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Appreciation of the “Funding request for the establishment of a Swiss Competence Center 3Rs (3RCC)” under art. 15 Federal Act on the Promotion of Research and Innovation (RIPA)

Report and recommendations to the State Secretariat for Education, Research and Innovation SERI

Approved by the Swiss Science and Innovation Council on 3 October 2017

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Executive summary

In April 2017, the State Secretariat for Education, Research and Innovation (SERI) mandated the Swiss Science and Innovation Council (SSIC) to appreciate a proposal for federal funding under article 15 of the Federal Act on the Promotion of Research and Innovation (RIPA). The request refers to the **creation of a Swiss competence center in 3Rs** (3RCC) to promote alternatives to animal testing and contribute to the development of 3Rs (reduce–replace–refine) methods. The project comes as a follow-up to the Federal Council's report of July 2015 in answer to the Science, Education and Culture Committee of the National Council (SECC-N), which envisioned such an organization.

According to the SERI's mandate, the SSIC delivers an **overarching appreciation** and answers specific questions regarding a) the national importance and profile of the research organization; b) the suitability of the proposed measures with regard to the objectives; c) the potential of the research organization to improve the diffusion of 3Rs principles in Switzerland; d) the structure of the organization.

The SSIC's report is a **formative, ex-ante appreciation** of the request based on an analysis of the literature and of internal documents transmitted by the SERI. After the introduction on the request and on the topic of 3Rs promotion, the report presents the analysis and the results (chapter 2), and chapter 3 delivers the Council's recommendations.

The main results are:

- The threefold objective of 3RCC (research, education, communication) is well-chosen. In order to improve the potential impact of the center, the **access to research funding** should be open to any type of researcher active in the Swiss science system.
- The analysis showed an asymmetry between the ambition to foster, promote and spread 3Rs within the academic community and the modest funding. The share devoted to research activities constitutes less than half of the overall budget (2,865,000 CHF). **Enhancing the research funding share** seems necessary in order to meet the expectations.
- The envisioned 3RCC is not a strictly scientific-oriented research organization. 3Rs has a multifaceted nature where ethical values, social and political considerations, and scientific freedom intertwine. Although the 3RCC might be considered as the contribution of higher education institutions to 3Rs, taking into account the mixed underlying rationale and landscape appear all the more important. Therefore, **the strategy and measures should be based on extended analysis**.
- Beside the fact that the principal bodies are not yet constituted at this point of time, the structural organization appears to be quite complex. The scientific advisory board plays a central role for ensuring the credibility of the organization. An **independent scientific advisory board**, with a majority of international members, should be complemented by one or two scientists able to take into account the particularities of the Swiss higher education institution's (HEI) landscape.
- The separation between a strategic board (SB) and a stakeholders' advisory board (StAB) contributes to the **complexity of the governance** of the organization. Considering the particularities of 3Rs and of the Swiss ERI landscape, reaching a consensus among the stakeholders is a prerequisite for any successful implementation. The SB and the StAB could be recomposed in an extended, dialogue- and strategy-oriented SB, where decision-making powers could differ depending on the stakeholder's status.
- The 3RCC would maximize its impact and added value by conducting a systematic analysis of **possible synergies** in research, education and political advice together with existing bodies. This would help to fine-tune the 3RCC profile in complement to other actors.
- Last but not least, the **nodes coordinators** will be determinant for the overall success of the organization. The SB will have to ensure that their profiles reflect the 3RCC strategy.

1 Introduction

1.1 General background

In August 2012, the Science, Education and Culture Committee of the National Council (SECC-N) asked the Federal Council to report on the promotion of research on alternative methods to animal experimentation and their use in Swiss research¹. In its answer, the Federal Council identified a range of measures to be taken, from the education of future researchers in life sciences and medicine to the publication of negative results of animal experimentation, the broader information of the researchers' community and a more targeted funding of 3Rs research.

In particular, the Federal Council envisioned creating a Swiss Competence Center in order to align research funding, education and services with the needs of researchers, higher education institutions (HEI) and civil society². Additionally, the Federal Council expected a future center to develop a clear profile and the participating HEI to demonstrate their scientific interest towards it. This matter falls within the competences of the Federal Department of Home Affairs and of the Federal Department of Economic Affairs, Education and Research. Thus, the implementation would have to be coordinated by the Federal Food Safety and Veterinary Office (FSVO) together with the State Secretariat for Education, Research and Innovation (SERI).

In January 2016, the FSVO and the SERI mandated swissuniversities to elaborate a concept for a Swiss Competence Center in 3Rs³. The concept would take the form of a request for federal funding under art. 15 of the Federal Act on the Promotion of Research and Innovation (RIPA). The request is quoted in the ERI dispatch 2017–2020⁴, and a reserve of 3.5 million CHF is set aside for this purpose⁵. The swissuniversities proposal was delivered to the SERI at the end of March 2017⁶.

1.2 Mandate

In accordance with legal provisions⁷, the SERI asked the SSIC in April 2017 to deliver an overarching appreciation of the 3RCC proposal for mid-October 2017⁸. In addition, four specific questions were addressed to the Council:

- 1) How does the SSIC assess the national importance and the profile of the research organization?
- 2) Are the proposed measures suitable for the objectives that have been set?
- 3) To what extent will the research organization be able to contribute to the promotion of alternative methods to animal testing and especially to the development of 3Rs-methods?
- 4) How does the SSIC assess the projected structure of the organization?

1.3 Data and methods

The data used for the analysis are primarily constituted by the request on 3RCC⁹ and the minutes of the meetings held by the swissuniversities working group on 3Rs in 2016¹⁰. Additional documents

* All links checked on 4 October 2017.

¹ SECC-N, 17.08.2012, Postulat 12.3660 "Avenir de la Fondation Recherches 3Rs et méthodes de substitution à l'expérimentation animale", <https://www.parlament.ch/en/ratsbetrieb/suche-curia-vista/geschaefte?AffairId=20123660>.

² Conseil fédéral, 01.07.2015, Avenir de la Fondation Recherches 3Rs et méthodes de substitution à l'expérimentation animale. Rapport du Conseil fédéral en réponse au postulat 12.3660 de la Commission de la science, de l'éducation et de la culture CN du 17 août 2012, <https://www.parlament.ch/centers/eparl/curia/2012/20123660/Bericht%20BR%20F.pdf>.

³ Mauro Dell'Ambrogio (SERI), Hans Wyss (FSVO) to Michael Hengartner (swissuniversities), 08.01.2016.

⁴ Message relatif à l'encouragement de la formation, de la recherche et de l'innovation pendant les années 2017 à 2020 du 24 février 2016, FF 2016 2917-3178: p. 3041: cf. <https://www.admin.ch/opc/fr/federal-gazette/2016/2917.pdf>.

⁵ Answer of the Federal Council (15.02.2017) to the Interpellation 16.4122 "Où en est la recherche en matière de méthodes de substitution à l'expérimentation animale et la recherche 3Rs?", <https://www.parlament.ch/fr/ratsbetrieb/suche-curia-vista/geschaefte?AffairId=20164122>.

