



Animal experiments

An evaluation of the approval process, the costs, and financing

Key facts

In Switzerland, more than 700,000 animals are used in experiments each year. The Animal Protection Act sets limits on animal experiments: Burdensome animal experiments must be limited to what is indispensable; as part of the official approval procedure, authorities ascertain whether the requirements set out by law are met. Animal experiments are (co-)financed by federal funds via various channels, in particular by research and infrastructure contributions to universities, funds provided by the Swiss National Science Foundation (SNSF), and the EU research programmes.

The costs for animal experiments are increasing, especially due to the increased use of genetically modified mice. Working with transgenic animals opens up new dimensions for research. But this has made the production of transgenic mice lines, reproduction, and keeping of animals more demanding, requiring a high degree of hygiene. Transgenic animals and the animals needed to generate them must generally be kept in animal housing systems suited to that purpose. For the years 2009 to 2013, investments in new animal housing facilities in the amount of approximately CHF 70 to 80 million are planned in total. It should be noted that the construction of new animal housing at the University of Lausanne was rejected by voters in 2005.

This evaluation area was also chosen because it can serve as an example for other infrastructure financing for research; transparency of financing is a precondition for considerations of efficiency.

According to the animal experimentation statistics of the Federal Veterinary Office, four out of five animals used for experiments are laboratory rodents. In 2007, approximately 210,000 laboratory rodents – mainly mice (83%) and rats (16%) – were used by the Confederation and the cantons for animal experiments at universities, hospitals, research institutes, and laboratories. The number has almost doubled in the last ten years, representing approximately 35% of all rodents used in animal experiments in Switzerland. The focus of the analysis will therefore be on animal experiments with laboratory rodents financed by the Confederation and certain cantons.

1. Majority of researchers are satisfied with approval process

Although some complain that the administrative effort is substantial and the procedure takes too long, the majority of researchers are satisfied with the approval process. The procedures are becoming increasingly more elaborate, and bureaucratization is on the rise. The federalist system causes the most problems. In principle, the Animal Protection Ordinance governs every last detail. The practice from canton to canton differs, however. Each cantonal Animal Experimentation Commission exerts more or less influence. The researcher assessments date back to the situation before introduction of the new animal protection legislation. No statements on the current situation can therefore be made.



2. The Confederation spends about CHF 46 million each year on animal experiments

The Federal Institutes of Technology (ETH Zurich and EPF Lausanne) and the cantonal universities now have the capacity for keeping about 330,000 mice. Since rats take up more space than mice, the number of animals that can effectively be kept is lower. The facilities have very different hygiene conditions. It was not possible to calculate precisely "top-down" how much the Confederation (co-)finances, since no data are currently available on the effective costs of the individual facilities for keeping animals. The costs for animal housing must therefore be estimated "bottom-up" on the basis of the capacities available today. At the time of the survey – the beginning of 2008 – ETH Zurich and EPF Lausanne in total had room for 120,000 mice, and the cantonal universities had room for 210,000 mice³. According to information provided by the University of Zurich and taking account of the cost calculation models from the United States as well as comparison figures from the private sector, the full costs of a modern animal housing facility with a capacity of 40,000 mice is currently between CHF 8 and 12 million a year. Some of the private sector – depending on hygiene conditions – uses even higher cost estimates. In its calculation of animal experimentation costs, the SFAO therefore assumed average full costs of CHF 10 million for keeping 40,000 mice. The costs for keeping 330,000 mice at cantonal universities and the Federal Institutes of Technology therefore amount to approximately CHF 82 million. This amount is financed as follows:

	Federal and cantonal universities CHF
Confederation (SER, ETHZ/EPFL)	33 million
Confederation (SNSF, EU research programmes)	13 million
Cantons	25 million
Third-party funds (incl. funds from foundations, industry)	11 million
Total	82 million

The breakdown of the costs of 39 research projects (survey of 128 researchers working with animal experiments) resulted in a cost share for animal experimentation of over 20% of the total project costs. What is striking is the relatively high share of third-party resources (especially private foundations) in the financing of costs for animal research. Even just the costs for keeping laboratory rodents represent an estimated 5% of the total expenditures of universities in natural sciences, medicine, and pharmacy.

