Bayer and World Food System Center Research Program on improving sustainability of agricultural and food systems across key environmental metrics

Call for Proposals

Call 1: open from 01 March to 30 April 2023

Zurich, March 2023

1. Background and scope

The World Food System Center (WFSC) would like to strengthen its research on the understanding of benefits and tradeoffs of various measures in agricultural systems and production practices while maintaining the production potential and strengthening overall resilience of the agricultural system towards climate impacts, biodiversity loss, and beyond. This research should inform about the environmental, social, and economic benefits and tradeoffs of agronomic solutions, measures, or innovations to guide implementation in local production cropping situations.

Bayer AG has provided funding in the form of a donation to the World Food System Center to establish a research network on «Improving sustainability of agricultural and food systems across key environmental metrics». The aim is (1) to identify sustainable agricultural systems and production practices as outlined by the FAO for the [SDG indicator 2.4.1](#), (2) explore along key metrics and (3) further improve their sustainability by minimizing tradeoffs with special focus on the environmental footprint and risks of production. The focus is on collaboration and knowledge sharing between research and practice as well as interdisciplinary, solution-oriented research approaches for major crops grown in Europe.

The program is structured around a first call in 2023 to fund approximately two research projects. These projects can either be stand-alone postdoctoral researcher projects or combined activities in collaborative projects of two or more groups. Proposals of interdisciplinary projects are highly welcomed. Maximum funding for each project is set at 225,000 CHF each. A second call for proposals is planned for 2025.

2. Call topics

This call is intended to facilitate interdisciplinary projects aimed at reducing the environmental impact of agricultural systems while supporting food production as well as economic and social sustainability of all actors across the global food system. More specifically, the program funds interdisciplinary projects that together lay the foundation to better understand the sustainability of relevant European cropping systems and improve their environmental footprint.

All projects that address one or more of the following topics are invited to submit projects.

(1) Identifying sustainable agricultural systems and scalable production practices

- A transparent perspective on major environmental risks arising from agricultural production systems, and their adoption to optimize sustainability overall:
  - o Soil health with focus on minimizing local drivers of soil degradation,
  - o Land use footprint related to the provision of food quantity and quality,
  - o Tentative and transparent exploration of environmental impact and risk/benefit profile of different production practices (including calling out the data gaps).
- Identification of best practice examples tailored to respond to the local agronomic and environmental conditions as well as farmers' challenges with opportunities of upscaling.

(2) Exploring along key sustainability metrics
- How production inputs and their environmental impact can be reduced without compromising the food production potential excessively, including its land use footprint. What are the socio-economic consequences for the farms, markets, but also for the overall economy of a country?
  - o e.g. focus metrics (to be identified): farmers income (profitability), yields per hectare, soil degradation, climate balance, biodiversity (wild habitats).
- Their relation to integrated crop management and scalability.

(3) Further improving sustainability by minimizing tradeoffs with special focus on the environmental footprint and risks of production
- How new production practices, innovation in tools and varieties can make a positive contribution to the sustainability of agricultural and food systems.

We also encourage using the experimental infrastructure available at ETH Zurich relevant to these research fields, in particular, at AgroVet-Strickhof and the ETH Research Station for Plant Sciences.

If you are planning to submit a proposal, you are strongly encouraged to join an online **Q&A session** jointly organized by WFSC and Bayer on **14 March 2023, 11:00-12:00 CET** (zoom: https://ethz.zoom.us/j/63472181536).

3. Eligibility
To submit a proposal to this call, the Principal Investigator (PI) must be a researcher of ETH Zurich. Direct funding is restricted to ETH Zurich WFSC members. Non-ETH Zurich WFSC members can be co-applicants and their expenses can be covered for project costs (consumables, equipment, services, etc.) but they cannot receive funding for scientific personnel (doctoral students, postdocs, etc.).

Eligible are Professors, Senior Scientists and Senior Assistants ("OberassistentInnen"). The PI must thereby be an ETH Zurich employee with at least a 50% position, which must be guaranteed for the intended duration of the project. Researchers funded by this program must be supervised either by the PI or a co-applicant.