⁶ swissuniversities, 30.03.2017, Proposal 3RCC. Funding request for the establishment of a Swiss Competence Center 3Rs (3RCC). Research infrastructure according to art. 15 RIPA ERI-Period 2017-2020. From now on: 3RCC request.

⁷ Ordonnance du 9 décembre 2013 du DEFR (EAER) relative à l'Ordonnance sur l'encouragement de la recherche et de l'innovation (O-LERI-DEFR; RS 420.11), esp. art. 12, al. 2.

⁸ Gregor Haefliger (SERI) to Gerd Folkers (SSIC President), 13.04.2017.

⁹ 3RCC request.

¹⁰ 4 meetings held on 20 April, 23 June, 5 September and 24 November 2016.

and data have been taken into account¹¹. Considering the short span of time available for the appreciation of the request and the fact that the 3RCC does not yet exist as such, the SSIC chose not to work with an external expert. Chapter 2 presents the analysis and the results while chapter 3 delivers the recommendations. A short overview on selected international trends in 3Rs promotion is included in chapter 2. The emphasis on UK and the Netherlands reflects a choice of countries that could be appropriate for a more systematic comparison with the Swiss case.

1.4 What is “3Rs”?

Animals have been used in science at least since Ancient Greece. The arguments in favor of animal trials are compelling: they are generally appraised as being of lesser ethical value than human beings, harbor evolutionarily conserved molecular and developmental pathways and – at least some of them – they can be reared under controllable conditions. On the other side, most people would argue that not all experiments are permissible on every kind of animal, even if animals are to be judged as of lesser moral value. On the scientific level, the translation from laboratory learning outcomes to clinically relevant knowledge is not trivial. For instance, while a very large number of mice models have been created to study a degenerative disease such as Alzheimer’s, which does not occur in rodents, clinical success so far has been very low¹². In the frame of this debate, the development of the so-called 3Rs principles can be understood as a minimal consensus between advocates and opponents of animal use in research.

In 1954, the Universities Federation for Animal Welfare mandated two English scientists, William Russell and Rex Burch, to conduct a systematic study of the ethical aspects related to the use of laboratory animals in order to develop better practices. Their work resulted in an influential publication introducing the 3Rs as guiding principles for the ethical use of animals¹³. “Replacement” stands for all techniques which do not make use of animals such as in-vitro studies or (today) computer simulations. “Reduction” denotes a concern to minimize the number of animals per study, for instance by making a better use of statistical tools and published data. Today, investigations of animal tissue repositories can be considered another strategy to reduce animal trials¹⁴. “Refinement” pertains to all measures minimizing stress and pain before and during experimentation, such as breeding social animals in larger groups or ending experiments at an earlier time point.

The 3Rs principles have been adopted by public authorities and translated into international and national legislations (see 2.1 and 2.2). In Switzerland, animal experimentation is only allowed if no alternative methods are available for answering scientific questions (Animal Protection Act, RS 455), and it is forbidden to produce transgenic animals for purposes other than advancing health (Gene Technology Act, RS 814.91)¹⁵. At the same time, major regulations such as the REACH directives of the European Union are commanding an increase of animal trials – at least temporarily – in the realm of toxicology.

In the scientific community, the 3Rs have steadily gained in acceptance, leading to the establishment of specialized centers, research programs, scientific journals and conferences. However, research in 3Rs is viewed as primarily methodological in purpose and thus suffers from a prestige deficit. Furthermore, it is often difficult to discriminate between blue-sky research and projects aimed at advancing the 3Rs, as the “3Rs” label is sometimes claimed by researchers who are merely following the law or making use of already established techniques, while other researchers prefer not to claim it, even though their efforts might lead to new methods. The definition issue is reminiscent of the somewhat artificial distinction between basic and applied research.

¹¹ See References.

¹² Cummings 2014.

¹³ Russell 1959.

¹⁴ Grüntzig 2015.

¹⁵ Note that Swiss law only pertains to vertebrates, cephalopods and decapods. In other words, most invertebrates, such as insects, are not protected.

2 Analysis

2.1 3Rs and policy in Switzerland

Debate on animal research shapes science policy and research agendas¹⁶. This is particularly true in Switzerland, where concerned politicians at the cantonal and federal levels and numerous civil society organizations regularly use the democratic tools at their disposal to raise awareness, to strictly regulate or to restrict the use of animals in science.

In 1987, the creation of the 3R Research Foundation Switzerland as a public-private partnership confirmed the commitment of Swiss researchers, politicians and industry towards animal welfare; the same year saw the creation of the Swiss laboratory animal science association (SGV)¹⁷. Before that, different referendums or initiatives were launched by associations like Helvetia Nostra, a subsidiary of the Franz Weber Foundation¹⁸. Furthermore, from 1984 to 1987, the Swiss National Science Foundation (SNSF) funded the national research program "Alternative Methods to Experiments on Animals" (NRP 17) with 2 Million CHF¹⁹. This first coordinated effort among the scientific community was considered an encouraging sign, although concerns remained about the challenges of standardization and validation of the new techniques²⁰.

Since 1985, the topic of "animal experimentation" was addressed in no less than 45 procedural requests in the federal parliament, mostly at the National Council, some of them gathering up to 33 co-signatories. Beside the interpellations (20) and questions (11) to the Federal Council, politicians addressed the topic in motions (7), postulates (3) and petitions (3), and one parliamentary initiative. The Federal Assembly adopted two procedural requests (one of them led to the present request under assessment), 7 are still to be discussed²¹. In the same time span, Swiss citizens voted at least 5 times on national issues directly related to the topic (only one initiative led to the acceptance of a counter proposition)²². At the cantonal level, in November 2005, the citizens of the canton of Vaud refused the construction of an animal facility for the university by almost 60% of voters²³. This result contrasts with the last cantonal vote on a similar object: a referendum in the canton of Bern led to a vote in February 2016 on the construction of a new animal facility for the university, which was accepted by more than 70% of voters²⁴.

Beside the establishment of the 3R Research Foundation, the Swiss scientists, federal and cantonal HEI and the SNSF promoted 3Rs in different ways so far. The legal provisions require basic and continuing education in 3Rs for specialists in animal experimentation and for researchers²⁵. Various declarations and strategic policies issued by swissuniversities, by Interpharma, by the Swiss academy of sciences or by other stakeholders provide further guidance on the promotion of 3Rs in

¹⁶ See the debates on the use of primates in research in Zurich University and ETHZ (<https://www.nzz.ch/zuerich/zuercher-primatenversuche-forscher-duerfen-versuche-an-affen-durchfuehren-ld.1287893>), or the vote against a central animal facility at the university of Lausanne in 2005 (Blanchard 2006).

¹⁷ <https://sciencesnaturelles.ch/organisations/sqv>.

¹⁸ <http://www.ffw.ch/en/quienes/helvetia-nostra/3>.

¹⁹ Cf. <http://www.snf.ch/en/researchinFocus/nrp/nrp17-alternative-methods-to-experiments-on-animals/Pages/default.aspx>; result's overview in "Alternatives to Animal Experimentation", *Experientia*, vol. 44, n°10, 1988.

