



**Swiss National
Science Foundation**

**Societal Implications
of the National Research Programme
"Plant Breeding Innovation" (NRP 84)**

Second Call for Proposals

Call Document

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What are the National Research Programmes?

Research conducted by National Research Programmes consists of research projects that contribute to solving contemporary problems of national importance. Under the provisions of Article 10, paragraph 2 letter c of the Federal Act on Research and Innovation of 14 December 2012 (Status as of 1 July 2023), the Federal Council selects the topics and focus areas for research in NRPs and mandates full responsibility for implementing the programmes to the Swiss National Science Foundation.

Article 3 of the Federal Ordinance on the Federal Act on Research and Innovation of 29 November 2013 (Status as of 1 September 2023) describes the NRP funding scheme as follows:

¹ The National Research Programmes (NRPs) of the Swiss National Science Foundation (SNSF) are a means of generating and conducting coordinated research projects that pursue a common goal.

² Topics of research are appropriate for National Research Programmes if:

- a. Swiss research can make a significant contribution to resolving the issue;
- b. research contributions from multiple disciplines are required to resolve the issue;
- c. research on the topic can be expected to produce research results within a five-year period that have practical applications.

³ In justifiable exceptional cases, an NRP may also be used to create specific additional research potential in Switzerland.

⁴ During the selection process, it will be considered whether:

- a. the expected results of the programme can be used as the scientific basis for governmental and administrative decisions;
- b. the programme can be carried out in the context of international cooperation.

1 Summary

Applications are invited in response to a second call for research projects to be conducted within the National Research Programme “Plant Breeding Innovation” (NRP 84). The second call is directed to researchers in the humanities and social sciences (HSS), in fields including (but not restricted to) the applied ethics of innovation, social sciences, science education, anthropology, history, communication and media, economics and law.

The programme was mandated by the Swiss Federal Council on 2 June 2023 to identify and test new plant breeding technologies (NBTs), which involve targeted mutagenesis, DNA editing and cisgenic insertion of DNA constructs that do not lead to transgenic products, and to evaluate their application from agronomic, social, ethics, economic, and regulatory perspectives in Switzerland. NRP 84 will fund interdisciplinary translational research on the agronomic application of NBTs in Switzerland within social, economic, and regulatory contexts. A priority is to examine ways in which NBTs might develop and bring new crop varieties to the market with traits that allow improved social, economic and environmental sustainability and bolster food security in Switzerland and beyond in the face of climate change. To promote interdisciplinarity, funded project teams will be linked in a communication network and will participate in annual research and discussion meetings.

NRP 84 has a total budget of 10 million CHF and will run for 5 years. The budget available to fund projects submitted in response to this second call is a maximum of 2 million CHF.

This second call concerns projects only in Module 2 (societal, ethical and economic implications of NBT implementation) and Module 3 (legal and regulatory implications, including those relevant to incentives, biosafety and environmental protection). New proposals must focus on HSS but may reference the themes of Module 1 (Technical feasibility of NBTs) and complement projects funded through the first call. However, proposals that address exclusively the aims of Module 1 will not be considered in this second call.

Research projects conducted under this second call should run for between a minimum of 24 months and a maximum of 42 months. Project budgets should fall between 300,000 and 500,000 CHF, though budgets on either side of this range may be considered if sufficiently justified.

The deadline to submit proposals for this second call is 7 May 2025 at 17:00 CEST, with decisions to be taken in early November 2025. Research on funded projects should begin in early 2026.

2 Scope of the second call for NRP 84

The National Research Programme “Plant Breeding Innovation” (NRP 84) will explore the capacity and social implications of new plant breeding technologies (NBTs) to address food security challenges in Switzerland, with particular emphasis on their economic viability, ethical and social acceptability and ecological sustainability. The NRP 84 is structured in three modules:

- Module 1: Technical feasibility of new breeding technologies
- Module 2: Ethics, society and economics
- Module 3: Regulatory considerations

This second call is only for full proposals in Module 2 and Module 3.

