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Evaluation of the Impact of Swiss Bilateral Research Programs

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List of Abbreviations

ALH	Associated Leading House
ANR	Association National de Recherche (French national research agency)
BILAT	The bilateral coordination of S&T policies with countries that signed (or are in the process of signing) an S&T agreement with the EU (so-called BILAT projects)
BRICS	The so-called BRICS countries: Brazil, Russia, India, China and South Africa
CRUS	Conference of Rectors of Swiss Universities
CTI	The Commission for Technology and Innovation
EG	Exchange Grants
ENPI	European Neighboring and Partnership Instrument
ERI	Education, Research and Innovation
EU	European Union
EULARINET	European Union - Latin American Research and Innovation Networks
ERA	European Research Area
FE	Faculty Exchange
FP	Framework Program
INCO-NET	The bi-regional coordination of S&T cooperation, including priority setting and the support of the S&T policy dialogue
IP	Institutional Partnership
JOREP	Joint Programming in the European Research Area
JRP	Joint Research Project
JUAF	Joint Utilization of Advanced Facilities
LH	Leading House
NA	Not Applicable
OPET	Federal Office for Professional Education and Technology
PPP	Public Private Partnership
SER	State Secretariat for Education and Research
SE	Student Exchange
SNSF	Swiss National Science Foundation
S&T	Science and Technology
TPH	Swiss Tropical and Public Health Institute
UAS	University of Applied Sciences

Executive Summary

The following report presents the main findings from the evaluation of the impact of Swiss bilateral programs that promote research cooperation with priority countries. These programs were launched in 2008 to promote and reinforce research cooperation with eight countries – Brazil, Chile, China, India, Japan, Korea, Russia, and South Africa - which were defined as priority countries in the Swiss Education, Research and Innovation (ERI) Dispatch 2008-2011.

The State Secretariat for Education and Research (SER) mandated the evaluation of the Unit based on the performance and management of higher education institutions within the University of Lugano. The report was realized between July and December 2011 by Dr. Benedetto Lepori and Dr. Anke Dunkel in cooperation with international experts on program evaluation. The evaluation mainly concerned the Swiss side of these programs and pursued three main goals: to look into the roles and functions bilateral programs play within the Swiss and European research policy landscape, to provide preliminary indications of impacts these programs can have on research cooperation with partner countries, and to assess the operations and management.

The main results can be summarized as follows:

- a) Overall, the collected information shows that bilateral programs as a whole were perceived as a *successful funding instrument*. Both the researchers and the program managers agreed that the programs strengthened the scientific relationships with the partner countries and, to some extent, attracted talented researchers to Switzerland. The first reported results were promising for a successful production of valuable scientific outcome. Taking this into consideration for the next funding period (2013-2016), *there are no reasons to fundamentally modify the overall setting of these programs, the choice of countries, and the organizational structure*.
- b) The chosen management model, based on university Leading Houses (LH), allowed bilateral programs to respond flexibly and pragmatically to the specific conditions of each partner country. *Therefore, for the next funding period we consider that there is no reasonable alternative to the LH model*. However, there are strong reasons to focus the activity of LH on the policy and cooperation level and to *transfer the evaluation and management tasks to SNSF as much as possible*. This should include the submission of applications through *mySNF* for joint research projects in all programs, adoption of the same guidelines and forms, evaluation and ranking of proposals, as well as contracts, financial management, and reporting. In a long-term perspective, a model should be developed, based on the partnership between the SNSF and the SER paired with the universities. The latter would assume the policy and strategic functions, while all tasks related to research funding would be transferred to the SNSF. As the development of such a model could be highly complex, negotiations in this direction should start early in the next funding period of 2013-2016.
- c) For the next funding period, our analysis points to *a number of possible improvements in the program management*, namely to increase efficiency, reduce administrative burden, and achieve a more coherent setting across different programs. This would include that all programs have the same funding instruments (JRP for large programs and EG), participation and funding rules are standardized as much as possible – to the extent allowed by specific needs of individual countries - and there would be a development of a common information policy. Additionally, both the evaluation process and the applicant's decision information should be brought in line with current standards in research funding programs. To achieve this, it is important that the SER develops *general rules and framework guidelines for the operation of all*

bilateral programs to integrate into individual contracts, building on the experiences of the LH in the current funding period.

- d) On a long-term perspective (from 2017 onwards), the *selection of partner countries should be carefully discussed* as there is an obvious trade-off in the effectiveness of these programs between enlarging participation and concentrating the financial means in a few priority countries. In this respect, China and India have the highest level of priority, followed by Brazil, where Switzerland is becoming a priority scientific partner. Cooperation with Russia should be carefully reassessed as this country is increasingly more integrated with the European Research Area and there are a number of available funding schemes at the European level. South Africa and Chile are considered by researchers as the least important countries among those currently in the bilateral programs. The continuation of the program with Chile cannot be justified, noting that the cooperation did not work well in the current phase. Finally, there is high interest among researchers for cooperation with Japan and (to a lesser extent) Korea, but as these countries are highly developed, a Lead Agency Agreement option with the SNSF could be envisaged.
- e) It was found that the bilateral programs did not achieve their goal of encouraging cooperation with the private sector, as stated in the ERI Dispatch 2008-2011, and attempts towards this goal were also not very successful. At the same time, the evaluation showed that the bilateral programs' current setting is not well adapted to encourage cooperation as they are strongly oriented towards science. Trying to push the current programs into this direction run the risk of dispersing efforts and making the overall program profile less coherent. Rather, CTI should be considered to have the specific task of extending its international cooperation instruments towards emerging countries and, given the huge economic potential of some of these countries, this task should have a high level of priority in the upcoming years.

1 Introduction

The following report presents the main findings from the evaluation of the Swiss bilateral programs, which promote research cooperation with priority countries (in the following *Swiss bilateral programs*).

The State Secretariat for Education and Research (SER) mandated the evaluation of the Unit based on the performance and management of higher education institutions within the University of Lugano. Dr. Benedetto Lepori and Dr. Anke Dunkel realized the report between July and December 2011 in cooperation with international experts on program evaluation. Information on European and bilateral initiatives was also derived from a large-scale project on Joint European Programs (JOEP), supported by the European Commission. This report also benefitted from international experts' advice on program evaluation, namely Philippe Larédo (University of Paris Est), Emanuela Reale (CNR-CERIS, Rome), and Maria Nedeva (University of Manchester).

The responsibility for the content of the report is held by its authors and does not engage the State Secretariat for Education and Research (SER).

The first chapter will explain the objectives and content of the evaluation mandate, the information sources, and the methodology used. In chapter 2, the main characteristics of the bilateral programs will be presented, while chapter 3 situates these programs in the context of the Swiss and European funding policy. Chapters 4 and 5 will present the main results of the evaluation, focusing on the program's operations and the results and impacts of these programs on bilateral scientific cooperation. Chapter 6 shows the view of external experts, and lastly in chapter 7, the main results will be summarized and provide recommendations for the future.

1.1 Objectives

According to the ERI Dispatch 2008-2011, an evaluation should be undertaken in order to assess the impact of bilateral research programs in the context of the Swiss international ERI strategy (p. 1346, German text). In particular, the evaluation should analyze the role of bilateral cooperation programs within the framework of the Swiss international ERI strategy - as adopted by the Federal Council in June 2010. It should also analyze the impact bilateral cooperation programs have on the relationships with the partner countries and their positioning strategy compared to the strategies of other significant international competitors.

More specifically, the evaluation covers the following topics:

- 1) To look into the **role and functions of these programs in the Swiss and European research policy landscape**, as well as their relationships and complementarity to other instruments.
- 2) To provide preliminary **indications of impacts of these programs at the Swiss level**, the structuring effects on cooperation strategies of Swiss Higher Education Institutions (HEI), and research groups towards these countries (e.g. creation of new partnerships, agreements in other areas, like e.g. education, etc.).
- 3) To briefly assess the **programs' operations** concerning the portfolio of instruments, the organizational model based on leading houses, the working evaluation and selection process, and the operational management.

The evaluation focused on how bilateral programs were organized and managed from the Swiss side and on Swiss researchers opinions of bilateral cooperation. It did not aim to provide insights on the situation and operations of the programs in the partner countries.

1.2 Evaluation Design and Data Sources

This report is based on the following sources and data collection methods.

- a) *Collection of official documents and statistical data concerning the bilateral programs.* This includes the annual and mid-term reports of each program, call documents, as well as data on the calls for proposals and funded projects. Many of these documents were available on the program websites; the missing information was collected directly from the leading houses managing the programs.
- b) *Documentary information* on Swiss and international funding programs was collected from the funding agency websites, as well as from the European Commission’s website (concerning the European initiatives). This information was generated from information collected in the European Contract on Joint and Open programs (JOREP). The JOREP is a comprehensive database of joint programs in 11 European countries (including Switzerland) that has been previously collected and analyzed. This information was integrated with direct information on specific programs provided by the SER.
- c) *On-line survey of Swiss researchers* who were funded by the bilateral programs. The survey was directed to all the main applicants of JRP in the seven programs adopting this instrument, resulting in a total size of 125 individuals (the sample for China includes 15 IP projects as well). Overall, 92 completed questionnaires were received with an overall response rate of 74%, a very good coverage of all programs was received as shown by **Figure 1**. When interpreting the results, it needs to be considered that the number of answers varies depending on the size of the programs.

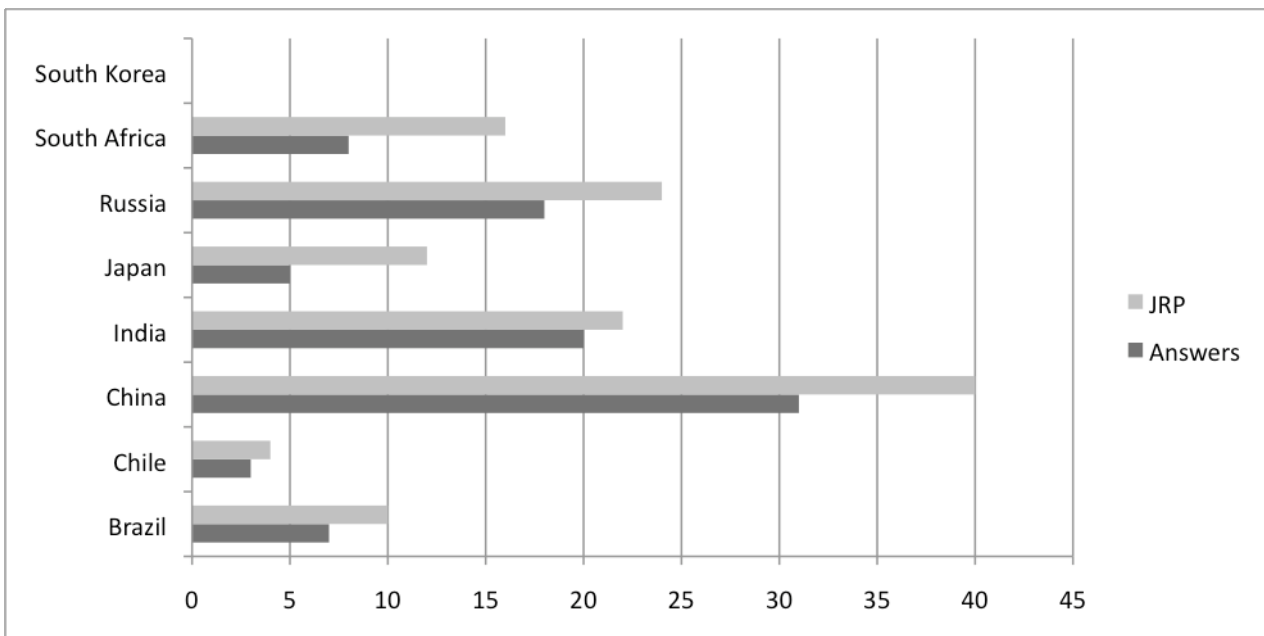


Figure 1. Awarded JRP per country and answers to the survey, absolute numbers (N (JRP) = 92).