²⁰ For example: "How do the different cell culture methods correlate with each other? Are they reproducible in different laboratories?" Ferenc Follath, coordinator of NRP 17, considered that these questions could only be answered "by long-term comparative multicenter evaluations" (Follath 1988).

²¹ See Annex I.

²² Detail: 3 initiatives rejected: 1985: Initiative populaire fédérale "Pour la suppression de la vivisection", <https://www.admin.ch/ch/f/pore/vi/vis143.html>; 1992: Initiative populaire fédérale "Pour une réduction stricte et progressive des expériences sur les animaux (Limitons strictement l'expérimentation animale)" <https://www.admin.ch/ch/f/pore/vi/vis180.html>; 1993: Initiative populaire fédérale "Pour l'abolition des expériences sur animaux" <https://www.admin.ch/ch/f/pore/vi/vis206.html>. 1 initiative given up in favor of a counter proposition: 2006: Initiative populaire fédérale "Pour une conception moderne de la protection des animaux (Oui à la protection des animaux!)" <https://www.admin.ch/ch/f/pore/vi/vis306.html>. 1 initiative invalid: 1987: Initiative populaire fédérale "Pour l'abolition de l'expérimentation animale et de la vivisection" <https://www.admin.ch/ch/f/pore/vi/vis184.html>.

²³ See <http://www.bicweb.vd.ch/communiqu.aspx?pObjectID=241901>. For an analysis, see Blanchard 2006.

²⁴ See <http://www.lscv.ch/pages/experimentations/experimentation/cantons.html>.

²⁵ See Ordonnance du DFI sur les formations à la détention d'animaux et à la manière de les traiter (OFPA), du 5 septembre 2008 (état le 1er janvier 2017), RS 455.109.1, <https://www.admin.ch/opc/fr/classified-compilation/20080798/index.html>, in particular chapter 3, art. 22, al. 2 and 24, al. 2, let. j. See also Crettaz von Roten 2017.

animal experimentation²⁶. Additionally, universities inform regularly on this topic in their own communities²⁷.

The SNSF is taking the 3Rs principles into account. SNSF-funded researchers must respect the ethical guidelines adopted by the SAMS and the SCNAT in 2005²⁸. Between 2004 and 2007, the SNSF revised its evaluation procedures on request involving animal experimentation towards a better coordination and division of competences with the various federal and cantonal ethic committees²⁹. More recently, the SNSF published a factsheet on scientific experiments with animals, stressing that communication (translation) to the researchers remains critical for effective use of 3Rs principles in basic or applied research³⁰.

2.2 International trends in 3Rs promotion

The Swiss 3Rs case is in line with international trends with regard to 3Rs promotion, which take various forms³¹. The first funding sources for 3Rs in the early 1960s were private actors³². Governments incorporated the 3Rs in their legislation and started to fund research in the late 1970s–1980s³³.

The 3R Research Foundation is merely a fund³⁴ and not a center like the intended 3RCC. Those centers, which combine research, research funding and education programs, information platforms and communication (outreach), were developed in the 1980s, sometimes growing from an early initiative, like the Fund for the Replacement of Animals in Medical Experiments (FRAME) in the UK (1969)³⁵.

Among the most representative organizations and 3Rs centers are: the Johns Hopkins Center for Alternatives to Animal Testing (CAAT)³⁶; the Center for Documentation and Evaluation of Alternative Methods to Animal Experiments (ZBET)³⁷; the National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs)³⁸. A more recent one is the Danish 3Rs-Center, which was created in 2013 on the model of the NC3R in UK and of the Bf3R in Germany³⁹.

²⁶ CRUS (swissuniversities) Policy for Animal Research, adopted on 17 January 2013: http://swiss3rnetwork.org/wp-content/uploads/2013/12/CRUS_e.pdf; Animal Welfare Charter Poster – World Congress on Alternatives 2014: <http://www.interpharma.ch/4389-animal-welfare-charter-poster-world-congress-alternatives-2014>; Basel Declaration: <http://www.basel-declaration.org/>; Swiss Academy of Medical Sciences (SAMS), Swiss Academy of Sciences (SCNAT), Ethical Principles and Guidelines for Experiments on Animals (3rd edition 2005): http://www.akademien-schweiz.ch/en/dms/E/Publications/Guidelines-and-Recommendations/e_RL_Tierethik.pdf.

²⁷ See for example the information platform at the university of Zurich: <http://www.tierschutz.uzh.ch/en.html>.

²⁸ As well as the precedent version of 1995, see Gruber 2004.

²⁹ See: FNS, Rapport annuel 2005, p. 8; Rapport annuel 2006, p. 9; Rapport annuel 2007, p. 13. See also: "Recherche sur les primates: le débat doit avoir lieu", Bulletin ASSM, vol. 2, 2007.

³⁰ SNSF (2015), The Swiss National Science Foundation (SNSF) and scientific experiments with animals; available at http://www.snf.ch/SiteCollectionDocuments/forschungspolpos_tiverversuche_factsheet_e.pdf. See also: <http://www.snf.ch/en/theSNSF/research-policies/animal-testing/Pages/default.aspx>. Esp.: "Researchers generally develop better methods or alternative approaches with a view to achieving their research goals and rarely characterize such developments as 3Rs research. Therefore, the SNSF is not able to ascertain how many SNSF-funded projects are relevant for 3Rs."

³¹ An overview: Stephens 2013.

³² Humane research trust, UK, 1961: <https://www.humaneresearch.org.uk/>; Swedish fund for research without animal experiments, founded in 1964 by the Swedish society against painful experiments on animals; first research grants awarded in 1971, see <http://forskautandjurforsk.se/swedish-fund-for-research-without-animal-experiments/>; biennial award Felix Wankel Animal Welfare Research Award (1972, Germany, up to 30,000 euros).

³³ 1977: the Netherlands include a section on alternatives in the Animal protection law; 1981: Switzerland requires consideration of alternatives; 1985: amendments to the US Animal welfare act call for consideration of alternatives; 1986: European community directive 86/609 requires member countries to develop legislation promoting 3Rs. See Stephens 2013.

³⁴ In analogy with the priority program „Alternativen zum Tierversuch“ of the German Bundesministerium für Bildung und Forschung (BMBF), which has funded more than 500 research projects since 1980, see <https://www.bmbf.de/de/alternativen-zum-tierversuch-412.html>.

³⁵ See <http://www.frame.org.uk/frames-history/>.

³⁶ USA (1981), <http://caat.jhsph.edu/about/index.html>; a European branch is hosted by the University of Konstanz, Germany, see: <https://cms.uni-konstanz.de/leist/caat-europe/>.

³⁷ Germany (1989), part of the Federal institute for risk assessment (BfR), see: <http://www.bfr.bund.de/en/zebet-58194.html>. The German centre for the protection of laboratory animals (Bf3R) coordinates the research funding, see http://www.bfr.bund.de/en/german_centre_for_the_protection_of_laboratory_animals.html.

