



Action Plan 2013–2016

Implementation of the SNSF multi-year programme

The Swiss National Science Foundation (SNSF) is the most important Swiss agency promoting scientific research. As mandated by the Swiss Federal government, it supports all disciplines from philosophy and biology to the nanosciences and medicine.

Action Plan 2013–2016

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Foreword

In the revised Federal Act on Research and Innovation of December 2012, the Swiss parliament assigned a central role to the Swiss National Science Foundation in the promotion of research financed with public funds, stating that “As part of its designated tasks and responsibilities, the Swiss National Science Foundation shall decide on appropriate instruments and forms of promotion”.

The present Action Plan sets out how the SNSF, as the Swiss federal government’s body funding research in all scientific disciplines, intends to carry out its mandate in the period 2013-2016. The Action Plan is based on a multi-year programme prepared for the federal authorities in 2010, in which the SNSF set out its strategy and the financial resources necessary for implementation. The SNSF adjusted its objectives in line with the funding limits approved by parliament for the period 2013-2016, and decided which measures should be implemented as a matter of priority. These measures are the subject of a service level agreement with the federal government. In the present Action Plan 2013-2016, the SNSF wishes to provide all interested stakeholders with a summary of its current catalogue of measures, to indicate which objectives it will be unable to achieve for financial reasons, and to offer a tentative look to the future.

“We invest in researchers and their ideas”. This key phrase from the mission statement of the SNSF also applies to the document before you. Funding schemes and measures are recurring themes. The overriding objective of the SNSF remains that of supporting excellent, established researchers and promising young researchers in their quest for new knowledge. We should like to thank the competent federal authorities for creating conditions conducive to our activities. Our aim is to make the best possible use of the resources made available to us.

1. Summary

The present Action Plan sets out how the SNSF intends to implement the multi-year programme submitted to the federal authorities in 2010 in view of the funds available for the period 2013 to 2016 and how it aims to contribute to maintaining Switzerland's position as a leading research location in the long term.

The catalogue of measures focuses on three **priority areas** (see chapter 2):

- Ensure enough young scientists by offering funding schemes that are career-friendly
- Flexibly support researchers in their quest for excellence
- Valorise research and research findings

Ensure the emergence of the next generation of researchers: in Switzerland, careers in academia are filled with uncertainties which, particularly for Swiss researchers, reduce their appeal in relation to other career opportunities. Encouraging young talents to consider a career in research is therefore the uppermost priority of the SNSF. Supporting measures for project collaborators, redesigned mobility fellowships and a doctoral programme in the humanities and social sciences are expected to create opportunities for young researchers at key stages in their careers (see chapter 3).

Support the quest for excellence: the speed and importance as well as the complexity and internationality of research endeavours are increasing significantly. In this context, the SNSF supports the performance of individual researchers as a key to new findings on all levels: flexible funding opportunities in all disciplines and for use-inspired basic research in particular, good framework conditions for international cooperation and mobility, participation in national and international collaborative projects and programmes, and access to infrastructures. In addition, the SNSF runs its own programmes focusing on specific needs of research and society (see chapter 4).

Valorise research findings: Research contributes significantly to solving social and global problems. Additional measures of the SNSF support open access to research results and their application in the practical realm (knowledge and technology transfer - KTT) as well as the dialogue between researchers and the public (see chapter 5).

Furthermore, the SNSF fulfils **additional responsibilities** in accordance with the ERI Dispatch 2013-2016 and the special dispatch concerning the "Action plan for coordinated energy research" (see chapter 6). Measures set out in the multi-year programme 2012–2016 that the SNSF will be unable to carry out with the available funds are itemised in a separate **list of funding cancellations** (see chapter 7).

In conclusion, the Action Plan **looks to the future** (see chapter 8). As key challenges, the SNSF has identified the increasing workload of the National Research Council, the support of research infrastructures and of certain specialist fields, the early recognition of trends and needs as well as the ongoing improvement of career opportunities for young researchers.

2. General situation and priority areas

Switzerland is a highly successful and attractive research location with excellent research groups working to the highest international standards, offering good infrastructure, well above-average salaries and a high quality of life. The large proportion of researchers from abroad is evidence of the fact that in the international battle for the best talents, Switzerland occupies a good starting position. Both its institutions of higher education and its funding organisations are called upon to ensure optimal framework conditions so as to continue to attract the most innovative researchers, increase the number of home-grown talents willing to pursue an academic career and be able to secure Switzerland's position as a top research location in the long term.