Besides general and control information, the survey covered the following main topics:

- The overall perception of the role of these programs and their position in the Swiss funding landscape.
- Reasons for participation and strategic importance of these programs.

- Program selection process and management.
- Cooperation experience and project results.
- Views concerning the future of bilateral programs (instruments, countries, fields).

d) *Survey of exchange grants participants.* A second, shorter survey was delivered to all researchers funded by an exchange grant program, for a total size of 334 individuals. In total, 176 researchers who received an exchange grant answered the survey, totaling a response rate of 53%. 75 respondents were Swiss researchers going abroad and 101 respondents were foreign researchers coming to Switzerland.

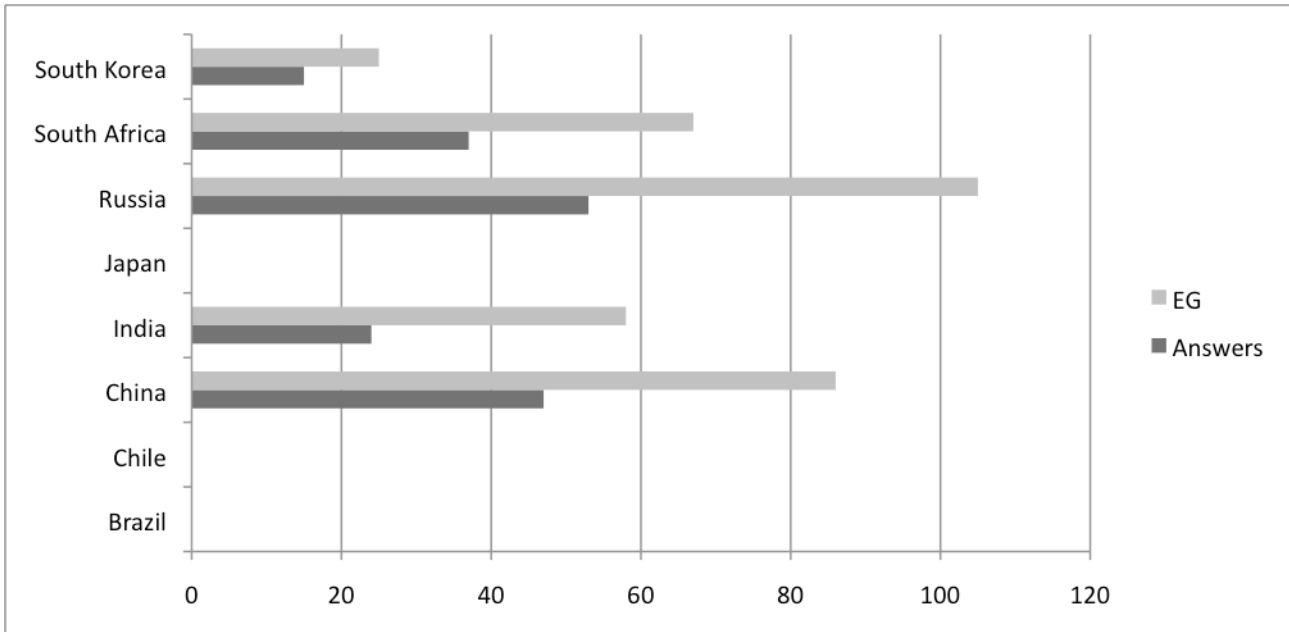


Figure 2. Exchange grants and responses to the survey, absolute numbers (N (EG) = 176).

The exchange grant survey focused on the motives in applying for the grant, the selection procedures, the grant management, the outcome of the grant, and the intentions for future cooperation.

e) *Face-to-face interviews* were conducted with participants involved in the program’s design and management. Between October and November 2011, a total of 12 interviews were conducted with people involved at varying policy and management levels in the program. This included rectors and vice-rectors of Swiss universities, heads of leading houses, representatives of SNSF and CTI, as well as a few contact partners abroad. The full list of interviewed partners can be found in annex 3. The interviews were semi-structured and covered the following topics: the position of bilateral programs in Swiss and European research policies, the relevance of these programs for Swiss universities, the relevance of these programs for partner countries, the project selection and management, the results and impact of these programs, and future perspectives. According to the respective position of each interview partner, the questions were slightly adapted.

Following each interview, a summary report was prepared and was sent to the interviewed person for corrections and further feedback.

2 Bilateral Programs: An Introduction

After the pilot initiatives with China (2004-2007) and India (2005-2007), the bilateral programs with emerging countries were then included in the ERI Dispatch 2008-2011. The selection of countries mirrored the identification process of the priority cooperation countries in the ERI Dispatch, which were focused outside the countries of the European Research Area. The main focus was on the United States and Canada, but also on the so-called BRICS countries (Brazil, Russia, India, China and South Africa), Japan, Korea, and Chile. While the USA and Canada cooperation could be developed using the existing funding schemes – as these countries are characterized by rather similar organizations of research funding as in Switzerland- it was deemed important to have a specific instrument funding cooperation with BRICS, as these are not well covered by existing schemes.

The ERI dispatch and the international research strategy of Switzerland, adopted in 2010, defined the following goals for these programs: to strengthen scientific relationships with partner countries and the Swiss science system's international network, to promote international recognition of Swiss education, and to support the export of Swiss educational services. The last goal was to attract talented researchers to Switzerland (Conseil fédéral 2010).

The ERI Dispatch 2008-2011 set the following principles for the implementation of bilateral programs, which are also relevant for this evaluation:

- The definition of national strategies is oriented towards countries with a required scientific and technological potential
- The engagement and active participation of Swiss higher education institutions, as well as SNSF and CTI
- The signature of a bilateral agreement and investments of matching resources by the partner countries
- The identification of a leading house for managing each program
- The involvement of private companies

Five major programs were launched between 2008-2011 – China, India, Russia, South Africa, and Brazil (but with a lower level of funding). Three smaller programs in Chile, Japan, and Korea, which started later in the funding period, were also launched. The cooperation program with South Africa integrated the support with existing Swiss research institutes in Tanzania (Ifakara Health Institute) and in Ivory Coast (Abidjan). A total amount of 3,6 million CHF for the period 2008-2011 was invested. Since these institutes were directly supported, this part of the bilateral cooperation program will not be further investigated in this report.

The following Table 1 presents an overview of the eight bilateral programs, their financial volume, instruments, and priority domains. The total foreseen budget in the ERI Dispatch 2008-2011 was 43 million CHF, to which 11.3 million CHF had been added in 2012. Decisions about the future of these programs will be made by the Swiss parliament in 2012 when discussing the framework of the ERI Dispatch 2013-2016.

Country	Leading House / Coordination Office	Budget 2008-2011*	Funding instruments	Priority domains
China	ETH Zurich UZH as ALH	8.8 mil CHF	Joint research projects Institutional partnerships Exchange grants	Life sciences, biotechnology, environment, urban development and sustainability, materials science, and medicinal sciences.
India	EPFL UNIL as ALH	8.8 mil CHF	Joint research projects Institutional partnerships Joint utilization of advanced Facilities Exchange grants	Information and communication technology, material sciences and nanotechnology, human health sciences, sustainable urban development, renewable energy, social and human sciences
Russia	University of Geneva EPFL as ALH	7.3 mil CHF	Joint research projects Exchange grants Utilization of specific infrastructure. Participation to joint calls in ERA-NET RUS	Engineering and IT, nanosystems and materials, life sciences, natural resources and energy, transportation, economic sciences, human and social sciences
South Africa	University of Basel Swiss TPH as ALH	6.85 mil CHF	Joint research projects Exchange grants	Health and biomedicine, bio- and nanotechnology, social sciences and humanities
Japan	ETH Zurich	1.5 mil CHF	Joint research projects	Medical research
Brazil	EPFL	4.2 mil CHF	Joint research projects	Neurosciences, health, energy, environment
Korea	ETH Zurich	1.2 mil CHF	Exchange grants	Different technological fields
Chile	EPFL	0.35 mil CHF	Joint research projects	Energy, climate change

Table 1. Overview of bilateral programs (*This amount includes only funding for Swiss partners; a corresponding amount is provided by the partner countries to support their own research groups).

2.1 Organization and Management Structure

All programs are based on bilateral agreements and reciprocity with partner countries, except for Russia and Chile. The signed agreements defined the principles of collaboration, priority themes and funding volume. Individual programs differ based on these principles. For Russia, a framework agreement has been negotiated since 2006 and could not be signed so far. Consequently, the Swiss National Steering Committee decided to run the program with Russia without a direct official partner at the governmental level. To ensure matching funding for the joint research projects, all Russian partners of Swiss applicants had to provide a commitment letter from a Russian funding source to be eligible for the program. The Russian Ministry of Education and Science supported the projects indirectly by publishing the calls on its official website. This encouraged Russian researchers to address their national funding agencies with a source of official support. Furthermore, the topics selected for the call corresponded to the ones mutually agreed upon in the framework of the negotiations in the bilateral agreement. Lastly, the program with Chile was based on an action plan signed in 2008 between SER and the Chilean “National Commission for Scientific and Technological Research” (Conicyt).

For all other programs, a joint committee was established for each program. The committee represented the main steering body of the program and was responsible for decisions on project funding. The joint committee was composed of representatives of both countries; SER, OPET, the LH, and SNSF represented the Swiss side. The ALH, were also invited to join the committees. As foreseen in the ERI Dispatch – following the experience with the pilot programs - the management of the Swiss side of the bilateral program was assigned to a leading house in a Swiss university. In the partner country, the program management was located in the S&T ministries. For most programs, a Swiss national steering committee was constituted and composed by representatives of SER, OPET, the LH, the ALH, SNSF and in some programs CTI.

For the evaluation of proposals in joint research projects, the LHs of the programs with China, India, South Africa, and Russia cooperated with the SNSF. The SNSF managed the submission process through its electronic platform *mySNF*. They also managed the evaluation and rating of the proposals on the Swiss side, after which the Swiss national steering committee elaborated their recommendations, which were then transmitted to the joint committee. A parallel evaluation process was established in the respective partner country. Finally, the joint committee, composed of representatives of each country, was responsible for making the final decision.