3. Risk of wrong decisions due to lack of cost transparency ...

The Confederation fully finances the investments in animal housing facilities at the Federal Institutes of Technology as well as the costs for operating and maintaining these facilities. Via its basic

³ EPFL has meanwhile sold its animal housing facilities at ISREC – capacity for 40,000 mice – to the University of Lausanne.



contributions to the cantonal universities, the Confederation also contributes to the operating and maintenance costs of keeping animals at the cantonal universities. Moreover, the Confederation pays 30% of the investments in animal housing at the cantonal universities if the construction projects amount to total expenditures exceeding CHF 3 million. The State Secretariat for Education and Research (SER) is responsible for the allocation of investment contributions to the cantonal universities. According to the University Promotion Act, projects must be economically efficient and also meet the requirements of division of labour and cooperation among the institutions of higher education. Moreover, the Subsidy Act requires that federal subsidies meet the criteria of cost-saving and economic use of resources. Construction projects with a total cost of more than CHF 10 million are submitted by the SER to the Bureau for University Buildings. The task of the Bureau is to review the economic efficiency of the projects with regard to aspects of construction. To generally assess the economic efficiency with respect to strategic decisions concerning the construction of new animal housing, information on the capacity, hygiene conditions, and cost structure of the already existing facilities and on the synergy potential that might arise from consolidating animal housing facilities is necessary. Such data are currently not available, and a risk therefore exists that wrong decisions might be made. Vaguely delineated competences with respect to strategic and operational responsibilities among the SER, the ETH Board, the Rectors' Conference of Swiss Universities, and the Swiss University Conference as well as the autonomy of the universities entail that none of these actors consider themselves competent to make this kind of decision.

... but better bases of decision-making thanks to new animal protection legislation

The new Animal Protection Ordinance (April 2008) provides that henceforth, an institution will be granted approval to produce, breed, and keep genetically modified animals, subject to the condition that the institution systematically phenotypes new lines and notifies the cantonal authorities of any problematic lines and that it keeps an inventory of all animals, including a report for the annual statistics of the Federal Veterinary Office (FVO). The animal housing facilities will now also have to supply the cantonal veterinary offices with information on the size (maximum capacity), the degree of utilisation of the animal housing facilities, and the personnel (number of full-time equivalent animal keepers). The FVO is undertaking to introduce a new central database with access via Internet to administer the animal experimentation system at all three levels (applicant/canton/FVO). Since the costs for animal experiments are rising and it is becoming increasingly difficult for researchers to fund the additional expenditures, there is a risk that researchers conduct animal experiments under inadequate hygiene conditions and/or without appropriate medical care for the animals. By collecting data on capacities, hygiene conditions, utilisation, and personnel available of the individual facilities, the FVO will be able to exercise its oversight function in animal protection in the field of animal experimentation even better. In order to increase its assessments of the economic efficiency of strategic decisions on the construction of new animal housing facilities, the data collected by the FVO should be made available as a basis for decision-making to the SER and the ETH Board when planning new animal housing or renewing existing facilities.



4. The project contributions do not cover the effective costs of the animal experiments

In the case of research projects working with animal experiments, the Swiss National Science Fund does not reimburse the effective costs of the experiments, but rather makes a bulk payment. This bulk payment is generally much lower than the effective expenditures for the animal experiments. The reasons are the following: As a principal, the SNSF does not fund research projects, it attributes to research projects. The SNSF views its role as promoting research projects with start-up financing and supporting researchers indirectly in obtaining additional research funding by providing the "SNSF" seal of approval. The SNSF plays the role of a "door opener". When granting contributions, the SNSF assumes that the applicant has got the infrastructure necessary for conducting the experiments and therefore the costs of the infrastructure do not need to be specially paid for. The EU research programmes, however, pursue a completely different strategy. One of their requirements for research programmes is that researchers are given equal chances. As part of its research programmes, the EU therefore reimburses effectively incurred costs. This also applies to costs for animal experiments and the costs for keeping laboratory animals. The condition, however, is that the costs can be accounted for. Provided that an institution practices time controlling and maintains an internal cost-accounting module, this information can be supplied without major effort. Most Swiss cantonal universities and the Federal Institutes of Technology, however, do not yet have such internal cost-accounting modules and can therefore not request the EU research programmes for reimbursement of the effective costs of the research projects and therefore also not the effective costs for the animal experiments and keeping of the laboratory animals.

The newly introduced compensation of overhead using SNSF resources is undifferentiated

The Federal Council's dispatch on the Promotion of Education, Research and Innovation for the period 2008–2011 provides for introduction of a compensation of overheads using SNSF resources. Specifically, this entails a total of CHF 211 million over 4 years that will now be compensated to universities according to a simplified procedure (bulk payment according to fixed percentage rate) for the overhead costs of project approved by the SNSF. The process will not differentiate between entitled institutions or entitled instruments. It will likewise not differentiate whether an institution had to bear high investment costs. In the case of EU research programmes, in contrast, overhead is compensated via the respective projects. Applicants to the EU can also choose whether they want bulk overhead compensation or full-cost overhead compensation. The EU Commission only accepts full-cost overheads, however, if detailed information on these costs and their allocation to individual projects is available.

Directly paying the SNSF overhead contributions via the research projects would entail various advantages: Cantonal universities and the Federal Institutes of Technology could be motivated on cost/benefit grounds to introduce internal cost-accounting modules, so that they could settle effective costs including overhead via the respective projects, both for EU research programmes and for SNSF research projects. With a nationwide introduction of an internal cost-accounting module at all universities, a significant step could be taken in the direction of cost transparency. The concern about a non-level playing field for researchers would then also be addressed.