In the light of the above, and on the basis of a comprehensive assessment of the situation, the SNSF has identified the following priority areas for its funding activities in the period 2013-2016:

1. Ensure enough young scientists by offering funding schemes that are career-friendly : In Switzerland, careers in academia are strewn with obstacles and filled with uncertainties since, as a rule, permanent positions are available only from the level of professorship upward. Are they still sufficiently attractive, compared with alternative career options? There is ample evidence that, specifically in the case of young people having grown up in Switzerland, this is not necessarily so. The number of graduates who obtain a doctorate within five years of completing their studies has declined by more than a third since the 1980s.¹ Encouraging a greater number of young talents to consider a career in research at institutions of higher education or in industry is therefore the uppermost priority of the SNSF. Its objective for the future is to make an even greater contribution to ensure that our junior researchers are given the right opportunities, at the right time, to show what they are capable of achieving.

2. Offering flexible support to research and researchers in their quest for excellence: The pace, scope and impacts of scientific discovery in research are increasing at a tremendous speed. Today, new methods of investigation and technologies building on years of basic research are enabling researchers to tackle problems and issues that are significantly more complex than those encountered only ten years ago. Consequently, there is often a global dimension to research, and networking has become standard. Frequently, scientific discoveries require expert knowledge and input from different disciplines, in addition to extensive infrastructures.

However, despite the interdisciplinary, multidisciplinary, international and highly complex nature of research, the excellence of individual researchers remains the key to the success of any large research project. The goal of the SNSF is to support individual performance by offering flexible funding options for all disciplines and types of research and by working to ensure good framework conditions for international cooperation and mobility, participation in national and international collaborative projects and programmes, and access to infrastructure.

¹ Leemann R. J., Stutz H., *Geschlecht und Forschungsförderung (GEFO)*, 2008

3. Valorisation of research and research findings: Research allows us to explore ever more complex phenomena and can thus make a significant contribution to solving global issues and problems such as climate change, energy security and pandemics. The development of our modern, knowledge-based societies is increasingly dependent not only on progress in research and the quality of research findings, but also on the ability and willingness of our societies to accept and use new knowledge. As a result, the SNSF wishes to make greater efforts at encouraging the transfer of knowledge and technology to the economy and society, and within science and education.

As possibilities of research have grown, so have the expectations of the public and of the political domain. Both demand with increasing frequency that research should justify the tax money invested in it by producing visible results that are beneficial to society. This approach often overlooks the fact that it is very common for the impact of research, and especially basic research, to become apparent only indirectly and in the long term. The SNSF considers the discussion surrounding the usefulness of research as a challenge to raise public awareness of research findings and to explain the many different ways in which they have an impact on society.

The above priority areas for the coming years aside, the **basic principles of SNSF funding policy** remain unchanged. The SNSF is at the service of research and researchers in non-commercial fields of science and represents the scientific community as a whole. It supports research projects in all disciplines and allocates funding on a competitive basis only. In doing so it sets high standards of quality for research in Switzerland.

The SNSF acknowledges that the **policy makers** need to put the accent on priority areas in specific fields of research and is willing to support them in this regard (see chapter 6 and items 4.3.1, 4.3.2 and 4.3.4). It is important, however, that even under these conditions the quality of the research should remain the decisive factor and that researchers should be given as much say as possible in the choice of research topics.

The **international environment** is essential, since in many areas of research international cooperation is a condition for excellence. International programmes support foreign-policy development goals but also, by providing material support, promote the scientific excellence of new research partners. At the European level, the SNSF is working towards the adoption of the Framework Programme for Research and Innovation Horizon 2020, in a context characterized by cost-cutting efforts. A strong European Research Area also strengthens research in Switzerland, provided cross-border cooperation and participation in international programmes can be ensured and, if possible, expanded.²

In its **Action Plan 2013–2016** the SNSF describes the measures it intends to take to implement the above priority areas and to achieve the objectives associated therewith. These objectives were drawn up for the multi-year programme on which the

² At the time of going to press, Switzerland's participation in Horizon 2020 had not yet been confirmed.

Action Plan is based, in consultation with our partners in education, research and innovation (in particular the CRUS, KFH, academies and CTI).

According to the ERI Dispatch 2013–2016, the SNSF will have **CHF 3.7 billion** at its disposal during this four-year period to implement the above projects (see table). Measures set out in the multi-year programme 2012–2016 that it will be unable to carry out with these funds are itemised in a separate list of funding cancellations (see chapter 7). Depending on changes in demand and in national and international conditions, objectives may be adjusted during the funding period.