For other programs and smaller instruments, the submission, as well as the evaluation procedure, was directly managed by the leading houses that asked external experts to review the projects.

2.2 Instruments and Repartition of Funding

With the exception of the program in Korea, all programs devoted most of their resources to the funding of joint research projects (JRP). This instrument foresees that each country finances their domestic research activities, which became a major issue in the implementation and management of the programs (see section 4.1.6). The programs with Japan, Chile, and Brazil exclusively offered JRP as a funding instrument (for Brazil, JRP also included funding for exchanges and joint workshops).

As Table 2 shows, more than 80% of the overall resources were devoted to joint research projects, where Swiss project partners received on average of 200,000 CHF. These projects have a dimension that is similar (or larger, taking into account the partner abroad) to Swiss National Science Foundation projects. Until mid-2011, slightly more than 110 JRP were funded. There is no complete information on funding from partner countries as the administrative processes were separated (however see the further remarks in section 4.1.6).

Following JRP, the second most important instrument was the different types of exchange grants (including grants for exchange of faculty or student researchers). Exchange grants covered approximately 15% of the total funding volume. In total, more than 300 exchange grants have been funded (average funding volume 10,000 CHF).

Institutional partnerships aimed at reinforcing cooperation between partner institutions in two countries, supporting activities such as workshops, networking activities, exchange of people, and joint development of curricula. This instrument was included only in the programs with China and India. The program with India also included the joint utilization of advanced facilities. Since 2009, this, and topics such as socio-economic sciences and humanities, was also part of the program with Russia.

	IPP	EG	JRP	JUAF	Soc.-Eco Sc.+Hum.	Total
Brazil			1,837,876			1,837,876
Chile			425,000			425,000
China	1,032,320	1,192,300	5,482,066			7,706,686
India	539,780	753,117	5,137,417	134,106	87,034	6,651,453
Japan			1,350,000			1,350,000
Korea		386,020				386,020
Russia		859,730	4,922,562			5,782,292
SA		348,729	4,999,354			5,348,083
Total	1,572,100	3,539,896	24,154,275	134,106	87,034	29,487,410

Table 2. Distribution of the Swiss budget 2008-2011 by type of instrument and program in Swiss Francs. Additionally, India spent 386,436 CHF for PPP. Data excluding most recent calls in 2011.

2.3 Call for Proposals, Success Rates, and Repartition of Funding

The allocation of funding was organized by launching several calls for proposals. Most programs launched only a few calls for JRP, but had more frequent calls for exchange grants (e.g. every year or every six months for the larger programs). Table 3 shows the response rate to the calls as well as the success rate for the joint research projects. The success rates range between 35% and 50%, they are therefore similar to the success rates of the SNSF or the CTI. The JRP call for Japan is an exception, which was strongly oversubscribed. A similar exception occurred for the second JRP with Brazil (50 applications and 12 funded projects).

Success rates were generally higher for the smaller funding instruments, ranging from 92% (South Africa) to 77% (Russia) to 42% (Korea) for the different types of grants. For South Africa, and to a lesser extent Russia, success rates for exchange grants were particularly high.

Instrument	JRP	Grants (exchange, research fellowships, faculty exchange)
India	35%	49%
Brazil	31%	Not Applicable (NA)
Korea	NA	42%
Chile	47%	NA
Russia	60%	77%
China	32%	64%
Japan	16%	NA
South Africa	41%	92%

Table 3. Success rates of the calls in the bilateral programs (see the annex for details on individual calls).

While the pilot phase for both programs with India and China were characterized by high concentration on proposals and projects in the hosting leading house institutions, the current phase's main objective was to broaden the participation of the whole Swiss higher education system. This being said, the leading houses were chosen primarily because of their existing cooperation experience with the country in question. As the data displays, this objective broadened the participation to 7 out of 10 cantonal universities, and one University of Applied Sciences received at least one joint research project. At the same time, particular concentrations of funding can be observed. The four university institutions hosting a leading house program: EPFL, ETH Zurich, the University of Basel, and the University of Geneva received two-thirds of the total funding volume. This share is higher than the level of concentration of general SNSF funding, for which in 2010 these institutions accounted for 48% of the total funding.

	Brazil	Chile	China	India	Japan	Korea	Russia	SA	Total
Other		122,000	987,865	1,553,719	300,000	41,480	648,347	1,038,416	4,691,827
EPFL	665,085	83,000	1,906,018	2,011,927	300,000	92,090	1,898,854	250,000	7,206,974
ETHZ	396,310	100,000	2,196,963	603,472	150,000	200,200	155,920	818,770	4,621,635
UNIBAS	197,699		65,300	974,795	300,000	17,250	513,375	1,644,267	3,712,686
UNIBE		120,000	233,100	180,966		18,000	749,692	3,000	1,304,758
UNIGE			543,819	780,420	150,000		1,710,014	984,305	4,168,558
UNIL	578,782		514,424	495,555		17,000	96,140	254,125	1,956,026
UZH			1,259,197	50,600	150,000		9,950	355,200	1,824,947
Total	1,837,876	425,000	7,706,686	6,651,453	1,350,000	386,020	5,782,292	5,348,083	29,487,410

Table 4. Repartition of funding by program and university (data provided by leading houses excluding most recent calls 2011).

In all programs, except those with Chile and Japan, the university hosting the leading house has the highest amount of funding from that program. The share of the LH is around 30% for all large programs, about 20% for Chile and Japan, and above 50% for the program with Korea. With the exception of EPFL, having received a large volume of funding from three different programs (China, India, and Russia), the other institutions show a clear concentration of participation and funding in the programs they were hosting. ETHZ received 50% of the total funding volume in the bilateral programs from the China program (LH), Geneva 40% from the program with Russia (LH), Basel 44% from the program with South Africa (LH; including also the Swiss TPH as ALH), and the University of Zurich received 70% of the funding from the program with China, which is the associated leading house (ALH).

The participation of the Universities of Applied Sciences (UAS) to these programs was overall very low, especially for JRP (only 1 JRP out of all overall funded JRP, as of September 2011). The situation was slightly more balanced in exchange grants (17 exchange grants out of 324 were given to UAS). In the interviews, this limited participation was explained by the program's focus on basic research, as well as on specific topics of interest to the individual university. The Conference of Rectors of Swiss UAS, as well as other interview partners, requested an opening of applied research and new topics, including non-technological domains.

Finally, many of the programs included a focus on the cooperation with private companies, which in general was not very well successful. The India program launched a specific call for public-private partnerships in cooperation with the CTI, however they received very few applications. Only three projects were submitted and only one was approved. This was explained by the LH, who had complex eligibility rules, the novelty of the instrument, and the lack of networking with Indian private partners. Also, the internship instrument in the China program was rather unsuccessful. Other planned activities in this area aimed to establish first contacts and to network. An example of this was the Stepping Stone Symposia planned and organized by the China program management. For South Africa, in the framework of the Science to Market initiatives, a call for Seed Funding Projects involving a private partner was launched. 12 bilateral projects were submitted and 9 were approved and have started their collaboration. In the same framework, a series of workshops in biotechnology and entrepreneurial promotion among scientists was supported.

3 Bilateral Programs in the Swiss and European Research Funding Landscape

Bilateral programs represent a small share of Swiss funding available to Swiss researchers. Considering the specific measures for international cooperation, some existing programs are larger than others in terms of the overall funding volume. Therefore, it is very important to know to what extent these programs occupy a specific niche in the Swiss and European research funding systems, as well as complementarities and overlaps with existing funding instruments.

While this chapter focuses on research funding specifically, it is relevant to consider that bilateral programs are not research funding programs only, but are part of an overall international strategy in Swiss research. Thus evaluating the program needs to consider both dimensions, the policy as well as the funding dimensions (see chapter 5 for a discussion).

3.1 Bilateral Programs in the Framework of the Swiss International Strategy for Research

At the Swiss level, most funding of research projects are managed through the Swiss National Science Foundation (for basic research) and the Swiss Innovation Agency CTI (for innovation oriented and market-driven research).

SNSF's main funding instruments are basic research projects submitted by one (or several) researcher(s), mostly in Swiss higher education institutions. This scheme is open only to researchers employed in Switzerland and, in principle, research activities must be carried out in Switzerland. International collaborations are possible and positively considered, but there is no possibility to submit joint projects. Funds (e.g. visiting foreign experts) may be granted case by case. In 2010, there were 3,800 international collaborations with projects mostly with Germany, USA, and other European countries. An exception to this rule was the project funding scheme Sinergia, which funds small-scale networks of collaborating institutions cooperating on a common research agenda. Therefore one of the participating groups can be located abroad if it holds competences required for the project that are not available in Switzerland. About 15% of the funded Sinergia projects (2008-2011) have partners abroad, almost all of them in European countries.

Other than the regular funding instruments, SNSF manages a few specific instruments for international cooperation. Their institutional policy has changed in recent years. The SNSF no longer manages country-specific programs based on bilateral agreements. They do however manage general instruments targeting international cooperation or specific regions, and are entirely funded from the Swiss side.

Lead Agency Agreements allow for the evaluation and funding of joint projects with other countries based on reciprocity. This is where the agency of the lead partner manages the whole evaluation process and the partner agency provides the requested funding. Lead agency agreements represent a rapidly growing opportunity of cooperation between research councils in Europe. The SNSF currently has such agreements with Austria, Germany, and Luxembourg. Further expansion is foreseen over the next few years, including a few non-European countries (among them are potential candidates Japan and Korea).

Furthermore, the SNSF and the Swiss Development Cooperation (SDC) manage the programs with Eastern Europe, focusing on the Western Balkan countries, South Caucasus, Central Asia, Moldavia, and the Ukraine. Moreover, the SNSF currently manages the cooperation program with

developing countries. Starting in 2012, the latter will be replaced by the SDC-SNSF fund for research on global issues. The program with Eastern Europe has a small overlap with the bilateral programs, as Russia is an eligible partner (together with at least one of the “A” countries). Overlap with the future SDC-SNSF fund will be rather limited, as participation will be focused on the least developed countries. In the current version of the participation rules (as of the end of 2011), only India will be fully eligible, whereas participation of upper-middle income developing countries (Brazil, Chile, China, and South Africa) will only be possible in specific cases. Moreover, thematic programs will require at least two partners from two different developing countries. The SDC-SNSF fund will also be oriented towards addressing global issues and development problems rather than to overall scientific cooperation (with the exception of the thematic free funding line).

There is little overlap with other programs, which has been confirmed by the JRP survey where 71% of the respondents declared that they did not receive other funding from international cooperation instruments. Only 16% of the survey participants said they had received previous SNSF funding through the developing countries programs (mostly in India and China). Also, only 25% of the respondents stated that there were funding sources available for cooperation with their partner countries; however in Russia, this share is near 40% (where European sources are considered as quite important).

