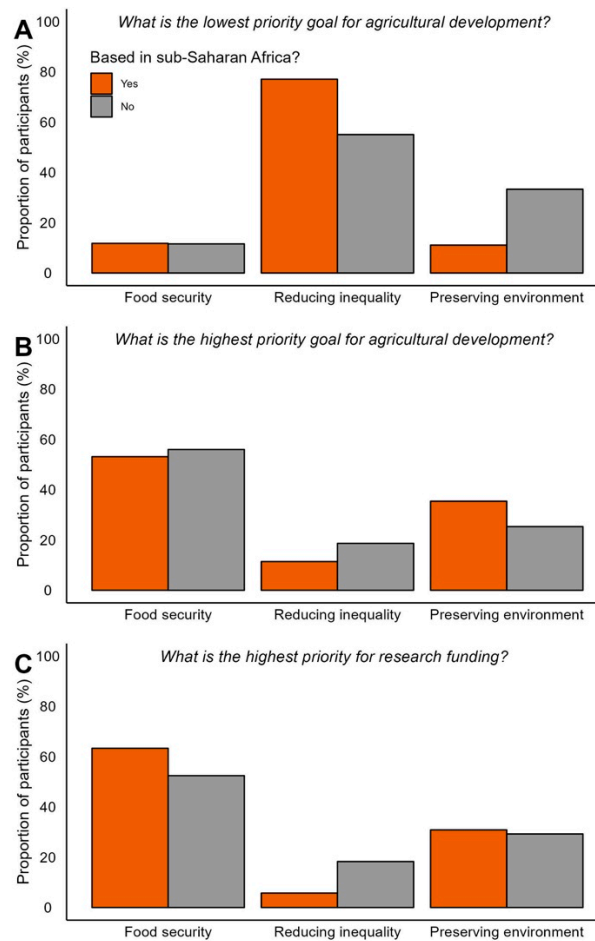


Figure S2. Influence of geographical location on perceived research and funding priorities for agricultural development. Panels show barplots comparing how three agricultural development priorities – food security, reducing inequality, and preserving the environment – were prioritised by participants based inside ($n = 175$) and outside ($n = 75$) sub-Saharan Africa. Participants outside sub-Saharan Africa were mainly based in the Global North. Data show variation in the choices made by participants when asked to select (A) the least important and (B) the most important goals for agricultural development, as well as the area they would rank as the highest priority for funding allocation (C).