In CHF million	2013	2014	2015	2016	2013-2016
Projects, careers, programmes, infrastructures, science communication	779.1	789.4	831.4	883.1	3283.0
Annual growth*	+ 1.4%*	+ 1.3%	+ 5.3%	+ 6.2%	Ø+ 3.5%
Overhead, additional contributions	85.0	91.0	94.0	100.0	370.0
Additional tasks (FLARE, bilateral programmes, energy research)	14.2	20.0	25.9	30.5	90.6
Total	878.3	900.4	951.3	1013.6	3743.6

* Basis 2012: 768.4

3. Designing funding schemes that support careers

The SNSF supports scientific careers both through projects employing primarily young researchers and through career funding schemes.

3.1 Targeted support for project staff

3.1.1 Employment conditions of young researchers

At present the conditions of employment of young researchers lack consistency and in some respects are unsatisfactory. For example, in some disciplines only a limited number of working hours can be devoted to research or dissertation work, and in many instances working hours are longer than the hours of the position. On the one hand the SNSF strives to adapt its salary policy to the conditions, needs and prospects at universities. On the other hand it would like to assume its responsibility as the most important research-funding agency in Switzerland and help improve working conditions through its salary policy. With this in mind it has discussed its proposals for optimising the salary and employment policies applying to young researchers with the CRUS and all Swiss universities. The objective is to **increase the salaries of doctoral students** by 7%, starting in 2014. At least 60% of a post should be available for scientific further qualification in view of the dissertation. New, uniform salary ranges will apply to other staff.

3.1.2 Mobility grants for doctoral students

Mobility is an important criterion in awarding academic positions and funding, also in highly competitive SNSF programmes to promote young researchers, such as Ambizione and SNSF professorships. In the spirit of equal opportunities and bearing in mind the objective of reconciling work and family life, mobility should be encouraged at an early career stage and taken into consideration later on. Career funding schemes include mobility programmes (fellowships) to fund stays abroad, also at the doctoral level (see item 3.2.1). Until the present, project financing did not include comparable offers for doctoral students employed in SNSF research projects. Since 2012, the SNSF has also been funding **stays abroad by doctoral students** participating in **approved research projects** (individual projects, Sinergia, NCCRs, NRPs, etc.).

3.1.3 Support payments for postdoctoral scientists with young families (120% model)

Reconciling the demands of work and family life is a major challenge in any effort to promote junior researchers. The “120% model” is designed to permit more flexible career planning and to prevent research activities from being delayed or ended altogether. It is aimed at postdoctoral scientists with child-care obligations, who have a demonstrated potential for a continued career in academia and at least 80% of whose salaries are funded through SNSF resources. The introduction of the “120% model” will enable postdoctoral scientists who have the primary responsibility for child care to **reduce** their **working hours**, the lower limit being a 60% position. Posts with reduced working hours can be supplemented by a maximum of 20% above the initial percentage of the position, to allow for the hiring of appropriate **support per-**

sons (technicians, laboratory assistants, etc.). Alternatively, or in addition to a reduction in the postdoctoral post, limited child-care funding can be applied for.

3.2 Career funding: attractive schemes for doctoral students and postdoctoral researchers

3.2.1 Mobility fellowships

To ensure clearer delimitation and greater flexibility the SNSF has reorganised its mobility fellowships awarded for stays abroad. These changes take effect in 2013. Like the existing fellowships for prospective and advanced researchers, the new mobility fellowships also offer young researchers a way of financing a stay abroad to increase their knowledge and enhance their scientific profile. To replace the fellowships for prospective researchers, the SNSF has created two new instruments: **Doc.Mobility**, which is designed specifically for doctoral students, and **Early Postdoc.Mobility**, for postdoctoral researchers just starting their careers. Fellowships for advanced researchers are replaced by the scheme **Advanced Postdoc.Mobility**. In future it will be possible to divide up stays abroad into several stages, possibly coupled to a period spent in Switzerland. As is the case with other career funding schemes, age limits have been replaced by indicative values, so as to be able to do justice to the personal situation of individual applicants.

3.2.2 Doc.CH

In addition, the SNSF in 2013 introduced a new **excellence scheme** at the doctoral level, which will initially be available for the **humanities and social sciences**. Doc.CH is aimed at promising researchers wishing to write a dissertation on a subject of their choice. Doctoral students must be enrolled at a Swiss university or equivalent institution of higher education. The SNSF pays for their salaries for up to four years. As a result they are largely independent of other commitments and should normally be able to complete their dissertation within the four-year period during which financing is received, thus enabling them to compete against candidates from abroad when pursuing careers in academia.