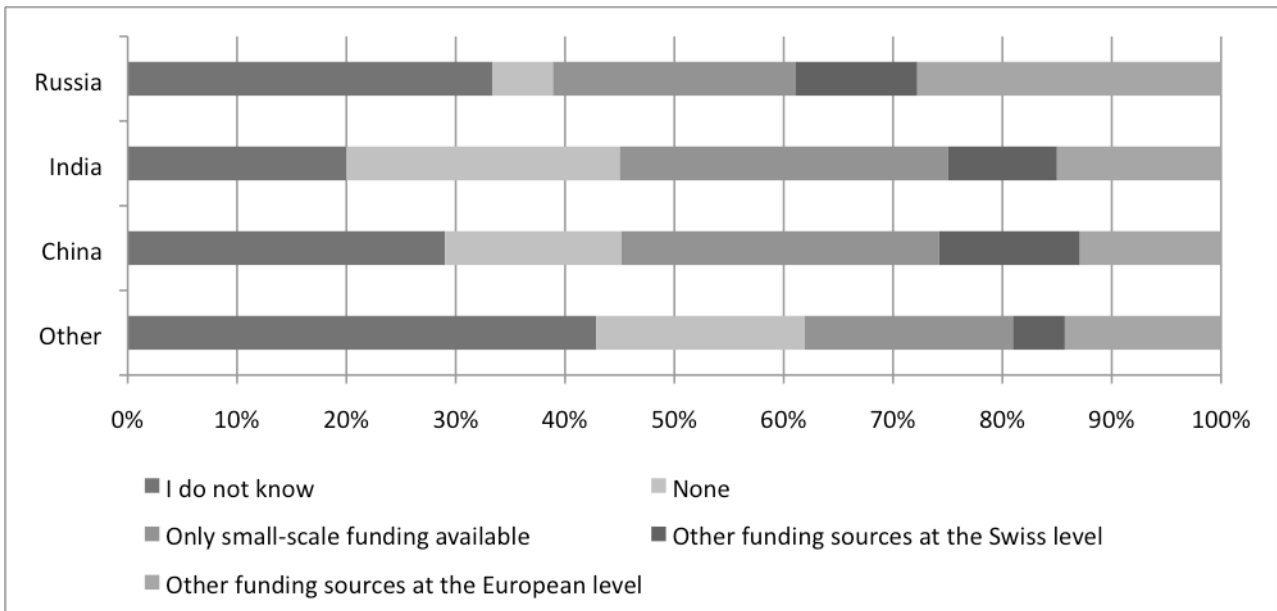


Figure 3. To what extent do other instruments, supporting cooperation with your partner country, exist? (Source: survey of JRP beneficiaries. (N(JRP)= 92).

The Commission for Technology and Innovation (CTI) funds cooperation projects between Swiss public research organizations and companies. It's aim is to promote economic development in Switzerland. Funding can only be provided to Swiss public research institutions. The current legal foundation of the CTI allows support of international cooperation activities; which in the past year, the CTI launched a cooperation program with China. Currently all international cooperation activities in this domain are managed directly by the Federal Office of Professional Education and Technology (OPET). The OPET is responsible for the Swiss participation with Eureka, Intelligent Manufacturing Systems, technologically-oriented ERA-NET, and joint technology platforms. Out of these programs, the only relevant program for the bilateral partner countries is Eureka, in which Russia is full partner.

Regarding exchange grants, some SNSF schemes potentially cover bilateral cooperation countries. Prospective and advanced fellowships allow Swiss researchers to research in an institution abroad for a certain period in order to prepare their scientific careers. Most of the grantees go to the US and Europe. In 2010, 650 prospective researchers received an exchange grant. Of these 650 researchers, only 23 went to Asia, 6 to Central America, and only 4 to Africa. Short visits allow to finance research visits abroad up to three months (or visits of foreign researchers to Switzerland). Among the grants funded in 2010, none of the awarded grants involved one of the bilateral partner countries (some exchanges in 2011 were funded with China and India). Also, in the exchange grant survey, only about 10% of the participants said they were aware of the existence of other funding. Higher fragmentation of the programs leads to an increased complexity of the funding landscape and makes the navigation through it more difficult for researchers.

3.2 The Swiss Bilateral Programs in the European Research Landscape

In order to overcome the fragmentation of the S&T cooperation between EU member states, in 2008 the European Commission issued a statement on S&T international cooperation. It set general principles and defined priority countries for the S&T international policy of the European Union (European Commission 2008). In terms of topics, the Commission statement focused on S&T cooperation, addressing global challenges and the field of Information and Communication Technologies (ICT). In geographic terms, it set two priorities, namely integrating neighboring European countries to the East and South into the European Research Area (ERA) and cooperating with key third-party countries, including developed economies and emerging countries. The European Commission also signed a large number of bilateral cooperation agreements in the S&T with third-party countries, including all partner countries in the Swiss bilateral programs.

3.2.1 Framework Programs and other Operational Initiatives

In operational terms, most of the S&T cooperation was managed through instruments related to the framework programs (FPs) (for an overview see <http://ec.europa.eu/research/iscp/index.cfm?lg=en>). Most third-party countries are allowed to participate in FP projects under two different statuses. The first being International Cooperation Partner Countries can receive EU funding for their participation to the FP action, and the second being participants from high-income countries (including Korea and Japan) can participate with their own funding. International activities in the FP7 are generally included in the thematic areas of the program. Inside the calls, specific topics may directly address international cooperation and specific S&T issues related to developing countries. After the United States, Swiss bilateral program countries are countries with a regular participation to FP7. Their participation has strongly increased in respect to previous framework programs.

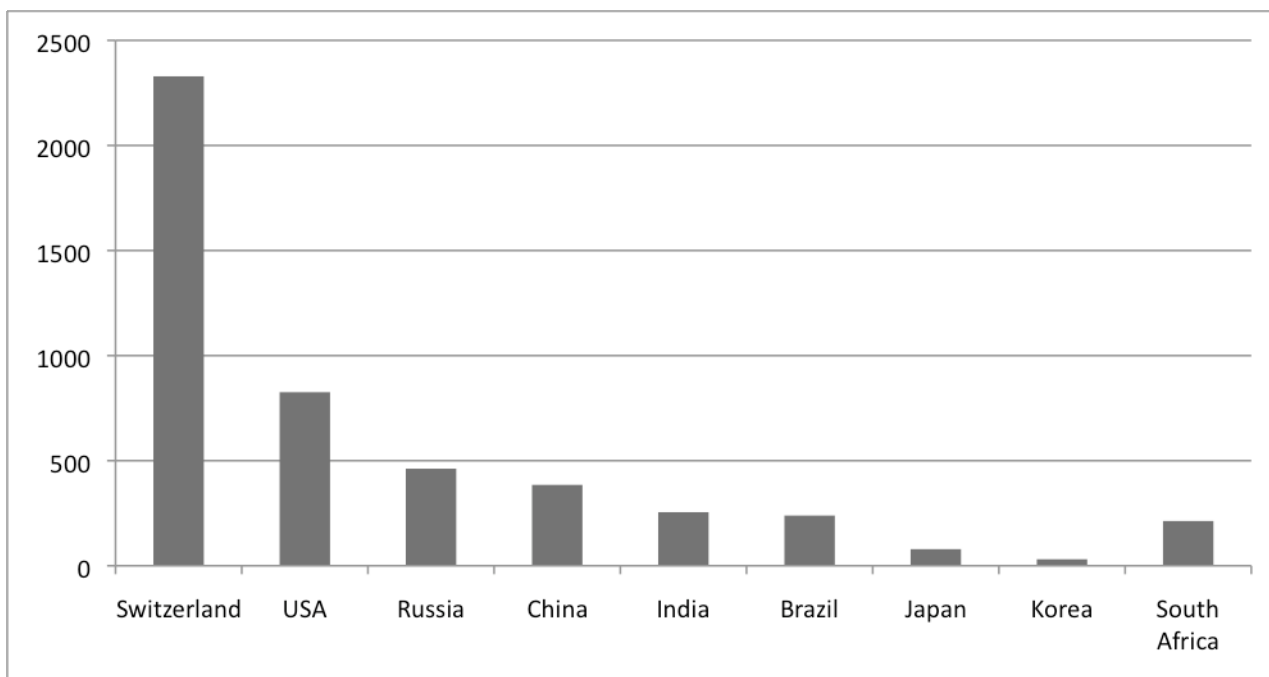


Figure 4. Number of participations of third-party countries to FP7 (Source: European Commission).

The specific international cooperation program supports horizontal measures, including the establishment of information points as well as the coordination of S&T policies and activities. INCO-NET projects aim at promoting S&T bilateral dialogue for specific regions in the world (e.g. EULARINET for Latin America) or BILAT projects, which focus on providing information on specific countries. Also, a number of ERA-NET programs devoted to international cooperation have been launched (see below for the specific countries considered in this report).

When focusing specifically on the countries included in the Swiss bilateral cooperation programs, the situation is as follows.

Russia is the scientific cooperation partner of the EU outside the ERA and negotiations have been launched for its association to the FP (see Delegation of the European Commission to Russia, Compendium on Science & Research Cooperation between the European Union and the Russian Federation, 2009). Cooperation with Russia has taken place within the EU Tacis program and its supporter the European Neighbouring and Partnership Instrument (ENPI; http://ec.europa.eu/europeaid/where/neighbourhood/overview/index_en.htm).

However, Switzerland cannot participate to these actions. More specifically in the field of S&T cooperation, Russia is a full member of Eureka and ITER (nuclear fusion). Moreover, Russia is actively participating in COST activities. In order to coordinate national S&T cooperation with Russia, the ERA-NET RUS was launched in 2009 with ten participating countries (<http://www.eranet-rus.eu/>). In 2011, two pilot calls were launched for innovation projects (2.9 million Euros) and S&T projects (5.9 million Euros). Switzerland participated in this call through the bilateral program. Swiss contribution was increased to 1 million CHF because of the strong participation of Swiss researchers to these funded projects.

India has been endorsed as one of the strategic partners for S&T cooperation of the European Union. A pilot initiative was launched in 2009. Between 2007 and 2009, three coordinated calls with India have been launched in the areas of computational materials science, food and nutrition research, and solar energy research (EU funding was 13 million Euros). A new joint call on water and bio-related challenges was launched in 2011 in FP7 (EU funding was 32 million Euros).

Moreover, in 2009 the New INDIGO ERA-NET was launched. Besides coordinating activities, two calls for networking projects (maximum funding 50,000 Euros) in the fields of biotechnology and health, and water waste management with green chemistry were launched.

China is one of the main strategic partners in the S&T cooperation with the European Union. After signing the bilateral agreement in 1998, active exchanges at the political level have taken place on how to strengthen this cooperation. At the European operational level, no specific instrument has been created. Still, the Chinese participation to the FP is growing very fast and it is the third country in terms of number of participants after the US and Russia. China is also one of the main target countries for bilateral cooperation of programs of member states (Horwath & Lundin 2008).

Japan's S&T cooperation is under-developed compared to India and China. This is shown by the low number of participation to the FP. A relevant initiative is the CONCERT-Japan ERA-NET, which aims at promoting S&T cooperation between ERA countries and Japan (<http://www.concertjapan.eu/node/35>). The ETH Zurich, in Switzerland, is the coordinator of the program and participates in CONCERT Japan. A pilot joint call is foreseen for 2012 with these two participants. Topics and levels of funding are still to be announced.