³⁸ UK (2004), <http://www.nc3rs.org.uk/>; for a comprehensive presentation, see Burden 2015. NC3R edited in 2010 the ARRIVE guidelines ("animal research: reporting of in vivo experiments"), which enhance through reporting the validity of in-vivo experimental results. See <https://www.nc3rs.org.uk/arrive-guidelines>.

³⁹ See <http://en.3rcenter.dk/>.

Some countries, like Sweden and the Netherlands, which are among the most committed on promoting such principles, combine 3Rs centers with special schemes from public funding agencies⁴⁰. Following the “shift” in approaches for toxicology testing in the mid-2000s⁴¹, large-scale research initiatives in toxicology have integrated 3Rs to their own research programs⁴².

2.3 Preliminary remarks

This general background, at the intersection of ethical values, scientific freedom, social and political considerations, might have informed the formulation of the 3RCC proposal. The political debate of the past is indicative of tensions, conflicts of interests and dilemmas in society as well as in science. Thus, a proposal as the one currently under discussion has to adopt a systemic view, in order to find a productive balance between legal requirements, societal expectations and scientific practices.

The Federal Council underlined in its 2015 report that any future competence center would have to be built on a clear task profile and to manifest a scientific interest from the HEI⁴³. Funding under art. 15 RIPA might be appropriate in such a case, because reaching a consensus among the stakeholders is a requirement. By arguing for the creation of “a national Center tailored to the needs of the Swiss research and political environment”⁴⁴, the applicants demonstrate their awareness of the particularities of 3Rs promotion. Two “gap analyses” are planned in the first operational year, one on research funding and the other on education, in parallel to the detailed planning for the period 2017–2020. The request is designed by its authors as a “structural framework”, whose governing bodies do not exist at the time the application is submitted⁴⁵.

Since one of the drivers to build this organization is the federal government, the 3RCC cannot be considered as a strictly scientific-oriented organization. The SSIC takes this into account in its appreciation by focusing on the general challenges and on the mandate’s questions. Thus, the Council delivers a formative and ex-ante appreciation rather than a summative assessment⁴⁶, which could be done only after the next 4-year federal funding period.

2.4 Mission and goals

The mission of the 3RCC is:

“to promote the principles of all 3Rs and facilitate their implementation in life science research. It will promote the principles of 3Rs through the **promotion of high quality research**, develop a **3Rs education strategy targeted at different educational programs**, and build up a **professional communication capacity** aimed at the various stakeholders involved or interested in animal experimentation and 3Rs⁴⁷.”

⁴⁰ Program “More Knowledge with Fewer Animals” (MKMD), 2011-2017, 5.4 Mio euros, from the Netherlands Organisation for Health Research and Development (ZonMw), see <https://www.zonmw.nl/en/research-and-results/fundamental-research/programmas/programme-detail/more-knowledge-with-fewer-animals/>. the Swedish research council has been responsible since 2009 to fund the program Project Research Grant within Alternatives to animal experiments according to the 3Rs principle (1.3 million euros), see <http://www.vr.se/inenglish/researchfunding/applyforgrants/callforproposals/opengrants/projectresearchgrantwithinalternativestoanimalexperimentsaccordingtothe3rprinciple.5.6155df4014b4dc21ce225ca4.html>.

⁴¹ See the report of the US National academies of science: “Toxicity Testing in the 21st Century” (NAS 2007).

⁴² The Netherlands Toxicogenomics Centre (NTC) was one of the research institutes founded within the Netherlands genomics initiative (2008–20012), see <http://www.toxicogenomics.nl/>; Pijnappel 2016 made an extensive analysis of NTC. The Swedish toxicology sciences research center (Swetox), created in 2015, is a national collaboration of 11 Swedish universities who decided to work with the 3Rs principles on the research funding side from the beginning, see <http://swetox.se/en/research/3m-and-3R/>. see also Strategic plan (<http://swetox.se/wp-content/uploads/2014/10/swetox-strategic-and-operational-plan-november-2015.pdf>).

⁴³ Conseil fédéral, 01.07.2015, Avenir de la Fondation Recherches 3Rs et méthodes de substitution à l'expérimentation animale. Rapport du Conseil fédéral en réponse au postulat 12.3660 de la Commission de la science, de l'éducation et de la culture CN du 17 août 2012, <https://www.parlament.ch/centers/eparl/curia/2012/20123660/Bericht%20BR%20F.pdf>.

⁴⁴ 3RCC request, p. 7.

⁴⁵ 3RCC request, p. 5.

⁴⁶ “Formative” vs “summative” are used according to Michael Scriven’s definition (1991), see for example Rossi 2004: 34–36.

⁴⁷ 3RCC request, p. 7, emphasis added.

This mission statements echoes the international trend towards mixed methods for promoting 3Rs⁴⁸. The threefold objective (research, education, communication) is clear and well stated. The general argument is convincing, although it reflects more a declaration of intent by the applicants than a concrete presentation of strategic goals and measures to implement the mission. However, compared to the funds available, there is an asymmetric relation between the overall program (see 2.4.1) and the modest funding (see 2.4.2).

2.4.1 Maximizing the impact of the research and education program

The envisioned measures for the promotion of 3Rs among the scientific community are convincing. They mainly rely on existing instruments at different levels, although those previous measures are not systematically discussed⁴⁹. Analyzing the impact of past lessons in “targeted” research funding⁵⁰, award and prizes⁵¹ or other initiatives⁵² could be of further interest.

Given the particularities of 3Rs promotion in the science system, the implementation should rely on a strategy that demonstrates to what extent the 3RCC will mediate between the scientific needs and the federal requirement to maximize its impact on Swiss science. The applicants are well aware of this, as stated with regard to the preparatory phase: “The Center will not fund independent research (as a grant-giving body does) but research (done at its hubs or other institutions) fitting into its strategy, focusing on translational research: how to bring research findings into practice?”⁵³

Thus, research funding strategies must take into account the particularities of scientific disciplines and their organization in Switzerland, and, especially, the importance of research activities by private companies large and small. This could be done via an analysis of the existing research funding strategies and/or by investigating the role of the scientific community for the success of 3RCC⁵⁴. Currently, the 3RCC request envisions to run a “gap analysis” during two specific phases: before the start of the targeted call for research and before the launch of the educational program. Both the topic complexity of the subject, especially the intertwining between ethical values and research policy, and the peculiarities of the researchers as an autonomous community call for an extended enquiry among all stakeholders involved – including stakeholders outside the HEIs – and of their specific needs, interests and resources. Implementing the 3RCC mission should rely on a clear policy analysis⁵⁵. The actual catalogue presented in the 3RCC request (pp. 18–19) is a promising beginning that could be extended. A recent study in the Netherlands shows to what extent the overemphasis of societal expectations in the funding scheme’s design could lead to exaggerated technological promises that do not meet the original objectives⁵⁶.

The education program (3RCC request pp. 14–15) is at its very beginning. The SSIC considers that existing educational programs in 3Rs among HEIs and key partners provide enough courses. For example, the mandatory laboratory animal science course introduced in 1999 for every scientist seeking to perform animal experimentation in Switzerland was externally assessed for the first time⁵⁷. The overall results showed a high satisfaction with the course, as a large majority considered that the course increased their awareness for animal welfare. An interesting point is the preference expressed by respondents “for a course (...) with content tailored more to their previous knowledge

⁴⁸ See Section 2.2.