Doc.CH is the SNSF's response to the insufficient support for doctoral positions that is a source of concern to many professors, particularly in the humanities and social sciences. Furthermore, Doc.CH, together with more doctoral positions in project funding schemes, compensates for the termination of the doctoral programme ProDoc. Since the discontinuation of ProDoc in 2012, the responsibility for the training of doctoral students has passed entirely to the universities and equivalent institutions of higher education.

4. Flexible support in the quest for excellence

Through projects, programmes and infrastructure funding the SNSF wishes to offer researchers striving for excellence the most flexible support possible.

4.1 Use-inspired basic research

The history of scientific breakthroughs and success stories shows that many fundamental insights were gained in the course of applied research. The SNSF concentrates on funding basic research rather than use-inspired research, the objective of which is to make direct use of findings for commercial purposes. However, the SNSF would like to offer better funding for research **whose main objective is to increase scientific knowledge, even though the problems it seeks to address are of a practical nature**. Since 2011 the SNSF has been referring to this type of research as “use-inspired basic research”, in reference to the research classification term used by Stokes (1997); this being said, the boundaries between categories may at times be blurred.

The category “use-inspired basic research” is used to ensure that use-inspired applications are evaluated adequately, not least in view of the fact that the DORE programme, which had been designed for **universities of applied sciences and universities of teacher education**, was integrated into normal project funding in 2011. When use-inspired applications are received, their non-scientific significance (broader impact) is one of the assessment criteria, and external experts with a practical background in the field in question are consulted.

In addition, in establishing the category “use-inspired basic research” the SNSF acknowledged the fact that scientific research involving the components “increasing scientific knowledge” and “use” is of growing national and international importance. The objective is to close the gaps between the funding of pure basic research (usually financed by the SNSF) and direct use-inspired research (often financed by the Commission for Technology and Innovation (CTI)). It is not possible to draw a clear line between funding by the SNSF for projects whose central aim is to increase scientific knowledge, and funding by the **CTI**, which is aimed at market-oriented use. The two organisations agree that **overlapping funding** should be the goal.

4.2 International integration and mobility

4.2.1 Grant Union

International integration and mobility are increasingly fundamental to researchers. In many areas of specialisation international contacts are a precondition for excellent research. Through the association Science Europe³, which groups together its sister organisations, the SNSF as part of the Grant Union is working to improve the institutional framework conditions for international research. Existing agreements serve to **promote mobility within Europe** (the Money Follows Researcher scheme) and to **facilitate joint research projects** with specific countries (Lead Agency or Money follows Cooperation Line). The SNSF is working to extend these agreements, also to G8 countries.

³ *Science Europe* was founded in 2011. It supports multilateral cooperation among research funding and research performing organisations, and represents their interests at the policy level.

4.2.2 Collaborative projects

Of equal importance is that Swiss researchers should have access to international collaborative projects. Through project funding or the National Research Programmes (NRPs) the SNSF supports researchers' participation in **Joint Programming Initiatives** or **ERA-NETs**. Since the activities coordinated by the European Science Foundation (ESF) are scheduled to end by 2015 and Joint Programming Initiatives are taking time to get off the ground (see item 4.3.2), ERA-NETs are becoming increasingly important. They are launched in cooperation with other funding organisations as part of the EU Framework Programmes for Research on specific, predefined topics or to promote cooperation with specific countries. At present Switzerland is taking part in some 25 ERA-NET initiatives covering several areas of research. In the longer term the SNSF hopes to create synergies with its involvement in the federal government's bilateral programmes (see item 6.2).

4.3 Programmes

4.3.1 National Centres of Competence in Research (NCCRs)

By launching the fourth series of NCCRs the SNSF continues to promote longer-term research projects on topics of strategic importance for the future of Swiss science, the Swiss economy and Swiss society. The main goal **is to strengthen research structures** in these fields.

The imminent completion of the first series of NCCRs has been an occasion to subject this particular funding instrument to close scrutiny. As a result, 12 years after having launching the series in 2001, the Swiss Science and Technology Council, on a mandate from the federal government, has been **evaluating the effectiveness** of the NCCRs. The conclusions of the evaluation will be decisive for the future of this instrument, especially as regards the format of the fifth series of NCCRs, scheduled for the start of the funding period 2017-2020.