5. Potential for synergy by centralising breeding of laboratory animals

Animal housing facilities (co-)financed by the Confederation are currently operated in about 52 locations throughout Switzerland, with most in Zurich, Lausanne, Geneva, Berne, and Basel. At two out of three locations, animals are not only held for experiments but also for breeding purposes. In contrast to the experiments, for which researchers need to have the animals close, breeding of laboratory animals does not necessarily require that the distance between researchers and animals be as short as possible. Centralising breeding, including the development and production of transgenic mouse lines, at just a few locations would have numerous positive consequences: For one thing, centralisation of animal housing facilities in fewer locations would allow synergies to be utilised. In a 1999 study, the University of Michigan showed that smaller facilities have disproportionately high personnel costs compared with large animal housing facilities, confirming that the theory of economies of scale also applies to animal housing. Besides, according to this study, central facilities also have advantages with respect to adequate hygiene conditions and highly qualified personnel.

SFAO recommendations

1. The SFAO recommends that the State Secretariat for Education and Research, together with the ETH Board and after consulting the universities, introduce strategic planning for the operation of animal housing facilities and obtain the information necessary to assess economic efficiency when deciding on the construction of new animal facilities or on investments in existing facilities. In principle, this recommendation generally applies to investments in cost-intensive research areas.
2. The SFAO recommends that the Federal Veterinary Office, as part of its control of animal inventory, obtain data for each animal housing facility on the capacities, hygiene conditions, degree of utilisation, personnel available, and cost structure of these facilities and extend the IT database on animal experiments accordingly.
3. The SFAO recommends that the Rectors' Conference of the Swiss Universities (CRUS) work toward the nationwide introduction of an internal cost-accounting module at the universities that is as uniform as possible – similar to the EU Commission requirements – in order to receive reimbursement of effective costs including overhead costs for those research projects (co-) financed by the EU.
4. The SFAO recommends that the Swiss National Science Foundation henceforth compensate effective costs in its contributions to research projects, but without the infrastructure costs already financed by the Confederation, and reimburse overhead costs analogously to EU research programmes via the respective projects.

The SER, the ETH Board, the SNSF, the CRUS, and the FVO have submitted their statements in reply to the report.

The first recommendation is welcomed by the CRUS. SER points out that with the enactment of the new Federal Law on Financial Aid to Universities and Cooperation in Matters Relating to Universities in Switzerland (HFKG), the Confederation would be heading in this direction anyhow.



Implementing a Swiss-wide university-oriented political planning and distribution of tasks in the more cost-intensive areas will be one of the objectives to be pursued. The ETH Board on the other hand rejects this recommendation for lack of a legal basis. It would prefer defining the strategy for the ETH Domain itself. From the point of view of the SFAO, the legal basis does exist in Art. 3 of the ETH Law, according to which the ETH participates in the Swiss-wide strive for coordination and planning under the terms of the legislation on the aid to universities and research. Furthermore, the Subsidies Act rules that subsidies from the Confederation must meet the criteria of an economic and efficient allocation of resources.

The FVO agrees with the objective of the second recommendation but points out that an amendment would be needed for the additional information to be collected and circulated for reasons of data protection. But according to its preliminary inquiries, the SFAO does not believe that an amendment is required. The ETH Board rejects expanding the database and the user group to other federal offices as recommended by the SFAO, reasoning that purely quantitative considerations based on the statistics of capacity utilisation in animal housing were not helpful in decision-making. The SFAO agrees in that decision-making should not be based solely on this criterion. It does believe, however, that such information does serve as an important basis in strategic decision-making with regard to construction and operation of new animal housings. They provide a Swiss-wide perspective and outline the situation for the universities as well as the ETH Domain and other public institutions. They could be particularly useful to locations already holding numerous animal housings.

As to the third recommendation, feedback is altogether positive.

The fourth recommendation on the contrary is rejected by the SER, the ETH Board, the SNSF, and the CRUS. This negative attitude is based mainly on the notion that the suggestion was off-system and the implementation would entail high extra costs for administration. Besides, the SNSF is not the right addressee for this recommendation. The principle of overhead had been stipulated by federal decree from parliament until 2011 and cannot be altered by the SNSF. The Federal Department of Home Affairs (FDHA), through the SER, is in charge of preparing the legislation. With regard to the final introduction of overhead compensation, the SNSF is willing to consider and, where indicated, make suggestions for improvement three years from now.

Thus, for the time being, the SFAO abandons this recommendation but reserves the right to get back to it once the cost-accounting modules are implemented at the universities and experiences with the development of the EU contribution allocation practice are available.

The five statements can be found in annexes 6 to 10.

Original text in German