⁴⁹ Nor does the report of the Federal Council of 2015: Conseil fédéral, 01.07.2015, Avenir de la Fondation Recherches 3Rs et méthodes de substitution à l'expérimentation animale. Rapport du Conseil fédéral en réponse au postulat 12.3660 de la Commission de la science, de l'éducation et de la culture CN du 17 août 2012, <https://www.parlament.ch/centers/eparl/curia/2012/20123660/Bericht%20BR%20F.pdf>.

⁵⁰ Mainly through the 3R Research Foundation.

⁵¹ SGV, Fondation E. Naef pour la recherche in vitro.

⁵² Like dedicated information platforms (<https://swiss3rnetwork.org/>), international journals (Altex), etc. The same remark on the Doerenkamp-Naef-Zbinden Chair for Alternative Methods created in 2009 at the University of Geneva, <http://www.doerenkamp.ch/en/default.html?id=111> and <https://www.unige.ch/medecine/phym/fr/groupe/140cosson/research/>.

⁵³ Minutes of the 1st meeting of the swissuniversities working group 3Rs of 20 April 2016, 10.15–12.15 in Berne at the General Secretariat of swissuniversities.

⁵⁴ As showed recently by Davies 2016, the scientific community involved in 3Rs promotion should not be reduced to life scientists: humanities and social scientists can contribute to defining the research agenda.

⁵⁵ See for example: Pasternack 2015.

⁵⁶ Pijnappel 2016.

⁵⁷ Crettaz von Roten 2017.

and to their future knowledge needs⁵⁸.” Any attempts to improve animal welfare in laboratory experiments must therefore meet the quality criteria of good research in order to have an impact on the scientists⁵⁹. Such analyses are rare in Switzerland⁶⁰ in comparison with other countries⁶¹.

Finding a strategy that meets the norms of scientific practice could also take advantage of systematic reviews of experimental animal studies. Those studies improve the scientific quality of animal experiments and contribute to implement 3Rs principles in research design. In the Netherlands, the central animal laboratory of the Radboud University Nijmegen Medical Centre confirmed a shift operated in 2008–2009 towards systematic reviews by renaming in 2012 its former 3Rs research center in SYstematic Review Centre for Laboratory animal Experimentation SYRCLE, thereby confirming the usefulness of such studies⁶². The Canadian council on animal care made a similar analysis⁶³.

⇒ *Recommendations 3.1, 3.3, 3.5*

2.4.2 Funding volume and funding share

The annual budget for research funding is quite low as compared to the scientific ambitions: 1,265,000 CHF for research funding (to be divided between 1/3 for targeted calls and 2/3 for open calls) represents less than half (44%) of the overall budget (2,865,000 CHF⁶⁴). The rest is devoted to the Directorate activities (about 600,000 CHF) and to the 11 nodes in the HEIs (1,000,000 CHF, in-kind). The repartition for the portion devoted to education and communication tasks is unclear. Over the period 2006–2015, the annual expenditures of the 3R Research Foundation amounted to CHF 831'528 on average (table 1). In comparison, over the same period, the NC3Rs in the UK spend annually about 5.17 million GBP⁶⁵ (table 2). The share devoted to research funding is similar in both cases: 74% on average for the 3R Research Foundation and 69% on average for the NC3Rs (tables 1 and 2)⁶⁶.

Table 1: Average annual expenditure of the 3R Research Foundation, 2006–2015 / Annual reports 2006-2015, own calculations

	2006–2015 (CHF)	%
Research grants	618'037	74
Project supervision and information	105'092	13
Administrative expenses	107'399	13
Total expenditure	831'528	100

Table 2: Average annual expenditure of the NC3Rs, UK, 2006–2014 / Annual reports 2006–2014, own calculations

	2006-2014 (million GBP)	%
Grant costs	3.89	69
Program costs	0.94	24
Board costs	0.01	0
Operating costs	0.33	7

⁵⁸ Crettaz von Roten 2017: 8.

⁵⁹ For a deeper analysis: Holmberg 2008.

⁶⁰ Except some recent studies on similar topics: Reichlin 2016; Vogt 2016.

⁶¹ See in particular: Luijk 2011, 2013; Fenwick 2011; Franco 2014.

⁶² See <https://www.radboudumc.nl/en/research/technology-centers/animal-research-facility/systematic-review-center-for-laboratory-animal-experimentation>. In May 2017, the SYRCLE was awarded one of the first Cochrane-REWARD prizes for reducing waste in research, cf. <http://www.thelancet.com/campaigns/efficiency/updates>. On the contribution of SR to 3Rs, see: Hooijmans 2013, 2014; Vries 2014.

⁶³ <http://3rs.ccac.ca/en/research/systematic-reviews.html>.

⁶⁴ 3RCC request, p. 16–17. Typing errors to correct: on p. 16: “CHF 2,8650,000.–”: to be corrected to: CHF 2,865,000.–. On p. 18: “approximately CHF 240,000.–” to be corrected to: CHF 420,000.– (= 1/3 of CHF 1,265,000.–).

⁶⁵ About 9.8 Million CHF (average of exchange rates GBP/CHF from 01.01.2006 (5.17 GBP = 11.73 CHF) to 31.12.2014 (5.17 GBP = 7.98 CHF), cf. <http://fxtop.com/fr/conversion-devises-date-passee.php?A=5.17&C1=GBP&C2=CHF&DD=31&MM=12&YYYY=2014&B=1&P=&l=1&btnOK=Chercher>.

⁶⁶ The actual share for research funding in the 3RCC is estimated as 44%, but comparisons with the other examples should be treated with caution due to the differences in the scopes and missions.

Total	5.17	100
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⇒ *Recommendation 3.2*

2.5 Organizational and institutional aspects

The main bodies, statutes, internal rules and procedures, the detailed mission and profile of the node coordinators etc., do not yet exist. The envisioned organization is complex with its 4 different boards: the Strategic Board (SB), the Executive Board (EB), the Scientific Advisory Board (ScAB), and the Stakeholders' Advisory Board (StAB). In addition, the 11 nodes coordinators have a seat in the EB.

2.5.1 Scientific Advisory Board (ScAB)

The duties of the ScAB are consequential. It should provide scientific expertise to the EB whenever solicited; evaluate on a yearly basis the progress and functioning of the 3RCC; evaluate the proposals submitted within the open and targeted call schemes⁶⁷. Those tasks influence the composition of the ScAB, whose credibility determines the reliability of its advice.

Ensuring the quality evaluation of the proposals requires a clear profile, not only in terms of experience with Swiss funding agencies like SNSF and CTI, but also in order to avoid any conflict of interest. Thus, a ScAB mainly composed of international experts is a way to reduce such probabilities.

In comparison with the 3Rs foundation organization, the ScAB of the 3RCC does not include non-scientists. The SSIC approves this option.