Proposals for this second call will thus be accepted from the humanities and social sciences (HSS), in fields including (but not restricted to) the applied ethics of innovation, social sciences, science education, anthropology, history, communication and media, economics and law.

Proposals should address issues and produce outputs relevant to one or more stakeholder groups, ranging from academics to legislators, as well as food producers, processors, retailers and consumers. Projects working with or on actors in biodiversity conservation, relevant non-profit organisations and advocacy groups, and the media, are particularly encouraged. Output types may go beyond 'traditional' scientific papers to promote and enrich outreach and public dialogue.

New proposals may refer to the themes of Module 1 ("Technical feasibility of new breeding technologies") and may complement projects funded through the first call. However, proposals that address exclusively the aims of Module 1 will not be considered.

3 Themes of the second call

NRP 84 is focussed on NBTs, which refer to the targeted alteration of the genetic material of plants, including but not limited to approaches that involve targeted mutagenesis, editing of DNA stretches, and targeted insertion of DNA constructs. Applicants should consult [the first call document](#) for relevant background to NRP 84 and its aims in general.

Importantly, NRP 84 encompasses not only biological and plant breeding aspects of NBTs (covered in the first call, now complete), but also ethical, social, economic, historical, anthropological, communicative, mediatic and regulatory aspects of NBTs (the focus of this second call). This might include comparisons with risks and benefits of other breeding approaches such as classical breeding, transgenic approaches, and random mutagenesis.

Module 2 – Ethics, society, and economics: evaluating the ethics, societal perceptions, and economic potential of NBTs

Examples of questions that might be addressed by projects in Module 2 include but are not limited to:

- What could be the potential social and environmental risks and/or benefits of NBTs?
- How do stakeholders, agricultural actors and the public view NBTs and their potential to contribute to a more sustainable bioeconomy and biodiversity?
- How could an applied ethics of innovation be informed by recent scientific advancements contribute to research, development and commercial use NBT products?
- What reasons (e.g., a focus on process versus product) and external factors might influence the understanding, acceptance, or rejection of NBTs by different stakeholders?
- What modes of communication, use of language (including the use of metaphors), education and public outreach could promote transparency, effective transmission of information, and productive social debate on the use of NBTs?
- What lessons can be learned from past controversies over the use of new technologies and practices in agriculture?

- How might market potential and competitiveness of NBT products be influenced by public perception of sustainable development, different farming practices, food safety, national and international markets and trade, and supply chain management?
- How should the potential economic and environmental benefits of NBT products be evaluated against those generated with alternative breeding methods?

Module 3 – Regulatory considerations: evaluating the adequacy of the current regulatory framework and the need for legal innovation to enable NBT implementation

Module 3 will address the need for and implementation of regulatory mechanisms that incentivise the use of NBTs to produce crops with economic, societal, and environmental benefits, while minimising potential risks and considering the diverse interests across different stakeholders. Projects might thus evaluate the adequacy of the current or proposed regulatory frameworks in Switzerland for the use of NBTs and their potential impacts on environmental sustainability and economic viability, from crop development to consumer choice, including agricultural, environmental, food, intellectual property, and international trade law. Comparisons of current or envisaged regulatory frameworks in Switzerland with relevant examples abroad may be relevant. Reference to concrete cases of NBT implementation, as considered in Module 1, are encouraged.

Examples of questions that might be addressed by projects in Module 3 include but are not limited to:

- How do different national and supranational regulatory frameworks define NBT products in comparison with traditionally bred crops or crops bred through transgenesis?
- How can requirements for product coexistence, separation of the flow of goods, and product identification, labelling and traceability be implemented?
- How can a new type of legal framework for NBTs be integrated into the overall existing national regulations, particularly those relating to environmental law and laws concerning genetic modification of non-human organisms?
- What conditions affect stakeholder trust of the regulatory safeguards for the development and distribution of NBT products?
- How should a new legal framework respond to the great dynamism of developments in science and practice in order to ensure a balance between the necessary legal certainty and alignment with technical developments?
- How do innovative national regulations fit into the supranational legal framework regarding European and international trade law?