4.3.2 National Research Programmes (NRPs)

On the basis of a positive effectiveness evaluation carried out by the federal government, the SNSF will be continuing the NRPs by launching new programmes periodically. Progress is on track, since last year the SNSF has launched NRP 68 "Sustainable Use of Soil as a Resource" and NRP 69 "Healthy Nutrition and Sustainable Food Production", and a further NRP review period is planned for 2013, covering energy research.

NRPs are solution-oriented. They make sound scientific contributions towards solutions to urgent problems that are of national importance, whether they relate to society, politics or the economy. The **transfer of knowledge and technology** is at the forefront. The objective is to launch a cooperation programme with the CTI during every NRP review period. Such a cooperation was already achieved for NRP 62 "Smart Materials" and is also envisaged for NRP 69.

International integration is likewise supported by the NRPs. Research groups in the NRPs 68 and 69 can submit proposals for EU **Joint Programming Initiatives**. The SNSF will carefully assess the initial experiences in this area.

4.3.3 Programmes for biology and medicine

Gathering and analysing population and disease data for long periods provides a valuable database for research and society as a whole. By supporting **longitudinal studies** the SNSF helps feed this database. The studies funded by it generally have a multicentric design and are supported by various research institutions, whose contribution is supplemented by the SNSF. Existing **cohort studies** are transferred into the new funding scheme on a competitive basis. Scientific criteria aside, the decisive factors are the significance of the studies for the Swiss health-care system and their suitability as a platform for national and international research projects. It is essential that the database be nationally and internationally interconnected, as this makes the research associated with it more valuable and useful to society. The SNFS will examine to what extent this instrument might feasibly be extended to non-human studies.

The multi-year programme 2012–2016 contains two further initiatives to strengthen biomedical research: firstly, a programme to support multicentric studies at the interface between basic and clinical research (**translational medicine**), in continuation of the Special Programme University Medicine, but with free choice of topics; and on the other hand support for multicentric clinical trials which are initiated and conducted by researchers themselves (**investigator-driven clinical research**) and are not of interest to commercial research. The SNFS has financial resources for only one of these two programmes. The decision as to which of the two it will launch will depend on synergies with other funding schemes and financial feasibility.

4.3.4 International programmes

Through their joint programme, **SCOPES**, the Swiss Agency for Development and Cooperation (SDC) and the SNSF support scientific collaboration between researchers in Switzerland and their colleagues in Eastern Europe and Central Asia. In Eastern European countries the programme is designed to strengthen **individual research capacities**, promote the **institutional development** of research and teaching, and improve **integration** into the international scientific community. Swiss researchers have already come to appreciate their partners in Eastern Europe for their high levels of scientific competence, specialisation and creativity. In addition, collaborative projects for which the Eastern European partners have virtually no resources at their disposal permit comparative studies or access to research objects such as ecosystems or patient pools. SCOPES contributes to further increasing the performance and competitiveness of Eastern European partners, in preparation for future collaboration in EU Framework Programmes for Research.

Through the **Swiss Programme for Research on Global Issues for Development (r4d)** the SDC and the SNSF jointly support partnership projects between researchers in Switzerland and in developing and emerging countries in Africa, Asia and Latin America. r4d promotes development-relevant research on global issues which through new insights and innovative approaches contributes to sustainable global development. The focus is on reducing poverty and protecting public goods in developing countries. There are five main topics: poverty reductions, food security, supply and financing mechanisms in health care, sustainable use of ecosystems and the

mechanisms underlying causes and solutions in social conflicts. Resources are also available for projects on topics freely chosen by researchers.

4.4 Research infrastructures

4.4.1 Targeted funding policies

In many scientific disciplines research infrastructure is a central precondition for advances in knowledge.

Through the funding scheme **R'Equip** the SNSF supports the purchase of research equipment and apparatuses. Furthermore, in individual cases it currently also pays direct contributions to research infrastructure indispensable for the continuation of research projects.

Researchers also rely on the installation and operation of cost-intensive apparatuses, measurement devices, databases and cohorts and, in the case of specific research initiatives, on networking, coordination and other services. Support for this type of research infrastructure usually takes the form of **initial financing with a long-term benefit for research in particular subject fields and areas of specialisation**; for the period 2013-2016 the SNSF is planning to provide this form of support especially in the area of biomedicine (see item 4.4.2).

Funding of the above kind of infrastructure can be decisive for the development of entire disciplines and must be based on strategic and broadly supported decisions. To ensure that this is the case the SNSF is currently reviewing its funding policy, also with a view to the next multi-year plan for the period 2017-2020. **Competitive procedures** and **research focused on specific scientific questions and their answers** are of central importance. In this regard the SNSF will also monitor the development needs of important disciplines. As regards the funding of infrastructure, the SNSF further seeks to consolidate the sharing of responsibilities among the SNSF and the **Academies**.