Brazil and Chile: Brazil signed an S&T cooperation agreement with the EU in 2005 and Chile in 2002. Beyond the participation in the EU FP, there are no specific instruments to support the cooperation in S&T. The ERA-NET EULANEST (FP6) launched a joint call between five EU countries, Brazil, and Argentina in 2009. In the FP7, a specific cooperation action is aimed at strengthening the S&T cooperation between EU member states and Latin American countries, but it is limited to coordination activities only.

South Africa signed a cooperation agreement in 1996 with the EU and created a strategic partnership in 2006. Efforts in cooperation have focused on increasing the participation of this country to the EU's FP. South Africa ranks as fourth in the number of participations to FP6 after the US, Russia, and China. Cooperation was also developed in the framework of the ERA-NET Africa, in which the SNSF participates. Research funding in this ERA-NET is planned to start in 2013.

3.3 Bilateral Programs

The recent contract on Joint Programming in the European Research Area (JOREP) provides a complete overview of transnational coordinated research in the ERA, including bilateral programs managed by EU member states and third-party countries. The contract covers 11 European countries, including Switzerland and all the large EU member states.

As Table 5 shows, most countries have some kind of bilateral programs with non-ERA countries and share a focus on the BRICS countries with Switzerland. In many countries, the programs that provide funding for joint research activities are small compared to the much larger set of bilateral cooperation agreements supporting networking and exchanges (as in the case of Germany).

The largest program is the international program of the French National Research Agency (ANR). They have launched joint calls with a large number of non-ERA countries, followed by Spain with its orientation towards Latin America (related to colonial history and the common language). Other countries have much smaller programs focused on just a few countries.

Overall, the main cooperation partners of the European neighbors are India and China, as most countries have a bilateral cooperation program with them. Programs with Russia, Korea, Japan, or South Africa can be found only in a few other European countries.

Country	Partner countries	Budget 2009	Programs and remarks
France	Canada (Québec), Japan, Taiwan, China, Korea, Mexico, Singapore, Brazil, China, USA	NA	International programs of Agence Nationale de la Recherche (ANR). Dedicated calls to specific countries and topics decided year by year. It includes both specific programs for international cooperation (program Blanc international) and the selective openings to partner countries of some thematic programs. http://www.agence-nationale-recherche.fr/programmes-de-recherche/programmation-2011/calendrier-international/
Germany	Egypt, USA, China, India, Japan, Russia	2 mil Euros (Japan)	DFG has more than 50 international cooperation programs, but most of them support only travel and short-term exchanges. Joint calls for common projects with non-ERA countries have been launched in recent years with the countries listed. http://www.dfg.de/dfg_profil/im_internationalen_kontext/internationale_partner/index.html
Netherlands	China	3.7 mil Euros	Joint Thematic Research program with China managed by NWO; priorities decided for yearly calls for proposals. Other smaller programs with limited funding with other countries. http://www.nwo.nl/nwohome.nsf/pages/NWOA_7Q3RJS_Eng
Spain	USA, Argentina, Brazil, Canada, Japan, India, Korea	21 mil Euros	Bilateral programs with these countries managed by the Ministry of Science and Innovation. Moreover, Spain participates in the Ibero-American program on Science and Technology, including almost all Latin-American countries. Most of these programs include regular calls for joint projects. http://www.micinn.es/portal/site/MICINN/menuitem.7eeac5cd345b4f34f09dfd1001432ea0/
Norway	China, India, South Africa	3.9 mil Euros	Research Council of Norway cooperation program with China, India and South Africa funding joint projects. http://www.forskningsradet.no/en/International/1138785831669
Denmark	China, Hong Kong	1.5 mil Euros	Bilateral cooperation with China. Common research projects on sustainable energy. http://en.fi.dk/international/global-cooperation/denmark-china
UK	Brazil, USA	0	Lead agency agreements of the research councils with Brazil (State of Sao Paulo). Very low amounts of funding.

Table 5. Bilateral cooperation programs of the EU (Source: JOREP project).

Compared to the other European countries one can notice that their bilateral cooperation programs generally focus on a smaller set of countries and have significantly less funding, with the exception of France and Spain. As in Switzerland, almost all the programs are based on co-funding (each country supporting its own research groups). However, the respective national research councils manage them. None of the countries considered adopting the Swiss Leading House model.

3.4 A Final Assessment

First, in the Swiss research funding landscape the bilateral programs cover a specific niche where there are very few funding opportunities. A lot of funding is provided for European cooperation and research with Eastern Europe and other developing countries. To some extent, Russia is an exception. Russia is strongly involved in other cooperation schemes (EU framework program or Eureka). No similar instruments are provided for joint research projects with North American countries. However, cooperation is easier due to the strong similarity of research systems and, eventually, this could be addressed through other instruments (e.g. a Lead Agency Agreement between SNSF and NSF).

Second, international cooperation with third countries (non ERA cooperation) is of increasing importance for the European Union and currently focuses strongly on Russia, China, and India. With both Russia and India, the EU has recently launched joint calls. Russian cooperation possibilities are well-developed: through an ERA-NET, Eureka, and other instruments. Especially in Russia, the European involvement trend should be carefully observed to assess at what extent specific Swiss programs are still justifiable (participation to the Russia ERA-NET through the bilateral program represents a positive step in this direction). However, most interview respondents stated during the discussions that, while European initiatives are quite important, they are overly complex. This holds true especially for ERA-NETs given the variable geometry approach, and thus is considered useful to have national programs.

Third, the Swiss policy concerning bilateral research cooperation is quite similar to that of other European countries (whose programs all focus on similar emerging countries). However, other European countries tend to have less cooperation partners than Switzerland and have a strong focus on India and China. Furthermore, in all examined countries, these programs were managed by national funding agencies and thus the rationale for the Lead Agency model deserves a closer investigation.

4 Evaluating Management and Operations of Bilateral Programs

In the following section, results are presented concerning the program operations – including information to applicants, the evaluation and selection process, and the management and reporting. A special focus will be placed on the relationship with partner countries as one of the most critical issues in program management.

When looking at the results, one should consider that most of the information comes from either the program managers themselves or from researchers who were supported by the program. Therefore, the opinion they express about the program operations might be biased, especially concerning the assessment of how the selection of projects was made.

4.1 Program Operations: an Overview

4.1.1 The Funding Instruments

As shown by Table 2, two types of instruments were adopted mostly within the bilateral research programs: Joint Research Projects (JRP) and Exchange Grants of various types (faculty, researchers, doctoral students and, to a lesser extent, undergraduate students). There is an overall consensus on the added value of these tools: these instruments absolutely match the needs for cooperation with the partner countries (see **Figure 5**). While JRP are considered as the most important cooperation instruments, exchange grants have proven to be increasingly more important to start cooperation from a light and bottom-up approach. Overall, student (researchers) exchange grants were considered more important than faculty exchange grants. One reason could be that faculty has more opportunity to find other resources for travelling (at least on the Swiss side).

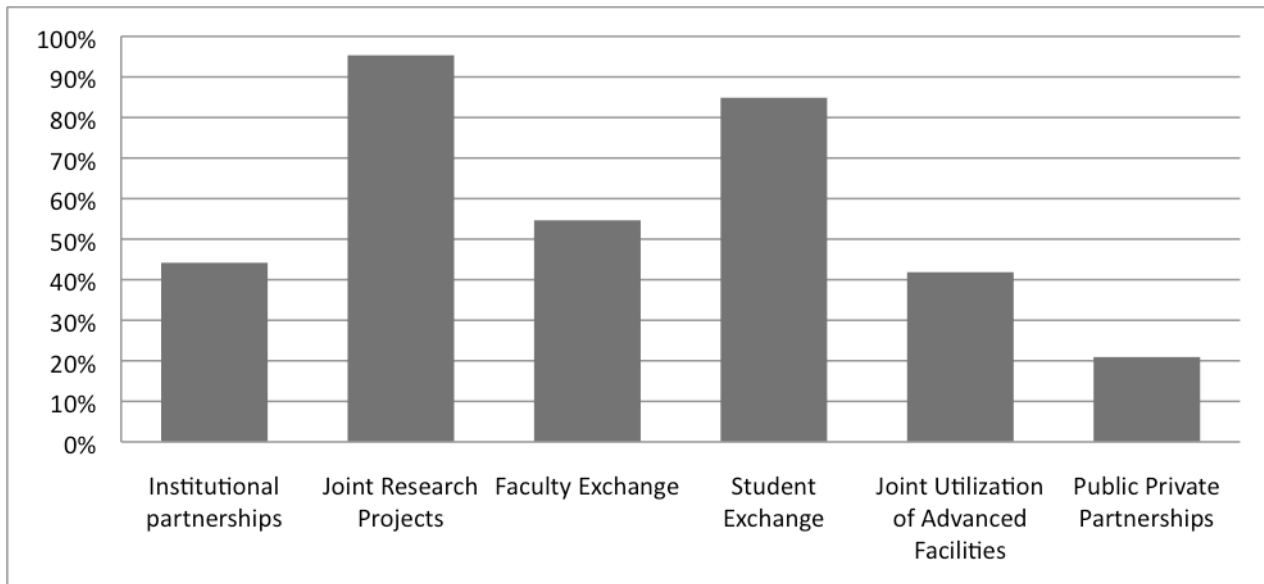


Figure 5. Which level of priority would you attribute to the following instruments in the next phase of the bilateral research programs? (N(JRP)=92) In: Percent of respondents responding important and very important to this question (on a five-point scale).

Instruments other than JRPs were rated much less important by participants and project managers. Interestingly, institutional partnerships (IP) and public private partnerships were given lower priority even from country programs offering these instruments, such as China and India.

Concerning the choice of topics, most interviewed persons stated that these, by large, reflect the main domains on which international cooperation was focused. This statement is broadly confirmed by the JOREP analysis of joint programming in Europe. JRP respondents were divided between those wishing to keep the same priority topics (51%) and those suggesting opening the programs to all scientific fields (41%). Taking into account that the current sample includes only researchers in the priority areas, the statement towards opening seems quite strong. However, this might not be very realistic compared to the financial resources available for each program.

Discussion. These results argue the fact that the current focus of bilateral programs on JRP and Exchange Grants is well justified. JRP are required for developing research cooperation, while exchange grants allow a stronger bottom-up approach. Exchange instruments managed by SNSF (grants, international short visits) are in principle open to bilateral partner countries, but *de facto* are mostly used for stays in the US and European countries.

From the Swiss perspective, the following issues need, however, to be carefully considered when designing the next program phase:

- First, a clear justification is required for additional instruments as they increase the complexity of the programs for both potential applicants and management. No strong request has emerged for them from the present evaluation.
- Second, exchange grants should be adopted in all programs, as they are the driving forces in establishing cooperation with the partner countries (they are currently not adopted for Brazil, Chile, and Japan).
- Third, for the smaller programs the reasoning to fund JRPs should be carefully considered, as the budget allows only the support of a few projects. It might be a better choice to focus on exchange grants only. The JRP call for Japan (as well as the second call for Brazil) were heavily oversubscribed, while in Chile there were just 7 applications and 4 funded projects. The effort required to justify small-scale calls is questionable as well as the potential impact of a so small number of projects on bilateral research cooperation (compared to the option of funding a larger number of exchange grants).