4 Characteristics of NRP 84

Expected impact of research

Given the increasing global and national concerns over food security and threats to biodiversity in the face of climate change, NRP 84 is timely and has the potential to make a substantial impact by providing a knowledge base for transformative changes in the agro-environment and its relationship with society. Its anticipated impacts include the following:

- Spur plant breeding innovation by clarifying the technological feasibility of NBTs to create plant varieties with desirable traits at timescales not possible with alternative breeding approaches. Such traits may maintain or increase crop quality, productivity and resilience under more sustainable agricultural and cultivation systems. The impact of these new processes and products will be assessed in terms of both Swiss and global application potential.

- Contribute to food security, crop diversity and mitigation against the effects of climate change and biodiversity loss. Its expected impacts are thus related to several UN SDGs, notably: (2) Zero hunger; (3) Good health and well-being; (11) Sustainable cities and communities; (12) Sustainable production and consumption; (13) Climate action; (14) Life below water; and (15) Life on land.
- Uncover unanticipated ethical dimensions of NBT research and implementation, with potential impact on academic and public debate, policy formulation, and decision making. In particular, it will produce clear and applicable ethical guidelines for the development of NBT products (traits and plants), as well as for their regulation and diffusion, and for overall governance.
- Enrich public debate with new scientific insights and ethical perspectives.
- Identify factors that hinder or facilitate the public understanding of scientific information related to NBTs.
- Promote evidence-based public discussion on the potential environmental, societal, and economic risks and benefits of NBT products and thus expedite decision-making and policy formulation.
- Address the future development and use of new plant varieties by guiding legislation towards a novel, enabling, encouraging, fair, and protective regulatory environment; regulation shall ensure coexistence of different cultivation systems, e.g., through innovative risk-based regulatory mechanisms and labelling regimes.
- Establish Switzerland and the Swiss scientific community as a model for other countries, not only in designing NBTs, but also in clarifying the socio-economic and regulatory conditions under which the resulting products can reach markets and consumers, become societally acceptable, environmentally sustainable, and economically viable.

Implementation

Several stakeholder groups will contribute to and/or potentially benefit from the impacts of NRP 84. These include actors in the agri-food chain, farmers, food producers and retailers; ethics and socioeconomic experts; international trade partners; policy makers and regulators; non-governmental organisations (NGOs); and representatives of citizens, consumers, and civil society.

Stakeholders will be involved or consulted at different stages of NRP 84 through, for instance, workshops, seminars, written consultations and sounding boards. Collectively, the stakeholders will define the fields of action, discuss the relevance of results, and develop pathways to implementation for research in all three modules. These pathways include the following.

- Research results will be published in open-access international journals of fundamental and/or applied sciences, social sciences, economics, and law, as appropriate for dissemination to the academic community.
- Results will also be made available to non-science users via press releases and communications to relevant governmental departments at regional and national levels, nature conservation organisations, farmers' associations, agricultural colleges, and NGOs.
- Research achievements and their limits will be clearly identified, as will needs for follow-up research to address unanswered questions.
- To the extent that useful traits generated by NBTs are developed in the programme for Swiss agriculture, avenues will be sought for further trials, as necessary, or implementation for ultimate delivery to consumers. The infrastructure for further protected field trials provided by Agroscope will continue to be available for safe field testing of NBT-generated varieties.
- Results concerning ethics, public perception, and modes of communication on NBTs will be channelled to the media and educators, and the establishment of forums for public debate will be promoted.