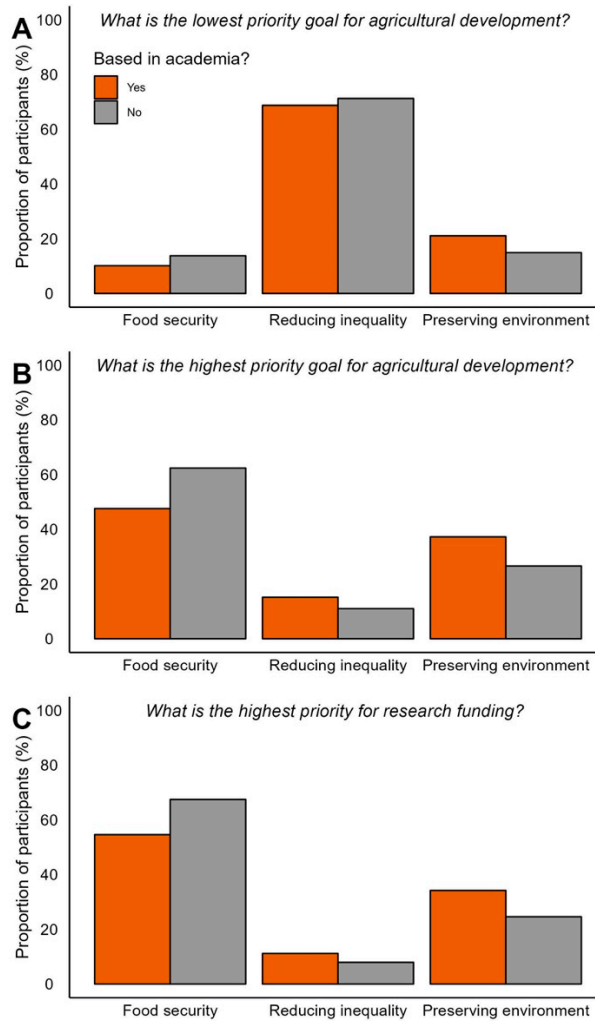


Figure S3. Influence of professional context on perceived research and funding priorities for agricultural development. Panels show barplots comparing how three agricultural development priorities – food security, reducing inequality, and preserving the environment – were prioritised by participants based in ($n = 152$) and outside ($n = 126$) academia. Data show variation in the choices made by participants when asked to select (A) the least important and (B) the most important goals for agricultural development, as well as the area they would rank as the highest priority for funding allocation (C).

Table S1. Questions posed to participants during Stage 1 of the horizon-scanning procedure.

For multiple choice questions, participants were given three options for Question 4 and 5 [Preserving terrestrial environments; Food and Nutrition Security; Reducing Inequality] and Question 6 [Environmental research; Food self-sufficiency research; Social equality research].

Question	Scoring system
1. How important is preserving the terrestrial ecosystem when making decisions concerning agricultural development?	Likert Scale [0-10]
2. How important is food and nutrition security when making decisions concerning agricultural development?	Likert Scale [0-10]
3. How important is reducing inequality when making decisions concerning agricultural development?	Likert Scale [0-10]
4. If you had to prioritise the following, what would you consider the least important aspect for agricultural development?	Multiple Choice [3 options]
5. If you had to prioritise the following, what would you consider the most important aspect for agricultural development?	Multiple Choice [3 options]
6. If you had to prioritise funding, which would you consider to be the most important?	Multiple Choice [3 options]

Supplementary Information 1: Extracts from Sentinel horizon scan pages. These pages were available in French and English.

1. Landing page

Call for participants

[Voir cette page en français](#)

With the human population of sub-Saharan Africa expected to double, and food demand to triple over the next half century, it is important to realise that decisions made today can have profound effects on the future. Moving forward, it is therefore vital that we ensure governments, policy makers and private sector have access to the most up to date and relevant knowledge to aid them in the decision-making process.

To support this objective, the SENTINEL project team in partnership with International Water Management Institute (IWMI) are leading a Horizon scanning activity to identify the 100 most critical research questions that, if answered, would have the greatest positive impact on addressing these challenges, and aid in the decision-making process.

What is Horizon scanning?

Horizon scanning involves asking experts and stakeholders to highlight important questions that need to be answered in order to solve a given problem. It is an inclusive and interdisciplinary approach to identifying knowledge gaps and important key research questions. For an example of horizon scanning and the types of questions that have been raised through similar activities, please see [here](#). The aim of this horizon scanning activity is:

“Achieving food and nutrition security, reducing inequality, and preserving terrestrial ecosystems: 100 critical research questions for decision makers in sub-Saharan Africa.”

This horizon scanning process involves three key stages. First, by consulting with stakeholders and experts a large list of questions will be gathered. Secondly, these questions will be split and organised into key thematic clusters. Finally, the list of 100 critical questions shall be refined and identified through a two-day workshop involving a diverse panel of experts and stakeholders selected from participants involved in the earlier stages of the activity. Currently, we are looking to complete the first stage, by gathering a broad array of questions. These questions can span any topic relating to food and nutrition security, reducing inequality, and ecosystem health in Sub-Saharan Africa. However, to ensure that the questions address the call, and make their way to the final stage, they:

- Must address a knowledge gap (or gaps) that can be filled within a reasonable time frame (e.g. <5 years), using a realistic research design.
- Cannot depend on the outcome of another question.
- Should not be able to be answered with a simple 'yes' or 'no' response.
- Should define a subject, an intervention, and a measurable outcome, if related to an impact and intervention.

How can I get involved?

Whether you are a consumer or producer of research, we are interested in hearing your views. We are currently recruiting participants and/or organisations that are involved and/or work in sub-Saharan Africa to contribute their questions to our horizon scanning activity.

Please note that you do not need to have an in-depth knowledge to participate. Rather we are keen to hear from anyone involved in the region, especially those organisations or individuals who are actively engaged with the agricultural sector. All submissions can be lodged [here](#).