⇒ *Recommendation 3.4*

2.5.2 Strategic Board (SB) and Stakeholders' Advisory Board (StAB)

The 3RCC request states that “the 3RCC will have a strong impact on the national level since it will involve all relevant players in the field (...)”⁶⁸. However, a definition of the “3Rs field” is no trivial effort (see 1.4). For instance, some publicly-funded research institutions outside the HEI might be involved in 3Rs⁶⁹. Interpharma, which brings together the largest actors of the drug industry, probably cannot represent all the Swiss private actors involved in 3Rs activities, nor does the Swiss Animal Protection (SAP) represent all interested civil society institutions. Therefore, the composition of the SB does not represent all stakeholders but, instead, only the ones who are supporting the Center “financially or with other resources”⁷⁰.

In order to represent all stakeholders, the applicants plan to establish a StAB with the double function to represent “institutions close to animal experimentation and interested in dialogue” and to advise the SB⁷¹. The members of the StAB are designated by the SB and their function is to “provide advice to the SB on all matters that are of concern for the implementation of the 3Rs principles”⁷². Such a structure might help the new center to function in the beginning but could prove problematic for the success of the 3RCC in the longer term. Another option would be to integrate more critical voices directly at the level of the SB. Such a simplified organization structure would allow the SB to become the platform where potential conflicts of interest are to be discussed and resolved.

⁶⁷ 3RCC request, p. 9.

⁶⁸ 3RCC Request, p. 7.

⁶⁹ Like the SCAHT, for example.

⁷⁰ 3RCC Request, p. 8. Although the SAP will not fund the 3RCC, the working group decided in the preparatory phase to “include the [SAP] in the structure if it wishes to be part of it.” Cf. Minutes of the 3rd meeting of the swissuniversities working group 3Rs of 5 September 2016 in Berne. See also: Minutes of the 4th meeting of the swissuniversities working group 3Rs of 24 November 2016 in Berne.

⁷¹ 3RCC request, p. 9.

⁷² 3RCC request, p. 9.

Therefore, the SB composition should be based on a systematic stakeholder analysis, in complement to the two internal surveys that were conducted in the preparatory phase⁷³. Additionally, the necessity of a separate StAB could be reconsidered in favor of a larger SB with slight changes in its composition⁷⁴.

⇒ *Recommendations 3.3, 3.5*

2.5.3 *Looking for the added value: the profile of node coordinators*

One key criterion for funding under art. 15 RIPA relies on the added value provided by the organization. In April 2016, the SERI stated that: “It is crucial that the facility carries out a new task of national importance that cannot be fulfilled by an existing structure (e.g. a university or another institution funded according to the same article). There has to be a clear need for such a service and a commitment by the participating institutions.”⁷⁵ There is no doubt that the allocation purpose of the HEI’s in-kind contribution will be among the most revealing signs of success. The added value of the 3RCC will be fully demonstrated when the HEI use it to launch their own 3Rs research and education projects.

The node institutions are: EPFL, ETHZ, UNIBAS, UNIBE, UNIFR, UNIGE, UNIL, UNIZH, USI, FHNW, ZHAW⁷⁶. Their representatives in the SB should be “typically persons out of the president/rectors staff of the institution”⁷⁷. The profile of the nodes coordinators is: “an employee of a node institution with expertise in 3Rs”⁷⁸. The profile delivered in Appendix II⁷⁹ is not mandatory, but their nomination by the node institution (rectorates) must be approved by the SB. The 3RCC request makes clear that “the tasks of the node coordinators dedicated to the 3RCC will be integrated in their job description and [that] a given percentage of workload to be invested will be identified (...)”.

The profile of the node coordinator was also discussed during the preparatory phase. The working group decided in their last meeting⁸⁰ that “the role of the node coordinator goes beyond what an AWO [animal welfare officer] does but will depend from and be defined according to local circumstances (for instance, whether there is a university hospital or not, or depending on the activities in education); as a consequence, each node institution will have to organize itself and choose an appropriate profile for its coordinator.” It was also clear at that time that the main function of the node coordinator was to serve as the interface between the node and the center. In addition, the node coordinator would disseminate the information and supervise the local implementation of decisions taken by the SB.

It seems to be clear that no AWO costs may qualify as in-kind contribution⁸¹. A large part of the success of 3RCC will depend on the capacity of member institutions to nominate node coordinators able to implement a 3RCC strategy that would improve the current situation.

⇒ *Recommendation 3.7*

⁷³ The first survey was conducted within the future node institutions “to estimate the (in-kind) contribution of their institution to the future 3RCC, in order to determine the total amount of own funding provided by the HEI.” The second survey had to “make sure that all institutions involved in 3Rs research and teaching are included in the concept. To this aim, universities of applied sciences were asked whether they are involved in 3Rs teaching and research.” See: Minutes of the 4th meeting of the swissuniversities working group 3Rs of 24 November 2016, 10.15–12.15 in Berne.

⁷⁴ See Annex II.

⁷⁵ Minutes of the 1st meeting of the swissuniversities working group 3Rs of 20 April 2016, 10.15–12.15 in Berne.

⁷⁶ Additionally, “nodes might also work as an interface to further higher education institutions involved in programs in the field of 3Rs without however forming a node of their own”, as it is the case for the HES-SO.

⁷⁷ Idem.

⁷⁸ Idem.

⁷⁹ P. 22.

⁸⁰ Minutes of the 4th meeting of the swissuniversities working group 3Rs of 24 November 2016, 10.15–12.15 in Berne.

⁸¹ Minutes of the 3rd meeting of the swissuniversities working group 3Rs of 5 September 2016 in Bern (“Activities that are taken into account when it comes to determining the amount of own funding of HEI? According to the SERI, only new activities with focus on the 3Rs are taken into account (i.e. Animal Welfare Officers or teaching activities that are not linked to the 3Rs do not qualify as own funding). On the other hand, duties such as the workload of a Node coordinator may well be eligible. This point needs clarification”).

2.6 Answers to the questions of the mandate

2.6.1 How does the SSIC assess the national importance and the profile of the research organization?

Different aspects contribute to the national importance of the 3RCC: ethical considerations on animal welfare, demands from parliamentarians and federal legal foundations among other aspects. On the scientific level, the 3RCC will pursue and expand the tasks of the 3R Research Foundation. The profile of the research organization seems to be well on track, although the 3RCC request does not yet demonstrate a clear commitment of the participating institutions.

Additionally, the applicants ought to underline to what extent the planned organization will complement existing profiles and tasks of other actors like the Swiss Centre for Applied Human Toxicology (SCAHT) or the Swiss Centre of Excellence for Agricultural Research (AgroSCOPE). Such an analysis would also help to find possible collaborations in research, education and political advice with existing bodies. For example, the SCAHT was mentioned by the Federal Council as a model for the structure and funding mechanism of 3RCC⁸². The 3RCC strategy should take into consideration the important role of this organization with respect to the development of 3Rs research, especially in its contribution to international standards and directives (REACH). There might be another opportunity to collaborate on the education program with the Swiss Clinical Trial Organization (SCTO). Both 3RCC and SCTO should strive to advance the discussion over research methodology, quality issues such as reproducibility as well as the ethical problems related to risks and benefits for human and animal subjects⁸³.