4.4.2 Infrastructures for biomedical research

To strengthen patient-oriented clinical research in Switzerland, in the funding period 2008-2011 the SNSF provided initial financing for the establishment of interdisciplinary centres of competence in clinical research. These **clinical trial units** (CTUs) offer researchers support in the planning, execution and evaluation of clinical trials. As coordinating centre, the SNSF, together with the Swiss Academy for Medical Sciences (SAMW), initiated the creation of the **Swiss Clinical Trial Organisation** (SCTO). In the period 2013-2016 the SNSF, on a mandate from the State Secretariat for Education, Research and Innovation (SERI), will make further contributions to the consolidation of the SCTO and the CTU network, as well as the international integration of these organisations within the European Clinical Research Infrastructures Network (ECRIN).

Starting in 2015 the SNSF will also promote the national and international **integration of biobanks** through grants for data linkage. The biobanks in question have to service a defined research objective and be supported by a consortium. In addition, the SNSF will call for proposals to set up a coordinating platform for biobanks, which

will also ensure collaboration with the European infrastructure project Biobanking and Biomolecular Resource Research Infrastructure (BBMRI) (see item 4.4.3).

4.4.3 Contributing to the planning and implementation of infra-structures

In its multi-year programme the SNSF stated that it was willing to contribute its knowledge to the national and international planning of important research infrastructures. As a result, from 2013 to 2016 the SNSF will offer its expertise in the **consolidation of the Swiss roadmap for research infrastructures.**

In matters relating to the Swiss roadmap for research infrastructures and as part of the European Strategy Forum on Research Infrastructures (ESFRI), the SERI can mandate the SNSF to finance research infrastructures in particular subject areas and specialist fields. In the period 2013 to 2016, according to the ERI Dispatch, the SNSF will support Switzerland's participation in the European Social Survey (ESS), the Survey of Health, Ageing and Retirement in Europe (SHARE) and the Integrated Carbon Observation System (ICOS), as well as in the Biobanking and Biomolecular Resource Research Infrastructure, mentioned above, and the European Clinical Research Infrastructures Network. Furthermore, on a mandate from the federal government the SNSF will assume responsibility for the FLARE funding scheme (see item 6.1).

5. Valorisation of research and research findings

5.1 Knowledge and technology transfer (KTT)

The SNSF supports the transfer of research findings into the practical realm by funding **use-inspired basic research** carried out as part of the **NCCRs** and **NRPs** and through close collaboration with the **CTI**, which now also extends to energy research (see items 4.1, 4.3.1, 4.3.2 and 6.3). **An analysis of all KTT** activities is planned to show how the SNSF, as part of its specific mandate to fund basic research, might better complement efforts made by other actors and enhance its contribution to the promotion of knowledge transfer. **“Head-to-head” transfer** plays an important role in this regard: most of the funds invested by the SNSF into projects and fellowships serve to train young researchers. The private economy is a grateful employer of scientists familiar with the most up-to-date knowledge and latest methods.

5.2 Science communication

5.2.1 Access to research findings

Access to research findings is an important prerequisite for the transfer of knowledge and technology, also within the scientific community. As a result, the SNSF supports the trend towards **open access** and calls for scientific publications from projects it has funded to consistently be freely accessible. Starting at the end of 2013, researchers working on approved projects can claim grants for publications in pure open-access journals. However, for scientific progress it is just as important that the **primary data** obtained in the course of research projects be available for other such projects. The SNSF is looking into how it might be able to support this.

Through the **research database P3** the SNSF provides every project it funds with a publicly accessible platform displaying new publications, knowledge transfer events, public communication activities and other project outputs.

5.2.2 Communicating with the public

The SNSF encourages researchers to present their projects and findings and to engage in exchanges with the public. Since 2012 the SNSF funding scheme **Agora** has been supporting researchers wishing to enter into dialogue with the public about their scientific work and its significance to society. Dialogue platforms financed by the SNSF include, for example, workshops, smartphone apps, exhibitions, events, e-books and games. A precondition for funding is that the target public should be able to participate actively in the exchange.

In its research magazine, **Horizons**, the SNSF in turn reports about the findings of scientific projects funded by it, and about the minds behind them. In addition to targeted communication with researchers, a further objective of the SNSF's **re-vamped website**, scheduled to be launched autumn 2013, will be to use accessible examples to inform the wider public about research and its (potential) effects, and in this way to work towards a better understanding of basic research.