Finally, alongside the questions, we would also like to request permission to collect additional information such as your email address and job position, to enable us to ensure that this study incorporates the views of stakeholders from a variety of sectors, institutions and job roles. Any data you provide will be used and analysed exclusively in an anonymised form.

Please feel free to share this page with interested colleagues and others in your network, to maximise the number of responses we receive. For further details please direct your questions to Adam Devenish at a.devenish@imperial.ac.uk.

Submit your questions

2. Participant background page

"Achieving food and nutrition security, reducing inequality, and preserving terrestrial ecosystems: 100 critical research questions for decision makers in sub-Saharan Africa"

[Voir cette page en français](#)

Please use this form to contribute your questions to the SENTINEL [Horizon scanning activity](#).

If you have any questions about how to use this form, or for more information about this project, please get in touch with Adam Devenish: a.devenish@imperial.ac.uk.

Thank you very much for participating in this project. We really appreciate your contributions and look forward to identifying research questions that can help decision makers in sub-Saharan Africa to address Sustainable Development Goals.

Name

Email address

Job position

Affiliation

Are you a producer or consumer of research?

☐ Consumer / user ☐ Producer / creator

Please select one of these areas which best describes your work

Please select additional areas which you work in

- ☐ Academic researcher
- ☐ Researcher for a private institute
- ☐ Public sector - Policy maker
- ☐ Non-state actor - Civil Society Organisation (CSO)
- ☐ Non-state actor - Non-Governmental Organisation (NGO)
- ☐ Private sector - commercial / industry
- ☐ Governmental Organisation
- ☐ Intergovernmental Organisation
- ☐ Donor
- ☐ Other...

In which country is your place of work?

- None -



What sector do you work in?

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3. Question submission page

"Achieving food and nutrition security, reducing inequality, and preserving terrestrial ecosystems: 100 critical research questions for decision makers in sub-Saharan Africa"

Please contribute as many questions as you would like to in the boxes provided below. You can submit as many questions as you like, just click the "+" button to add another. When you have entered all your questions, click 'Next page'.

Please contribute questions that aim to address one, some, or all of the following: food security, nutrition, reducing inequality, and preserving ecosystems.

Questions

Your question



Your question



Your question



Your question



Your question



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4. Research prioritisation page

"Achieving food and nutrition security, reducing inequality, and preserving terrestrial ecosystems: 100 critical research questions for decision makers in sub-Saharan Africa"

Here, we ask you to rank the areas of research we are considering in this horizon-scanning activity in order of importance.

How important is preserving the terrestrial ecosystem when making decisions concerning agricultural development?

5

Lowest importance  Highest importance

How important is food and nutrition security when making decisions concerning agricultural development?

5

Lowest importance  Highest importance

How important is reducing inequality when making decisions concerning agricultural development?

5

Lowest importance  Highest importance

If you had to prioritise the following, what would you consider the *least* important aspect for agricultural development?

- None - 

If you had to prioritise the following, what would you consider the *most* important aspect for agricultural development?


- None - 

If you had to prioritise funding, which would you consider to be the most important?

- ☐ Environmental research
- ☐ Food self-sufficiency research
- ☐ Social equality research

How much influence do you feel your work has on agricultural development decision making?

5

No influence at all  A very large amount of influence

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5. Further contact / privacy page

"Achieving food and nutrition security, reducing inequality, and preserving terrestrial ecosystems: 100 critical research questions for decision makers in sub-Saharan Africa"

Thank you very much for contributing to the SENTINEL Horizon scanning activity.

Please note that, by participating in this activity, you consent to your personal data being used in the way described in our [privacy policy](#). For further information, please contact Adam Devenish (a.devenish@imperial.ac.uk).

If you have provided your email address, we look forward to keeping you updated on project progress. In the meantime, have a lovely day and thank you again for your contributions.

☐ **I would like to be contacted regarding future stages of the Horizon-scanning activity**

Please ensure that you have given your email address on the first page of this form, if you would like to be contacted.

☐ **I would be interested in participating in the later stages of the Horizon-scanning activity**

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Submit