- Results concerning the need for innovation in the relevant regulation framework will be discussed with legislators, both directly and via forums of public discussion and debate. Switzerland, with its well-established participatory processes in the definition and implementation of policies, is in an excellent position to promote regulatory developments.
- The programme's website will be kept up to date as new knowledge is produced by research within the NRP. Stakeholders are also invited to subscribe to a programme newsletter with bi-annual circulation throughout the programme to maintain and promote channels of communication and the exchange of information and ideas. Avenues will be sought to maintain the website beyond the programme's conclusion.
- The Steering Committee will seek to perpetuate the synthesis of knowledge and expertise gained through NRP 84 in a virtual interdisciplinary 'knowledge hub' linking plant breeders, agronomical and social scientists, and stakeholders. The network will involve investigators funded by the programme as well as the various associated stakeholders and researchers connected to the Swiss Plant Breeding Centre (which currently promotes technology application in plant breeding programmes in Switzerland more generally).
- Links with outputs from the new National Research Programme 'Biodiversity and Ecosystem Services' (NRP 82) will be forged during the programme and implementation of its findings.

Measures of success

The following list anticipates several possible measures of success for NRP 84:

- Testing of new plant varieties in the field, with conclusions reached about their viability and about agronomic practices that might improve production and environmental sustainability.
- A validated protocol that can distinguish crops generated using NBTs from those generated by traditional breeding or transgenesis.
- Identification of positive externalities or elements of value creation based on economic analysis of the potential of new plant varieties or traits.
- Measurable improvement in understanding and discussion of plant breeding in general by the full range of stakeholders, and identification of the main narratives and drivers of acceptance of, or resistance to, the use of NBTs in particular.
- Concrete formulation of an 'ethics of innovation framework' and applicable ethical insights and guidelines, covering the domains of new plant varieties and traits.
- Detailed translatability assessment of NBTs, including parameters such as intellectual property, regulatory and ethical considerations, market potential, scalability, and risk assessment.
- Identification of realistically applicable revisions in Swiss law, governance, and regulatory systems.
- Established successful research collaborations and networks across the Swiss science community and relevant stakeholders.

Practical significance

Both risk perception and risk communication should be covered by the programme, including consideration of the risk of action and inaction. Since ecosystem research was already covered by the National Research Programme "Benefits and Risks of the Deliberate Release of Genetically Modified Plants" (NRP 59), this should not be repeated. Instead, NRP 84 should focus on the innovative potential and translatability of NBTs in Switzerland.

Inter- and transdisciplinary research approach

The programme's success will depend on the cooperation of specialists from different disciplines, including but not limited to representatives from: plant and crop sciences (molecular biology, genetics, physiology, pathology, agronomy, breeding, agro-ecology); environmental and global change sciences; philosophy and ethics; history; science communication and public messaging; consumer psychology; socioeconomics, economics and behavioural sciences; and law, regulation and public policy. Researchers are encouraged to involve representatives of stakeholders or end-users and to clarify their roles in the respective project. The NRP 84 Steering Committee will identify, in consultation with the grant holders, further avenues for synergy among them.

Data access, data management and open research data

Research funded by the public should be publicly accessible as far as possible and free of charge. The SNSF is committed to this goal ([Open Science \(snf.ch\)](https://www.snf.ch/en/open-science)). Open Science is the umbrella term for all efforts to promote transparency and openness in science, including through open access to publications and data and research funding based on 'DORA' (Declaration on Research Assessment) principles.

A data management plan (DMP) must be submitted for funded projects prior to their commencement. All data generated by SNSF-funded projects must be publicly accessible in 'FAIR' (Findable, Accessible, Interoperable, and Reusable) digital databases, provided there are no legal, ethical, copyright, or other constraints. Researchers must also ensure coherence and interoperability of infrastructures and services connected with their project, as stipulated by the [National Strategy and Action Plan](#).

5 Submission and evaluation procedure

General conditions

Projects that were rejected after the first call for proposals in 2024 may be resubmitted for this second call, with appropriate revisions and provided they address the specifics of the present call.

Legal basis: The original, first call for proposals and the present call document for NRP 84, the Funding Regulations of the SNSF and the General implementation regulations for the Funding Regulations provide the legal basis for NRP 84 (Link: [Funding and Implementation Regulations \(snf.ch\)](#)).

Project duration: Research projects conducted under NRP 84 second call should run for between a minimum of 24 months and a maximum of 42 months. NRP 84 will not fund the fourth year of PhD students' salaries. Thus, projects employing one or more PhD students must ensure their salaries are guaranteed for 48 months at project selection.