⇒ *Recommendations 3.1, 3.6, 3.7*

2.6.2 Are the proposed measures suitable for the objectives that have been set?

The 3RCC request reflects a convincing consensus on the general mission and goals. At this point in time it is difficult to formulate a sound and comprehensive strategy in the absence of the main bodies (especially the SB). However, the two envisioned “gap-analyses” might not be sufficient to ensure the future quality of outcomes in the fields of education and research. Further analysis is needed, for example in order to understand the general attitudes of the Swiss scientific community towards 3Rs principles. Thus, including the “open calls” to the envisioned “gap-analysis” would be a good way to better tailor the funding scheme to the needs of the researchers in order to increase the translation of 3Rs into practice. The same remark applies for the education program.

⇒ *Recommendation 3.3*

2.6.3 To what extent will the research organization be able to contribute to the promotion of alternative methods to animal testing and esp. of the development of 3Rs-methods?

The 3RCC overall budget would represent a sizable increase in comparison with the past research funding capacity in Switzerland⁸⁴, but the volume of research funding would only represent a small increase in comparison with the 3R Research Foundation.

Looking solely at the envisioned level of spending (especially with regards to funding research projects), the proposed center should probably allow Switzerland to offer a meaningful contribution to current international efforts towards developing 3Rs, but not to become a major player on par with prominent sister organizations such as NC3R in UK or with locally distributed initiatives like in the Netherlands⁸⁵.

⁸² Conseil fédéral, 01.07.2015, Avenir de la Fondation Recherches 3Rs et méthodes de substitution à l'expérimentation animale. Rapport du Conseil fédéral en réponse au postulat 12.3660 de la Commission de la science, de l'éducation et de la culture CN du 17 août 2012, <https://www.parlament.ch/centers/eparl/curia/2012/20123660/Bericht%20BR%20F.pdf>

⁸³ Similarly, with regard to practical guidelines, shared competencies on ethical questions are being developed within the Ethics Committee for Animal Experimentation (ECAE), which is jointly operated by the Swiss Academy of Medical Sciences (SAMS) and the Swiss Academy of Sciences (SCNAT). See for instance: SAAS 2017, and https://naturalsciences.ch/topics/animal_experimentation.

⁸⁴ 1,265,000 CHF yearly for the 3RCC research vs 723,128 on average for the 3R Research Foundation (2006–2015) represents an increase of about +175%.

⁸⁵ See Section 2.2.

⇒ *Recommendation 3.2*

2.6.4 *How does the SSIC assess the projected structure of the organization?*

The overall repartition between the strategic and operational levels (SB + StAB / EB + ScAB / Directorate / Nodes) is convincing. In particular, the proposed distinction between the nodes institutions (SB, rectors and presidents) and the nodes coordinators (EB, employees of nodes institutions) may be one of the strengths of the future organization. The profile of the nodes coordinators should rely on a common, explicit and binding understanding, at the SB level, of the nature of “in-kind” contributions to the new center. However, the underlying logic of defining who is a “relevant player” should be clearer. According to those considerations, the organigram could be reduced from 6 to 4 bodies⁸⁶.

⇒ *Recommendation 3.4, 3.5*

⁸⁶ See Annex II.

3 Recommendations

3.1 Access to research funding

The right to apply for research funding should be granted to any type of researcher active in the Swiss science system, including the organizations that do not belong to the HEIs, such as other art. 15 RIPA institutions or *Ressortforschung* actors, and possibly researchers from the Swiss private sector.

3.2 Enhance the research funding share

An increase of the budget allocated to research funding will be necessary in order to contribute to the development of 3Rs-methods to a greater extent than the 3R Research Foundation had done in the past.

3.3 Strategy and measures based on extended analysis

A stakeholder constellation analysis would help validating the composition of the SB and ensuring that the research funding schemes and the education programs are aligned with the underlying rationale. Finding a consensus among the stakeholders is a prerequisite in such a project.

3.4 An independent scientific advisory board

The Scientific Advisory Board must primarily consist of international non-Swiss experts.

3.5 Reducing the governance complexity

The overall organizational structure should be simplified by reducing the number of bodies. The StAB could integrate the SB. The Directorate could be attached to the EB⁸⁷.

3.6 Looking for synergies

The future 3RCC should look for synergies with networks like the SCAHT and the SCTO in order to coordinate the actions and improve the expected impact of 3Rs promotion on the national and international levels.

3.7 Nodes coordinators

The profile of the nodes coordinators must reflect an explicit, binding definition of “in-kind” contribution. Each nomination must be approved by the Strategic Board. The nodes coordinators must have an extensive experience of research related at least to one of the 3Rs.

⁸⁷ See Annex II.

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Abbreviations

3RCC	Swiss 3Rs Competence Center
3Rs	Refine, reduce, replace
AgroSCOPE	Swiss Centre of Excellence for Agricultural Research
AWO	Animal welfare officer
Bf3R	German Centre for the Protection of Laboratory Animals
BfR	Federal institute for risk assessment
CAAT	Johns Hopkins Center for Alternatives to Animal Testing
CTI	Commission for Technology and Innovation
EAER	Federal Department of Economic Affairs, Education and Research
EB	Executive Board
ECAE	Ethics Committee for Animal Experimentation
EPFL	Federal Institute of Technology, Lausanne
ERI	Education, Research, Innovation
ETHZ	Federal Institute of Technology, Zurich
FDHA	Federal Department of Home Affairs
FHNW	University of Applied Sciences Northwestern Switzerland
FRAME	Fund for the Replacement of Animals in Medical Experiments
FSVO	Federal Food Safety and Veterinary Office
HEI	Higher education institutions
HES-SO	University of Applied Sciences and Arts Western Switzerland
NC3Rs	National Centre for the Replacement, Refinement and Reduction of Animals in Research (UK)
NTC	Netherlands Toxicogenomics Centre
RIPA	Federal Act on the Promotion of Research and Innovation
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
SAAS	Swiss Academies of Arts and Sciences
SAMS	Swiss Academy of Medical Sciences
SAP	Swiss Animal Protection
SB	Strategic Board
ScAB	Scientific Advisory Board
SCAHT	Swiss Centre for Applied Human Toxicology
SCNAT	Swiss Academy of Natural Sciences
SCTO	Swiss Clinical Trial Organisation
SECC-N	Science, Education and Culture Committee of the National Council
SGV	Swiss Laboratory Animal Science Association
SNSF	Swiss National Science Foundation
SSIC	Swiss Science and Innovation Council
StAB	Stakeholders' Advisory Board
SWETOX	Swedish Toxicology Sciences Research Center
Swiss TPH	Swiss Tropical and Public Health Institute
swissuniversiti es	Rectors' and Presidents' Conference for all Universities, Universities of Applied Sciences and Universities of Teacher Education in Switzerland
SYRCLE	SYstematic Review Centre for Laboratory Animal Experimentation
UK	United Kingdom
UNIBAS	University of Basel
UNIBE	University of Bern
UNIFR	University of Fribourg
UNIGE	University of Geneva
UNIL	University of Lausanne
UNIZH	University of Zurich
USA	United States of America
USI	Università della Svizzera italiana
ZBET	Center for Documentation and Evaluation of Alternative Methods to Animal Experiments
ZHAW	Zürcher Hochschule für angewandte Wissenschaften
ZonMw	The Netherlands Organisation for Health Research and Development