6. Additional tasks

In the ERI Dispatch 2013-2016 and its special dispatch concerning the “Action plan for coordinated energy research” the federal government has delegated further tasks to the SNSF.

6.1 FLARE

Through the FLARE (Funding LARge international REsearch projects) scheme, the SNSF, on a mandate from the federal government, allocates additional resources to permit and optimise the use by Swiss researchers of international research infrastructures in the fields of **particle physics, astrophysics and astroparticle physics**. FLARE replaces existing schemes, notably FORCE, which allows participation in experiments conducted by **CERN** in Geneva (particle physics), and FINES, for astronomy and instrument development for the **European Southern Observatory (ESO)**. In addition, under the FLARE scheme it is now also possible to apply for financing of participation in projects in the field of astroparticle physics.

6.2 Bilateral programmes

The federal government’s bilateral programmes promote **research collaboration with priority countries** presenting a high scientific potential. The objective is to build long-term research partnerships, currently with China, India, Russia, South Africa, Brazil, Chile, Japan and Korea. From 2013-2016, in addition to evaluation activities the SNSF will also be responsible for all Swiss procedures related to joint research projects, from calls for proposals to reporting to the SERI. It works closely with the Leading Houses that are the programme representatives at Swiss institutions of higher education. The goal is to establish long-term partnerships with the funding organisations in the target countries.

6.3 Energy research

The federal government is backing its Energy Strategy 2050 by making available additional resources for research and innovation in the energy sector (special message concerning the “Action plan for coordinated energy research”). The SNSF supports the turn-around in energy policy by funding the next generation of scientists, in particular through **SNSF professorships** and two **NRPs** on energy research (see item 4.3.2). The SNSF further supports the CTI in the scientific evaluation of a funding programme designed to support **capacity building in seven centres of competence** on topics such as energy efficiency, energy systems, power supply and power storage, energy economics and energy policy.

6.4 Evaluation services

As the single independent national agency for evaluating scientific research the SNSF, in the course of **evaluation mandates**, carries out the quality control of research initiatives which it does not fund using either its own or additional resources, and which it does not necessarily administer. The precondition is that the SNSF itself should define the quality criteria and the method of evaluation, and that the evaluation results be binding. The SNSF, on a mandate from the federal government, is currently evaluating projects carried out as part of the research initiatives SystemX.ch (systems biology) and Nano-Tera.ch (engineering sciences), as well as bilateral programmes carried out with Bulgaria and Romania as part of the Swiss enlargement contribution.

7. List of funding cancellations

For the period 2013-2016 the SNSF has approximately CHF 3.7 billion at its disposal to finance all of its research-funding activities; this is around CHF 900 million less than the amount applied for in its multi-year programme. Clearly, therefore, the SNSF will be unable to finance all of its planned measures.

To what extent cuts will have to be made depends on the demand for funding, in particular for projects. During the last funding period demand rose faster than the available resources, which lead to a marked decline in the success rate. Halting this trend is among the top priorities of the SNSF. In addition, the priority areas identified for the period 2013-2016 (see chapter 2) determine which measures will be given priority.

The following **cut-backs** will be inevitable:

- The overhead rate compensating for indirect expenses at institutions of higher education will not be raised to 20% as initially intended, but remain at the current 15%; the overhead contributions will not be extended to the NCCRs. Compensation for indirect expenses will therefore remain low by international standards.
- No additional resources for financing open-access publications; researchers will therefore be able to claim publication expenses to a limited extent only, for approved projects and in purely open-access journals (see item 5.2.1).
- No additional resources for funding new research infrastructures outside the delegated additional tasks (see item 6.1). The SNSF funding policy for infrastructures will be consolidated accordingly (see item 4.4).
- The resources available will enable the SNSF to launch only one of the two planned programmes for strengthening biomedical research: “translational medicine” or “investigator-driven clinical research” (see item 4.3.3).
- No resources will be available for Albrecht von Haller contributions to established researchers in the humanities and social sciences wishing to delegate some of their teaching hours to be able to devote more time to research.
- No resources will be assigned to the social insurance package for young researchers on fellowships abroad.

Financing for the following **cannot be confirmed**:

- The introduction of return fellowships to facilitate the scientific reintegration in Switzerland of fellowship holders returning after a stay abroad.
- The partial exemption of clinical researchers (“protected time”) to provide additional support for sustainable careers in medical research.
- Flexible, individual support for equal opportunities through an equal-opportunities contribution for projects.