4.1.2 Information and Communication

All bilateral programs have developed their own websites, providing reasonably complete information concerning the objectives and organization of the programs, as well as on funding instruments and rules for submission. On almost all of them, call deadlines were visible on the homepage. Moreover, call announcements were diffused regularly to Swiss higher education institutions through their international correspondents. Additionally, the SER provided a webpage with general information on these programs, individual factsheets, and a list of open calls for all programs. There was no lack of information on these programs and, as **Figure 6** displays, funded applicants were reasonably satisfied with the information available, as well as with submission forms and procedures. Nevertheless, 30% of the *funded applicants* rated the program information as either insufficient or fair, which shows there is room for improvement in this area.

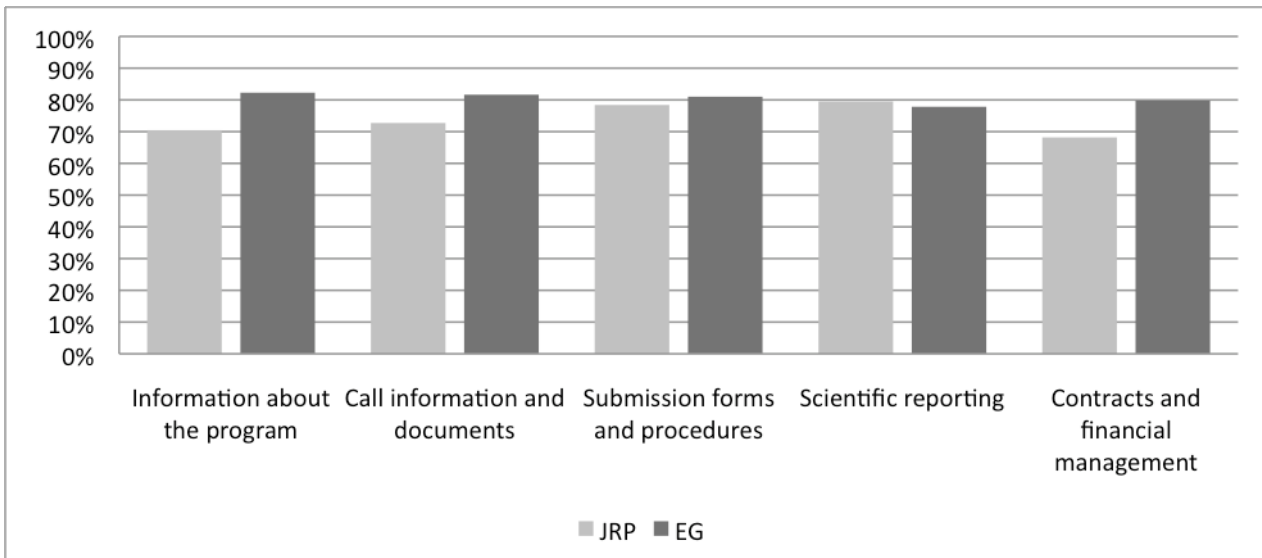


Figure 6. How do you evaluate the following aspects of program management? (N(JRP)=92, N(EG)=176) In: Percent of respondents responding important and very important to this question (on a five-point scale).

A closer look at the program’s website displays a very high level of variety in how the information is displayed and organized. While the content is largely similar, its position and presentation widely differ. If, to give an example, one uses the ETH Zurich website, the menu for Japan and Korea are similar but the one for China is different. While for Japan and Korea the list of awarded projects appears in the left menu, for China the files are downloadable on the right side. The same applies to *Call for Proposals*. For China they are in a different place than for the other two countries. Finding the program websites is rather complex. On the SER website there is no list naming the leading houses and linking the interested reader to the respective call website (even if that information is available on program fiches). Although there is an overall call document at the bottom of the page, navigation is rather difficult.

To some extent, this relates to differences between individual programs in the instruments and priority areas funded. Another reason might be that each LH has adopted its own logic in the presentation of information, using the corporate template of the respective university. Also, each program does its promotion of calls individually and thus there is a risk of information overflow to the researchers.

This strengthens the argument that the LH should develop their own visibility and communication strategy. However, it raises two relevant issues. First, there is no common brand and visibility of bilateral programs as a single program. Thus, there is a risk that they tend to be identified as stand-alone programs rather than as part of a coherent international strategy. As pointed out in one of the interviews, this impairs the overall (political) visibility of the bilateral programs as a whole.

Second, from the researcher’s perspective, differences in information structures entail higher access costs to the programs. Information barriers might also account for the fact that universities hosting the LH eventually had larger shares of all applications and funded projects (see section 2.3).

Discussion. For the next phase it is strongly suggested that an effort is made towards more uniformity of the information suggesting following actions:

- Defining a common information structure for the program websites (if the option of a common website for all the bilateral programs is not retained for organizational reasons), as well as wording and layout requirements (e.g. Confederation logo on all homepages).
- Developing standard templates for key documents including call texts and application rules (to the extent feasible taking into account bilateral negotiations).
- Developing a common information policy towards universities and researchers (e.g. a bilateral programs e-newsletter grouping all announcements and calls for proposals).

4.1.3 Submission Rules and Application Forms

Similar remarks apply to submission rules and application forms. Both the assessment of the funded applicants (see **Figure 6**) and the inspection of the websites, call texts, and application forms show that overall LH did a reasonable job in terms of providing the required information for each call and that the application forms are not overly complex. They correspond broadly, in terms of structure, to requested national funding programs.

The analysis of rules and forms shows that there has also been some efforts of standardization through exchanges of experiences between LH. Adopting the same daily allowances across different programs for exchange grants and having similar structure of the application forms is one example. At the same time, there are quite a few small differences between rules and forms for each program.

For India, China, South Africa, and Russia more standardization was introduced by the submission through the SNSF on-line system *mySNF*. According to the interviews, the specificity of bilateral programs generated some problems at the beginning – as *mySNF* is a general platform developed to manage all SNSF funding instruments and thus have some limitations to what extent it can be adapted to specific programs. However, our interview partners stated that these difficulties could be overcome and the submission process was managed smoothly.

Where submission took place through *mySNF*, the whole submission process was managed electronically in Switzerland. Once the *mySNF* user agreement is signed there is no need to send paper documents. For most other cases, both electronic and paper documents with original signatures needed to be sent to the LH directly. In most cases, the application had to also be submitted to the managing institution in the partner country (with the exception of Russia and of EG/IP with China).

Discussion. Until now, standardization was realized bottom-up through exchanges and learning by doing between LH. There are strong reasons to make this process more systematic, at least within the Swiss region. In Switzerland, *mySNF* is also becoming a standard for proposal submission: almost all JRP grant recipients have previous experience with SNSF projects (see **Figure 8**). Therefore, there is no reason to adopt a different system for bilateral programs. More specifically, it is advised to take the following steps:

- The (Swiss) submission of all JRP proposals for all programs should be managed through *mySNF* as this will bring the following advantages: adopting a submission platform which is well-known by all Swiss applicants, reducing differences in forms, and making the management of applications easier (as they are generated in a standard format by the system and can be managed directly on-line).
- The same option should be considered for exchange grants. The SNSF manages grant schemes that are rather similar to EG and thus *mySNF* is already equipped for a similar type of applications.
- Furthermore, it is advised to make an effort to standardize the participation rules and guidelines and to check at what extent differences – e.g. in the duration of EG – are justified by specific cooperation needs. The long-term goal should be to have a single set of application rules and guidelines for JRP, respectively EG, covering all partner countries including a section on specific rules applying for individual countries. Realistically, it would be advisable to start this process with the largest and better-established programs and then progressively extend it to others.
- Finally, an effort should be made to go from the current parallel submission in both countries to a single submission, if this is acceptable for the partner country. Specific national requests for information could be managed through certain additional forms (as done for the lead agency agreement between Switzerland, Germany, and Austria, where an additional form containing information for the partner agencies has to be submitted).

4.1.4 Evaluation and Project Selection

Evaluation and selection procedures are one of the most delicate and difficult components of research funding programs. Assessing the best proposals that have been selected requires going deep into the selection process. What can be reasonably analyzed in an external evaluation is the extent to which the organization of the evaluation and selection process matches the recognized standards for scientific programs. Moreover, judgments on the selection process are under an even higher risk of being biased because only successful applicants were asked.

In general terms, no signs of fundamental problems in the selection process could be detected. It was found that information was available, the process was seriously managed by leading houses with the support of the SNSF (India, China, South Africa, and Russia), and/or calling in external experts for the other programs. Since a very high share of funded applicants also received SNSF and European projects (see **Figure 8**) shows that selected applicants have a level of scientific reputation corresponding to SNSF standards. This dimension was taken into account in the evaluation process. For India, China, South Africa, and Russia the cooperation with the SNSF seems to have worked rather smoothly. The model where the SNSF manages the scientific evaluation, while a joint committee makes the final decision, represents a reasonable compromise

between the requirement of professionalizing the evaluation process and the specific requirements (i.e. in terms of flexibility and adaptation to different scientific cultures) of bilateral cooperation. In this respect, bilateral programs can also be considered as a test of the feasibility of establishing cooperation with these countries.

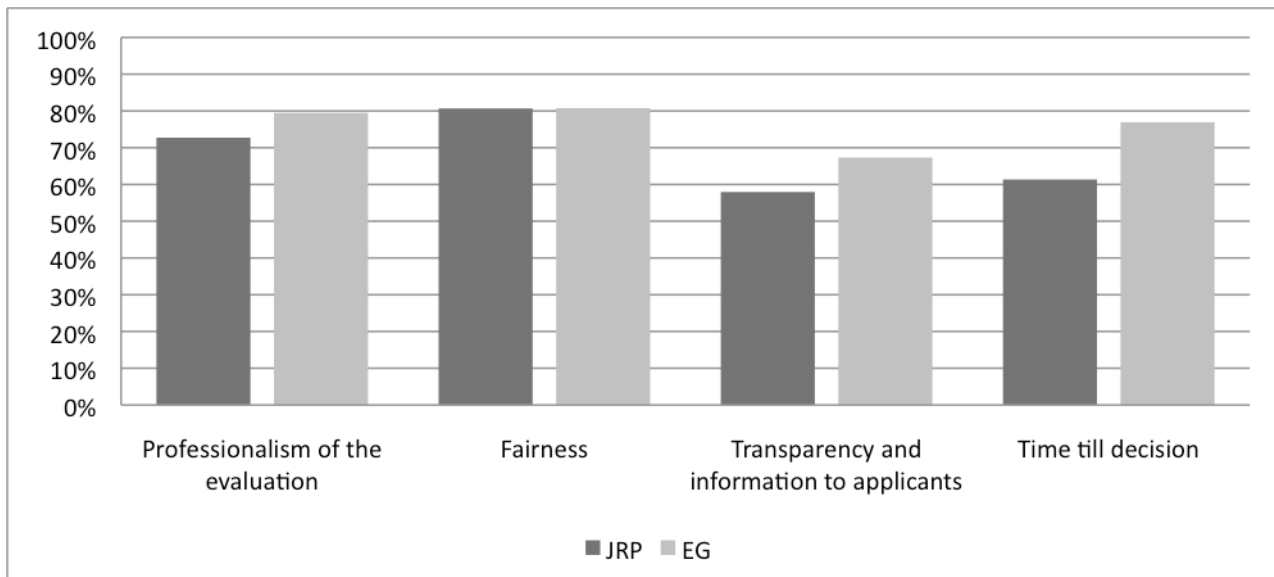


Figure 7. How do you evaluate the following aspects of the evaluation process? (N(JRP)=92, N(EG)=176) In: Percent of respondents providing marks rather good and very good (on a five-point scale).