Project budget: The indicative budget for proposals responding to this second call is between 300,000 and 500,000 CHF, though budgets on either side of this range may be considered if sufficiently justified. The budget available to fund projects submitted in response to this second call is a maximum of 2 million CHF.

Language of proposals: Proposals must be submitted in English.

Project start: To allow for optimal coordination and conclusion of research work within the programme's timelines (see Chapter 6), approved projects must start no later than four months after the approval date, *i.e.* between 1 December 2025 and 1 April 2026.

Cross-project synergy: given the nature of NRPs, active participation in NRP-specific activities is expected from research team members throughout the research phase as well as during the synthesis phase of NRP 84.

Cooperation with actors outside of academia is encouraged, provided that it generates added value and that the project does not serve a commercial purpose. Within the proposal, non-academic actors are project partners whose total requested funding share may not exceed 20% of the project's total budget. Project partners may contribute additional funding from other sources.

Cross-border research projects are encouraged if the competence of researchers from abroad is essential for the project, but researchers abroad may not act as the main applicant or main contact person for the SNSF. The budget for applicants based abroad may not exceed 30% of the project's total budget. Norms and salary rates for researchers abroad will be applied *mutatis mutandis*, with the SNSF maximum rates applied as the upper limit. Before submitting a proposal with a cross-border component, please contact the programme managers of NRP 84. Main applicants must be based in a Swiss research Institution, co-applicants may be based abroad.

Submission procedure

Full proposals are submitted, and project selection will be conducted in a one-stage procedure.

Online submission via mySNF: Proposals must be submitted online via the mySNF platform (www.mysnf.ch). Applicants and co-applicants need to register as mySNF users before they can submit a proposal. User accounts obtained in the past remain valid and provide access. It is advisable to register new user accounts well before proposal submission.

Submission deadline:

The deadline for submitting proposals is Wednesday 7 May 2025, 17:00 CEST.

Content:

In addition to the data to be entered directly in mySNF, the following documents must be uploaded:

- **Research plan** (in PDF format): Applicants must use the template provided and conform to instructions provided on the mySNF platform under 'information/documents'. The research plan must not exceed 15 pages.
- **CV** (one PDF per applicant): Applicants must compile their CV on the SNSF Portal and subsequently upload a PDF to mySNF in the data container 'CV and major achievements'. Information can be found on the [CV website](#) and on the [SNSF Portal](#).
- **Supplementary documents:** Support letters and letters confirming cooperation or co-financing must be uploaded on mySNF. Ethical approval, if needed, must be submitted at the latest before requesting the first funding instalment.

Evaluation procedure

The Secretariat of the SNSF will check whether the formal requirements are met before forwarding the proposal for scientific evaluation (*cf.* chapter 2 of the Funding Regulations of the SNSF).

Proposals that do not meet the formal requirements will not be considered.

Proposals will be externally reviewed. The Steering Committee may opt to include an additional step in the form of interviews of the applicants at the evaluation meeting. Based on the expert reviews and, if applicable, on the interviews, the Steering Committee will assess the proposals and propose their approval or rejection to the National Research Council. Overlapping research questions addressed by more than one project can form the basis of the rejection of proposals.

Evaluation criteria

Evaluation of eligible proposals will be based on:

- **Compliance with the aims of NRP 84:** The coherence of the programme is an important aspect to be considered. Proposals must correspond to the programme's aims specified in this call and must fall within the overall framework of the programme.
- **Scientific quality:** Proposals must meet high standards in relation to scientific quality, scientific relevance, topicality, originality, and suitability of methods and feasibility. They must exhibit an innovative component, must take account completed or ongoing research projects in the same field, and should be achievable within the timeframe of the programme. Projects will additionally be evaluated in terms of the applicability of their outputs (e.g., ethical frameworks, teaching and communication insights, and legal guidelines).
- **Inter- and transdisciplinarity:** In projects with research questions that involve various disciplines or require approaches that overstep the boundaries between science and practice, team constellations, interactions between the actors, methodology and project management must be set up accordingly.
- **Application, implementation, and relevance to practice:** The potential for practical application and the implementation of results is a key element of NRPs. Projects must have clear practical relevance.
- **Scientific qualifications of the researchers:** Applicants must have a proven scientific track record in the field of the proposal and the ability to carry out the research project. Adequate personnel resources and a suitable infrastructure must be secured for the project.
- **Inclusiveness and diversity:** Research should reflect requirements for attention to inclusiveness and diversity (e.g., priorities of all relevant national and international stakeholders) and to vulnerable groups (e.g., low-income groups or underprivileged trading partners or countries).