8. Outlook

The SNSF is investing a great deal of energy in the implementation of the Action plan 2013-2016. In parallel, it is working on its own organisational and operational development and on preparing topics related to research funding that will continue to be relevant beyond 2016.

The **National Research Council**, which is in charge of evaluating research applications, is at the limit of its capacity. Its members not only carry a heavy burden of responsibility but also have to shoulder a growing workload. In 2013, therefore, the SNSF will begin a thorough examination of the structure, organisation and duties of the Research Council. In doing so it will also take into consideration the findings and insights of the 2012 evaluation of quality and transparency in the SNSF selection procedure.

Regarding the duties of the Research Council, the question arises what role the SNSF should play in the funding of **research infrastructures** and certain **disciplines**. How does the SNSF handle long-term research projects and what kind of financial resources should it commit to projects of this type in the long term? Which disciplines have special needs or require a financial boost? Thinking ahead to its next multi-year programme, the SNSF would like to be able to have the clearest possible answers to these questions. The same also applies to the question of the SNSF's position in respect of use-inspired research designed to indirectly lead to a commercial application.

To be able to recognize **trends and needs** ahead of time, the SNSF is looking for new ways of gauging the concerns of individual researchers, disciplines and research institutions as systematically, directly and extensively as possible. In a first step, in 2013 it will launch a survey of current and potential applicants. On the basis of the results it will examine how it can improve the promotion of individual projects, as this remains its most important task. Sinergia, the funding scheme for collaborative projects, will be assessed in depth. In addition, the SNSF plans to evaluate individual funding schemes, notably the National Centres of Competence in Research and Ambizione, which helps junior researchers to move towards independence by providing them with their own project funds.

The next European Framework Programme for Research for the period 2014-2020, **Horizon 2020**, will result in a number of changes which may also have an effect on national research funding. As soon as the basic financial and content parameters are known the SNSF will analyse any new components and examine them for potential consequences for its own activities. The SNSF would like its funding to continue to contribute to increasing the international competitiveness of Swiss research.

Lastly, the SNSF considers that a particular challenge for Switzerland as a research location will be to ensure that **young scientists** have better career prospects at Swiss institutions of higher education. To achieve this, the SNSF strives to engage in close dialogue with these institutions. Changes in career promotion schemes make sense if they produce fundamental improvements for researchers and greater incentives for any necessary changes in the system. Insofar as possible, the SNSF will rapidly take further measures in favour of young scientists, beyond those already

provided for in the Action Plan 2013-2016. In any event, however, all new ideas on how to promote junior researchers will be incorporated into the next multi-year programme and constitute a priority area – consistent with the statutes of the SNSF and its confirmed legal mandate.

Acronyms and short terms

Academies	Swiss Academies of Arts and Sciences
BBMRI	Biobanking and Biomolecular Resource Research Infrastructure
ERI Dispatch	Federal Dispatch on the Promotion of Education, Science and Innovation
CRUS	Rectors' Conference of the Swiss Universities
CTU	Clinical Trial Units
SDC	Swiss Agency for Development and Cooperation
DORE	DO REsearch: initiative for the promotion of use-inspired research at universities of applied sciences and universities of teacher education
ECRIN	European Clinical Research Infrastructures Network
ESF	European Science Foundation
ESFRI	European Strategy Forum on Research Infrastructures
ESO	European Southern Observatory
ESS	European Social Survey
EU	European Union
EUROCORES	Basic research programmes financed by ESF member organisations
FINES	Fund for developing instruments for the ESO
FLARE	Funding LArge international REsearch projects
FORCE	Fund for research at CERN (infrastructure)
Horizon 2020	European Framework Programme for Research and Innovation 2014-2020
IDCR	Investigator-driven clinical research
KFH	Rector's Conference of the Swiss Universities of Applied Sciences
CTI	Commission for Technology and Innovation
Nano-Tera.ch	Swiss initiative for engineering complex systems for health, security and the environment
NRP	National Research Programme
NCCR	National Centre of Competence in Research
ProDoc	Former graduate programme of the SNSF and CRUS
r4d	Swiss Programme for Research on Global Issues for Development
R'Equip	SNSF funding programme for research equipment
SERI	State Secretariat for Education, Research and Innovation
SCOPES	Scientific Cooperation with Eastern Europe
SCTO	Swiss Clinical Trial Organisation
SHARE	Survey of Health, Ageing and Retirement in Europe
SNSF	Swiss National Science Foundation
SystemsX.ch	Swiss Initiative in Systems Biology
KTT	Knowledge and technology transfer

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