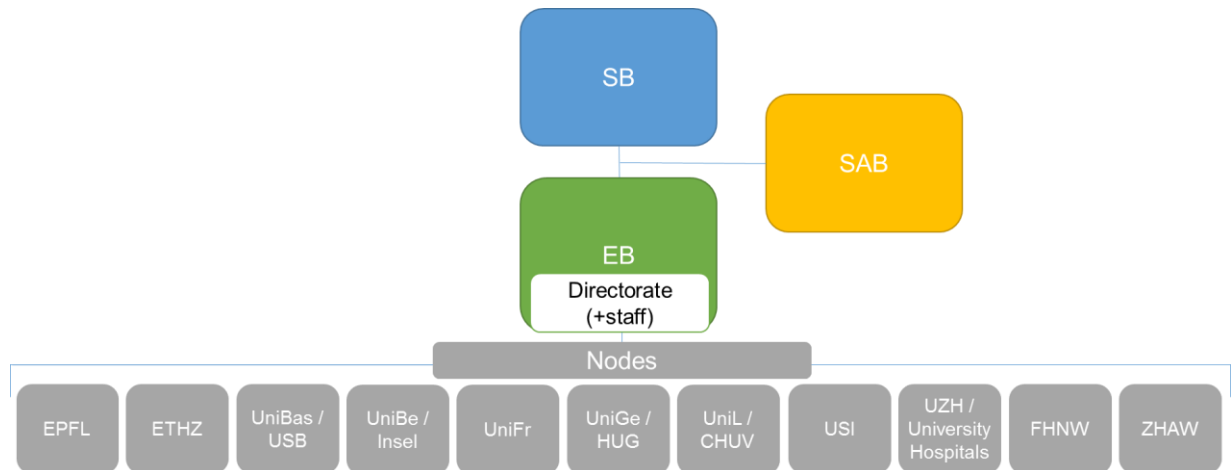
Annex I – Interventions to the federal parliament on animal experimentation, 1985–September 2017

Source: Curia-Vista Database (see hyperlinks). I: Interpellation; IP: Initiative parlementaire; M: Motion; Pe: Pétition; Po: Postulat; Q: Question.

Ref.	Type	Title and Hyperlink
17.3545	I	Expérimentation animale. Encouragement du principe des 3Rs par le FNS
17.3240	M	Faire de la Suisse un pôle de recherche à la pointe de l'innovation grâce aux méthodes qui remplacent les expériences sur les animaux
17.3142	I	Produits phytosanitaires. Pour des méthodes de test sans expérimentation animale
16.4122	I	Où en est la recherche en matière de méthodes de substitution à l'expérimentation animale et la recherche 3Rs?
16.4121	I	Expériences sur animaux. Mieux prendre en compte les méthodes de substitution durant la formation
16.4075	I	Agir contre l'augmentation considérable du nombre d'animaux utilisés dans les expériences
16.3839	I	Hausse du nombre d'expériences sur les animaux dans les hautes écoles. Qu'en est-il de la pesée des intérêts?
16.3420	I	Utilité et avenir des commissions cantonales pour les expériences sur les animaux
16.1030	Q	Financement privé de chaires dans les domaines de l'expérimentation animale et des méthodes de substitution
15.4241	M	Interdire les expériences sur les primates leur causant des contraintes
15.4240	M	Interdire les expériences sur animaux pour les produits cosmétiques, les produits de nettoyage et les produits ménagers
15.3541	I	Renforcement de la place suisse au plan économique et scientifique. Méthodes de remplacement de l'expérimentation animale
15.1079	Q	Mise à jour et publication des informations techniques concernant l'expérimentation animale
14.3683	I	Expérimentation animale. Quelle fiabilité pour 200 millions de francs par an d'argent public?
13.3873	I	18 faons sacrifiés sur l'autel de la science
13.2059	Pe	Déclaration de l'expérimentation animale sur les produits
12.3660	Po	Avenir de la Fondation Recherches 3Rs et méthodes de substitution à l'expérimentation animale
11.1085	Q	Deniers publics affectés aux expériences sur animaux. Accroître la transparence
10.3576	I	Fondation Recherches 3Rs. Quo vadis?
10.3575	I	Fonds national suisse. Recherche sur les expérimentations animales et sur les méthodes de substitution
09.4266	I	Stratégie visant à renforcer le système de santé et l'attrait de la Suisse pour l'industrie pharmaceutique
09.4145	I	Mise à jour et publication des informations et des directives concernant la protection des animaux
09.3752	I	Renforcement des mesures à l'encontre des terroristes de la protection des animaux
09.3310	I	Détenion des animaux de laboratoire et valeur informative des expériences sur les animaux
09.1049	Q	Alternatives à l'expérimentation animale
08.3537	I	Botox. Faire souffrir les animaux pour être belle?
07.3345	Po	Expériences sur des primates
06.3126	I	Expérimentation animale sur des ouistitis à l'EPFZ
05.2015	Pe	Pour le droit à l'objection de conscience envers l'expérimentation animale
98.3645	M	Commissions éthiques suisses. Organisation et coordination
97.2019	Pe	Directives pour l'expérimentation animale
97.1089	Q	Loi sur la protection des animaux. Révision partielle

Ref.	Type	Title and Hyperlink
97.1088	Q	Office vétérinaire fédéral. Réorganisation
96.403	IP	Modification de la loi sur la protection des animaux
93.1113	Q	La pilule amaigrissante et l'expérimentation animale
91.5041	Q	Expérimentations animales. Campagne de presse par voie d'annonces
91.3294	I	Expérimentations sur les singes. Inutilité notoire
91.3057	Po	Expérimentation animale. Cosmétiques
89.1119	Q	Volailles de batterie. Régime de l'autorisation
89.0596	M	Vivisection
87.669	Q	Tests de toxicité sur l'animal
87.0669	Q	Tests de toxicité sur l'animal
87.0591	M	Expérimentation sur animaux. Méthodes de substitution et bases légales
86.738	Q	Tests de toxicité sur l'animal et méthodes douces
86.644	Q	Protection des animaux. Application de l'ordonnance
86.0621	Q	Recherche sur le cancer. Abandon des expérimentations animales
86.0135	M	Protection des animaux. Révision de la loi et de l'ordonnance
85.729	Q	Tests de toxicité sur l'animal. Méthodes alternatives
85.655	Q	Suppression de la vivisection. Initiative populaire
85.0950	I	Initiatives populaires. Délais d'attente

Annex II – Simplified organigram



Comments:

- The SB integrates the StAB in order to foster both dialogue and representation of diversity of 3Rs players in Switzerland. Numbers of votes per body may reflect the respective weight of the institution in the 3RCC (i.e. funding).
- The Directorate is directly attached to the EB. The head of the Directorate supports the EB meetings with consultative voice.