6 Schedule

Schedule

Publication of the first call for proposals	12 December 2023
Submission pre-proposals 1 st call	14 March 2024
Decision on pre-proposals 1 st call	Early June 2024
Submission full proposals 1 st call	2 September 2024
Final decision on full proposals 1 st call	December 2024

Publication of the 2 nd call	3 February 2025
Start of research of projects 1 st call	January to April 2025
Submission proposals 2 nd call	7 May 2025
Final decision of proposals 2 nd call	November 2025
Start of research of project 2 nd call	December 2025 to April 2026
End of research (both calls)	June 2030
Programme closure with publication of programme synthesis and final reporting	Early 2031

The individual projects of the second call can have a maximum duration of 42 months.

7 Organisation and Actors

Steering committee

- John Pannell, Professor of Plant Evolution, Department of Ecology and Evolution, University of Lausanne, Switzerland (President)
- Philipp Aerni, Professor of Sustainability and Impact Entrepreneurship, School of Management, University of Applied Sciences and Arts of Western Switzerland
- Christine Clavien, Professor of Ethics, Institute of Ethics, History and the Humanities, University of Geneva, Switzerland
- Simone Dietrich, Professor in Political Science and International Relations, Geneva School of Social Sciences, University of Geneva, Switzerland
- Jane Langdale, Professor of Plant Development, Department of Biology, University of Oxford, United Kingdom
- Laurence Moreau, Research Director, Quantitative Genetics and Evolution, Institut national de recherche pour l'agriculture, l'alimentation et l'environnement (INRAE), France
- Roland Norer, Professor of Public and Rural Law, Faculty of Law, University of Lucerne, Switzerland
- Roland Peter, Head of Research Division Plant Breeding, Agroscope, Switzerland
- Wim Verbeke, Professor of Agro-food Marketing and Consumer Behaviour, Department of Agricultural Economics, Ghent University, Belgium
- Bettina Ernst, Biotech entrepreneur (Innovation expert), Preclin Biosystems, Switzerland

Representatives of the Federal Government

- Bettina Hitzfeld, Head of Division Soil and Biotechnology, Federal Office for the Environment FOEN
- Teresa Koller, Department Sustainable Plant Protection and Varieties, Federal Office for Agriculture FOAG
- Patrizia Le Donne, Division Knowledge Foundation, Federal Food Safety and Veterinary Office FSVO

SNSF Research Council Delegate

- Mira Burri, Professor of International Economic and Internet Law, Faculty of Law, University of Lucerne, Switzerland

Head of Knowledge Transfer

- Mirko Bischofberger, Science Studios, Zürich, Switzerland

Programme Managers

- Martin Christen, Swiss National Science Foundation, Bern, Switzerland
- Julien Leuthold, Swiss National Science Foundation, Bern, Switzerland

8 Contacts

For questions regarding the submission of proposals, please contact the programme managers Martin Christen and Julien Leuthold, nfp84@snf.ch or +41 31 308 22 22.

For questions concerning salaries and eligible costs, please contact the Head of Finance, Roman Sollberger: roman.sollberger@snf.ch or +41 31 308 22 22.

For technical help with [mySNF](#) and electronic submissions, please access the SNSF Support Portal:

snf-ch.atlassian.net/servicedesk

Hotline: Tel. +41 31 308 22 00 (Deutsch/Français/English)

NFP Homepage: www.nfp84.ch

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