This call is intended to support interdisciplinary approaches that combine different methods and disciplines. For this reason, a co-applicant from another discipline is highly encouraged. However, external (non-ETH Zurich) co-applicants cannot receive funding from this program.

Proposals submitted to this call will only be considered if they fit to one (or more) of the topics outlined in Section 2.

If applicable, relevant ethical, legal and social considerations should be included in the proposal. The prospective research must also comply with the existing ethics regulations and adhere to the principles of research integrity valid at the ETH Zurich.

4. Duration and Funding

The maximum funding duration per project is two years for postdoctoral researchers. Costs will be covered for an amount up to 225'000 CHF per project.

The following costs will be covered for research projects:
- Salaries for postdoctoral researchers (based on ETH Zurich standard salary rates at the time of submission)
- Travel
- Consumables
- Education, outreach, communication and implementation activities

Eligible costs must be directly linked to the project and must be justified in the proposal. Salaries of the applicants and the co-applicants are not eligible for funding. Funding cannot be used for the purchase of new equipment or replacement costs of laboratory and field equipment.

Financial accounts must be administered at ETH Zurich.

The available funding is not divided between specific topics but will be awarded to the best projects. Funding will be allocated at the start of the project for the full duration of the project.

The WFSC is compensated for project coordination, interaction, communication of project results and the organization of workshops allowing to inform about the projects and the program (5% of the project costs, to be added in the project budget).

5. Deadline for proposals and submission procedure

The deadline for the submission of project sketches is: 30.04.2023

Email address for submission: wfsgrants@ethz.ch

Applications and supporting documentation must be written in English using the available project sketch template and must be submitted electronically as a single file in PDF format.

The Evaluation Committee will select projects in a two-stage approach.

(I) At the first stage, projects are selected based on a short project sketch of maximum 2-3 pages (see separate template).

(II) This description needs to include information on the scientists/research group(s) involved (interdisciplinary project teams are encouraged); as well as a short description of the project idea covering elements such as e.g. research objectives, applicability to SDG indicator 2.4.1, duration of the project and rough estimation of costs.

(III) At the second stage, applicants selected in the first stage are invited to submit a project proposal (see separate template).
The proposal needs to include
- A cover sheet in which the main applicant is identified, and basic information is given (position, institution, address, email) and in which the title of the project, funds requested and key words/disciplines as well as the duration of the project are indicated. All co-applicants associated with the proposal must also be clearly identified.
- An executive summary (maximum 400 words)
- A budget outlining the requested funds and justification
- The scientific proposal, including the state of research, the research goals and the research plan, expected milestones, as well as a list of literature references. The research plan should include sufficient scientific and technical details for the reviewers to be able to evaluate the proposal as a whole.
- The plan should also identify the Sustainable Development Goal (SDG) targets addressed by the project, as well as how it helps to solve inherent tradeoffs that arise upon attempting to achieve multiple SDG targets/indicators, specifically SDG 2.4.1.
- The scientific proposal should not exceed 10 pages per proposed project (A4, Arial font, size 11, 1.15 line spacing).
- CVs and relevant publications from the applicants and relevant involved researchers.

The Evaluation Committee (EC) evaluates the proposals and makes the final decision by consensus. In case this is not possible, a majority of the EC members decide. The Vice President Research of ETH Zurich decides on the funding of the projects based on the recommendations of the EC.

The submission and evaluation process will follow the schedule:

Stage	Start date	End date
Call open	01.03.2023	30.04.2023
Q&A Webinar		14.03.2023, 11:00-12:00 CET
Submission project sketch		30.04.2023
1st evaluation round	30.04.2022	31.05.2023
Decision on first round communicated		not after 31.05.2023
Submission project proposal		15.07.2023
2nd evaluation round	15.07.2023	31.08.2023
Final decision communicated*		not after 31.08.2023
Start of research projects*	Nov 2023-Feb 2024	

*Please note that dates for the final decision and start of research may be subject to change.