As shown in **Figure 7**, the overall assessment of the evaluation process by Swiss funded applicants was generally positive. Major complaints, even among those receiving funding, emerged concerning the transparency of the process and timing until the decision was made (for JRP). For calls launched in 2011, the waiting period from the submission of the project to the final decision lasted between 5 and 6 months. This should be considered as a reasonable length given the complexity of the process. It requires a parallel evaluation by each country and then a bilateral negotiation process takes place. To give a benchmark, the proposal selection at the SNSF takes about 6 months (but has a larger number of proposals). Significantly shorten the time to make the decision would require changing the structure of the evaluation process. However, it is important to give reliable information to applicants when the decision will be made. In the recent JRP call for Brazil (submission deadline: 15th of May 2011), it was announced that the results would be known by the end of July, while results have not yet been announced (website information on 22 December: results at latest in November 2011).

Transparency and information to applicants are a serious concern. More than 40% of the funded applicants – those who have no reason to complain – rate this aspect either as insufficient or fair (scores 1-3 on a five-point scale). The decision letters sent to applicants only included the final decision (approval or rejection) and a general statement on the number of projects selected. It also included that only projects that were evaluated as excellent in both countries were selected. *A state-of-the art communication about the decision should include at least the following elements:* a clear indication of the rating of the project (e.g. low quality or high quality but below the funding line), the indication of the main reason for rejection (as requested also by administrative law), and excerpts of the external reviews (if possible the complete anonymous reviews, at least when requested by applicants).

The evaluation procedure for bilateral programs – having two parallel processes in each country – makes clean reporting of decisions more difficult – an argument strongly put forward by

respondents from the LH. Nevertheless, it is recommended that the current practice needs substantial improvement as it does not correspond to the standards of most research funding programs or to the requests of the administrative law.

Also, the level of public information concerning the evaluation process (e.g. on the program websites or on call documents) varies between programs. Some of them explain in detail how the process works and who the actors involved are. Some only provide generic information.

The usual practice of funding agencies should be followed. This is where the names of reviewers are anonymous but the composition of the selection committee is public. Generic references to selection committees are not always transparent, as shown by the recent call indicating that “applications submitted will be evaluated by an ad hoc committee of faculty from Swiss Universities consisting of experts in the respective scientific or technological fields”. Information is particularly generic for EG, which to some extent is understandable given the low amount of funding.

A delicate issue for bilateral programs is the parallel evaluation in the partner countries and the need to negotiate the list of projects to be selected and funded. Data from the JOREP project (see section 3.3) shows that this model characterizes most bilateral cooperation programs of European countries with third-party countries. This constraint was one of the reasons why the SNSF stopped managing programs based on bilateral agreements. They were in favor of those financed and managed from the Swiss side only.

In the interviews, leading houses reported a few cases of disagreement or of projects not being on the Swiss priority list. These were ones that partner countries had requested for funding, but this was not a general phenomenon. The practice was adopted in some programs of rating Swiss proposals in A, B, and C categories. This practice and uniform notation system should be adopted for all programs. As one of the respondents remarked, the program committees (both national and joint) are not composed of scientists and thus lack the competence to thoroughly discuss which projects need to be selected (especially in case of disagreement between the partner countries).

Discussion. While there were no general concerns about the evaluation and selection process – also taking into account the goals and specificities of bilateral programs – some experiences showed possible points of improvements:

- First, concerning JRPs, all programs should adopt the model where SNSF performs the scientific evaluation on the Swiss side and delivers a rated list of proposals to the joint committee. This complies with the previous recommendation that JRP should be included only in programs with a sufficiently large budget.
- Second, concerning EG, basic rules for the evaluation process should be introduced for all programs, as the level of transparency on EG evaluation is generally not satisfactory.
- Third, transparency of the evaluation process should be improved concerning both the information provided on how the process works and the content of the decision letters sent to applicants.
- Fourth, transparency of the selection process would be improved by creating a unique rating system and requesting that each party provides justification for the rating. This would be paired with the supporting material (reviews) to the joint committee.

4.1.5 Contract Management and Reporting

Contract management and reporting are often a source of complaints in research funding programs. Academics, once granted the money, would like to have as much flexibility as possible and as small of an administrative burden as possible. Also, the situation in Switzerland is particular in this respect as most funding is provided by SNSF. The SNSF has rules that are well-adapted to academic needs (e.g. no contracts, increased flexibility in the use of funding, light reporting) and certainly lighter than in most European countries. Accordingly, most JRP and EG receivers gave good marks to reporting and contractual management from the Swiss side. This shows that the leading houses did a reasonable job and did not overburden researchers with administrative requirements (**Figure 6**).

Nevertheless, quite a few remarks were made concerning administrative aspects, which should be carefully considered when setting up rules for the next program phase. Some respondents clearly indicated they would prefer the management to be done through the SNSF. Most LH respondents acknowledged the advantages of the current model in terms of flexibility and simplicity, fearing that management by SNSF would entail higher costs, given the specificity of these programs. Few comments remarked that, while the Swiss situation was satisfactory overall, there were more administrative problems in the partner countries.

Discussion. In terms of contract management and reporting, the main emerging issue was that each of these programs had set up its own specific way to handle these procedures. This implied that a stronger administrative burden both for applicants and for the university grant offices was incurred, making each specific contract managed individually. A second issue is the administrative burden required for the EG applications, given the much smaller financial volume. It is therefore advisable to consider the following options:

- Transferring the management and reporting of the JRP grants to the SNSF would have a number of relevant advantages. The first advantage would be having the possibility to rely on SNSF general grant regulations and thus adding only specific conditions for that specific program in the contract. Secondly, being able to manage the whole process electronically through *mySNF*, which was extended in 2010-2011 to also include financial and scientific reporting; both grant applicants and universities are familiar with this interface. Lastly, it would avoid creating ad hoc management capabilities inside LH for each program individually.
- Simplify the extent of possible rules and reporting conditions for exchange grants and especially avoid the need of detailed accounting of financial expenses. A lump sum solution with standard allowances *including* travel costs – thus only requiring a short activity report with indications of the visits done (period, travel, etc.) – would reduce the administrative effort (both in the proposal and in contract management).

4.1.6 Collaboration with the Partner Countries

For this type of program, the collaboration with the partner country is essential in order to achieve the envisaged results. This issue can be considered at two levels, namely collaboration in the program management and collaboration between the involved research partners.

While the second aspect is discussed in the following chapter, it is important to note that collaboration at the researcher level is seen as having worked pretty well and in some cases allowed the overcoming of difficulties created by different rules and lack of funding in the partner

countries. As one of the JRP survey respondents stated in the case of Chile, where the cooperation at the program level was particularly difficult:

“The setup/implementation of the cooperation with Chile was not really ideal and smooth. Such cooperation requires a call with one JOINT proposal (submitted by both partners together) and not with two separate proposals as it was the case with Chile. However, in our case (we have already loosely cooperated with the Chilean partner) we could implement an effective cooperation (regardless the rules of the program).”

This also means that while looking for institutional collaboration is an important element, it should be contextualized in terms of its impacts on the scientific collaboration (which is the main goal of the program).

Both the interviews and the comments in the survey provided a rather clear picture concerning the relationships with partner countries and are summarized as follows.

Experience with communication at the program level with partner countries was mixed, working well in some cases, but being more difficult in others because of administrative and scientific cultures (as well as staff changes in the program management in the partner country). Especially the process of negotiating bilateral agreements and deciding the main characteristics of the programs took a long time in the countries that did not have a pilot phase. For Korea, the agreement was signed in 2008, and the program started in 2009. For Brazil, the process started in 2007, the agreement was signed in 2009, and the programs started in 2010. For Russia, so far no official agreement or cooperation partner exists. In this respect, having LH with good contacts in the partner countries was clearly useful in setting up the programs despite these difficulties.

As most LHs pointed out, communication was not always easy with the program management of the partner country. Some remarks were made on the lack of transparency and on how the program was managed in the partner countries. This was also reflected in the project reporting covering only the Swiss part, with the exception of China, South Africa, and Russia. In these countries the Swiss report also included a report on the work and finances of the part of the project conducted in the partner country. Some respondents also pointed out differences between programs working and effectiveness of the joint committees.

There were also clear differences between individual programs. In Russia, cooperation had been managed by each individual university participating, as there is no official cooperation partner. In the case of Chile, the calls for Swiss and Chilean partners were separated and launched at different times. While in Brazil, some JRP recipients signaled that administrative processes on the Brazilian side were quite difficult in the first batch of projects (this seems to have improved since then).

The availability of funding in the partner countries was also pointed out as an issue by some of the survey respondents. It appeared that the idea of the partner country contributing an equivalent amount of funding was interpreted differently by each country (depending on different costs levels and practices in research funding). It seems that there was no general overview/control of how much funding the partner research team would eventually receive and some JRP recipients signaled cases where the partner did not receive funding at all (e.g. in the case of Russia). This might not be, however, a major problem in terms of research collaboration as stated by one survey respondent:

“For us everything was ok. The only weird thing was that I don’t know how much money my partner got...but this is in fact not a problem because the partner has done the job.”

Discussion. It is concluded that these issues are rather normal in bilateral cooperation programs with emerging countries and that the current set-up of the bilateral programs was well adapted to pragmatically address them. Also, at the political level in most partner countries, Switzerland is one among many potential cooperation partners and thus does not necessarily receive a high level of priority against larger countries and the European Union. However, the high international position of Swiss research helped manage these problems. Groups in partner countries are strongly motivated to cooperate with Switzerland even if their funding and administrative situation is not fully satisfactory (as the Russian program shows).

While it would be wrong to base the selection of countries only on cooperation, nevertheless this factor should be also considered in the setting of future priorities (see further the discussion in chapter 7.2).

5 Program Results and Impacts

The evaluation of programs' results and broader impacts is a key component of a program evaluation. The degree of attainment of the program goals (effectiveness) and the relationships between input and output (efficiency) must be evaluated. However, this task is particularly difficult in research funding programs – as the impacts are difficult to track and in many cases due to the combination of different measures. Moreover, in our specific case, a precise assessment was impossible due to the fact that most of the projects had not yet been concluded (only 7% of the answers to the JRP survey came from concluded projects). This section provides a preliminary analysis of first possible indicators of results based on self-declarations of program participants. A more in-depth impact assessment should be performed in a 2-3 years' time.