6. Evaluation Committee

All projects submitted to this call will be reviewed by the specially created Evaluation Committee (EC), which consists of three representatives of Bayer and four representatives of ETH Zurich.

The representatives in the EC of Bayer are
(i)   Rolf Christian Becker (Global Head of Partnerships - Academic Institutions)
(ii)   n.n., Bayer representative (tbc)
(iii) Christian Bogen (EMEA Public Affairs, Science and Sustainability)

The representatives in the EC of ETH Zurich are
(iv)   Robert Finger (WFSC Chair)
(v)   n.n. (tbc)
(vi)   n.n. (tbc)
(vii) Vice Chair WFSC or Martijn Sonnevelt (Executive Director WFSC)

As a rule, the proposals will be evaluated by the EC. The projects will be evaluated according to the evaluation criteria (see in Section 7). Where appropriate, the EC may consult external scientific reviewers to evaluate a proposal. In the case where the EC consults external reviewers, the timeline defined in the table is no longer applicable, as the 2nd evaluation round would last longer than indicated. In such cases, the project applicant will be informed, and the announcement of the final decision will be later.

The EC will make its funding recommendation to the Vice President Research at ETH Zurich, who makes the final funding decision.

Notification of the decision will usually be given within three to four months of the submission deadline. Projects may start immediately after approval and at the latest within four months after receiving the decision letter.

7. **Evaluation Criteria**
   Proposals will be evaluated according to two criteria blocks, namely program criteria as well as scientific criteria.

   Research Program Criteria:
   a. Relevance – How relevant is the proposed project for the program?
   b. Fit to topics of the call – Does the proposed project fit to at least one topic of the call?
   c. Inclusion of sustainability dimensions- Does the proposed project address multiple sustainability dimensions, across environmental, economic, and social aspects?
   d. Applicability to SDG indicator 2.4.1 – Does the proposed project identify how it helps to solve inherent tradeoffs?
   e. Transferability – How can the outcome of this project be put in practice?

   Scientific Criteria:
   a. Scientific Excellence – Does the proposed project demonstrate high scientific quality? How well conceived, organized, and state-of-the-art is the proposed activity?
   b. Originality – Is the proposed project creative and original?
   c. Interdisciplinarity – What is the added value of the interdisciplinary structure of the project? How appropriate is the combination of disciplines? What is the scientific added value from the partners to the project team?
   d. Potential Impact – What is the science and practical impact of the project on the challenges addressed?
   e. Feasibility – Does the project have a reasonable chance of succeeding in terms of resources, management, and organization, and what difficulties can be expected?
   f. Competence – What is the relevant experience of the project team in the research field of the proposed project?

   Based on the criteria listed above, projects will be graded using the following scale:
   A: Outstanding | AB: Excellent | B: Very Good | BC: Good | C: Average | D: Poor

   Projects that are awarded an overall grade of A will be funded as a priority. Projects receiving a D in one or both criteria blocks will not be funded.

8. **Project deliverables, monitoring, and outreach**
   The project teams are expected to report annually on the progress of the project, the results achieved, and the project budget. The Evaluation Committee will be assessing the yearly scientific and financial reports for each project.

A final report is due upon completion of the project, including all relevant outcomes (dissertations, publications, patents, etc.). The WFSC manages the reporting process and prepares the necessary documents and templates.

As collaboration and knowledge sharing between research and practice is a priority of this program, funded projects are expected to interact in the program network and also individually with Bayer. Workshops will be held with researchers and PIs of all funding projects to integrate learnings. Outreach activities will also be planned for each project, in consultation and collaboration with the project team and the team of the WFSC Executive Office.

9. Communication and Contact

Any notice or communication to be given within the framework of this call should be forwarded to the following contact persons:

For general enquiries related to the call, topics, and collaboration, please contact:
Jeanne Tomaszewski
ETH Zurich World Food System Center
jtomaszewski@ethz.ch