5.1 The Profile of Program Participants

It is very interesting to focus on the characteristics of the grant recipients, as these also provide useful information to assess the future impact of the programs.

Joint research projects. JRP grant recipients are in almost all cases professors (78%) or senior researchers (19%) in Swiss universities. This is usual in most SNSF funding schemes. Almost all recipients had received, in the last three years, project funding from the SNSF and more than half of them were active in a project of the European Union (see **Figure 8**). Thus, JRP grant recipients matched the scientific quality standards of the SNSF and were more oriented towards European research collaboration than the average Swiss university professor. This is a very positive sign that bilateral programs focus on high quality international researchers rather than on researchers working specifically with the partner countries.

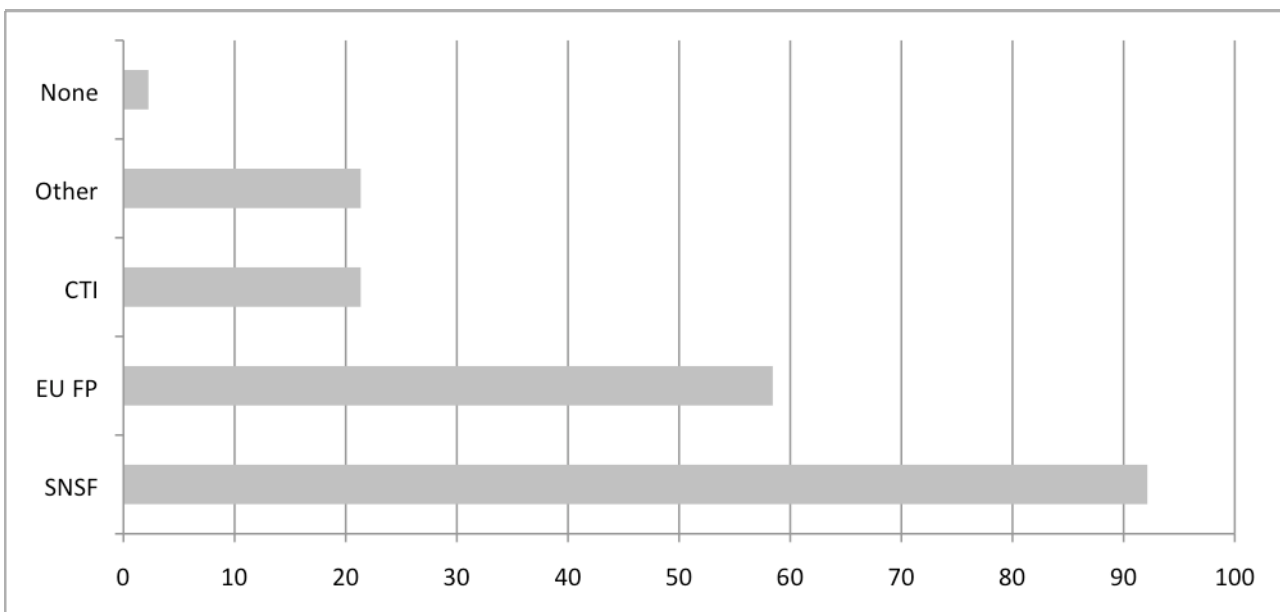


Figure 8. Did you receive funding from any of the following general programs and agencies in the last three years?
(N (JRP)= 92) In: percent of JRP survey respondents.

Reasons for cooperation confirm this pattern: 63% of the JRP survey respondents state that bilateral cooperation was very important or indispensable for their research agenda. They also mentioned reasons for collaborations that included the need to extend the international cooperation network, the quality of research partners abroad, focus on specific research topics related to these countries, and recruitment of talented researchers for their research teams. Most survey

respondents considered that strengthening scientific relationships with partner countries and the international network of Swiss science, as well as attracting talented researchers, were the central goals of bilateral programs and that the current setting of these programs allowed them to be achieved (see **Figure 9**). Promotion of Swiss education – the other objective indicated in the international research strategy – was clearly less important.

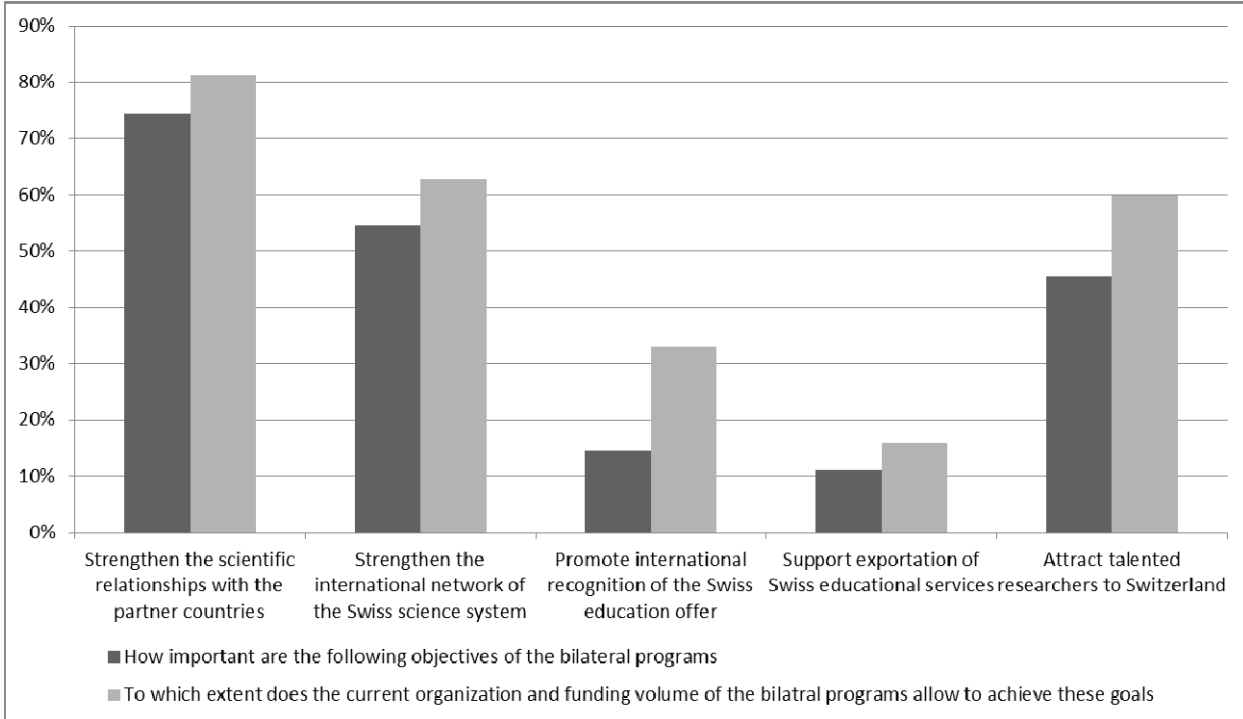


Figure 9. Importance and achievement of objectives of the bilateral programs. (N(JRP) = 92). Importance: Percent of respondents ranking the item as important or very important (on a 5-point scale). Extent: Percent of respondents considering the degree of achievement as high or very high (on a 5-point scale).

Finally, 38% of the JRP respondents had already cooperated with the same partner in previous projects, 19% had already collaborated with the partner country, and 43% of the respondents did not have any previous cooperation experience in that country. While building on existing research collaborations, bilateral programs also managed to substantially enlarge the cooperation to additional Swiss research groups.

Exchange grants. Respondents to the EG survey were divided almost equally into two groups, namely professors and different levels of researchers and PhD students - with a strong prevalence of Ph.D. students among the incoming grants (see **Figure 10**). 49% of the outgoing participants had previous experience with international mobility grants (the incoming not having received that question).

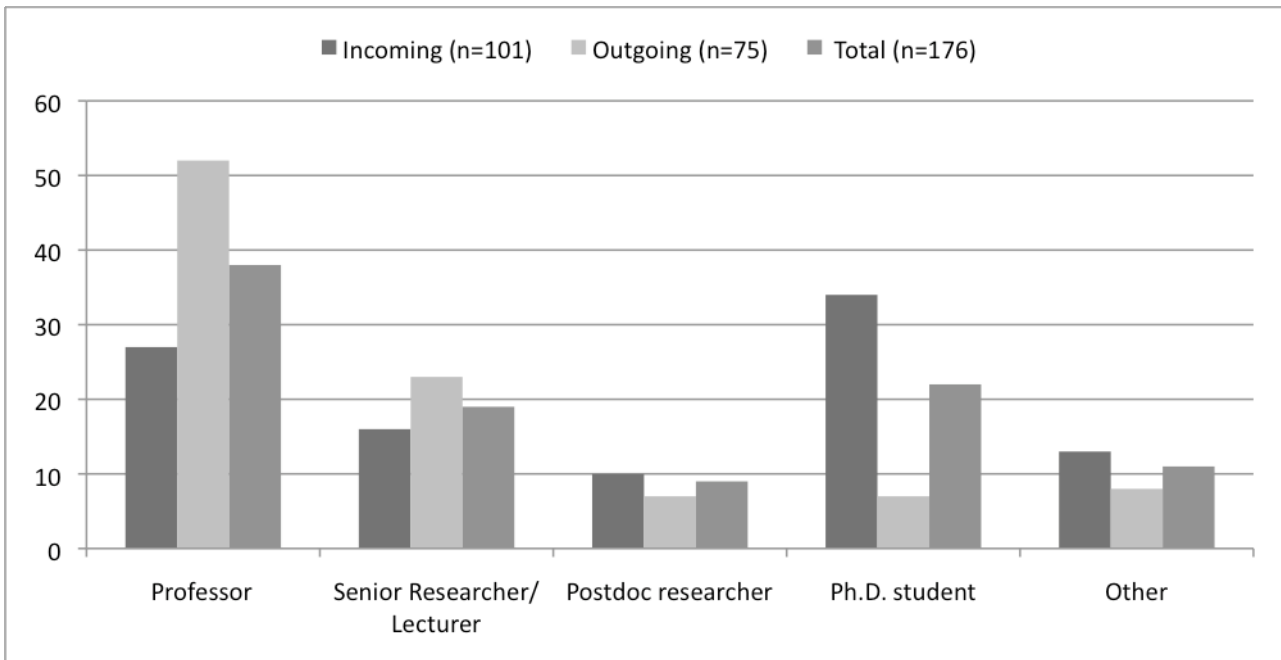


Figure 10. Respondents to EG survey by their position. (N(EG)=176).

It can be seen that, at least in the sample of EG respondents, this instrument was used more with incoming students and faculty from the partner countries than with outgoing Swiss professors and researchers. This likely reflects that Switzerland is a highly attractive hosting country. It could also reflect the limited availability of instruments for supporting mobility in partner countries. This is coherent with the programs' goal of attracting high quality researchers to Switzerland.

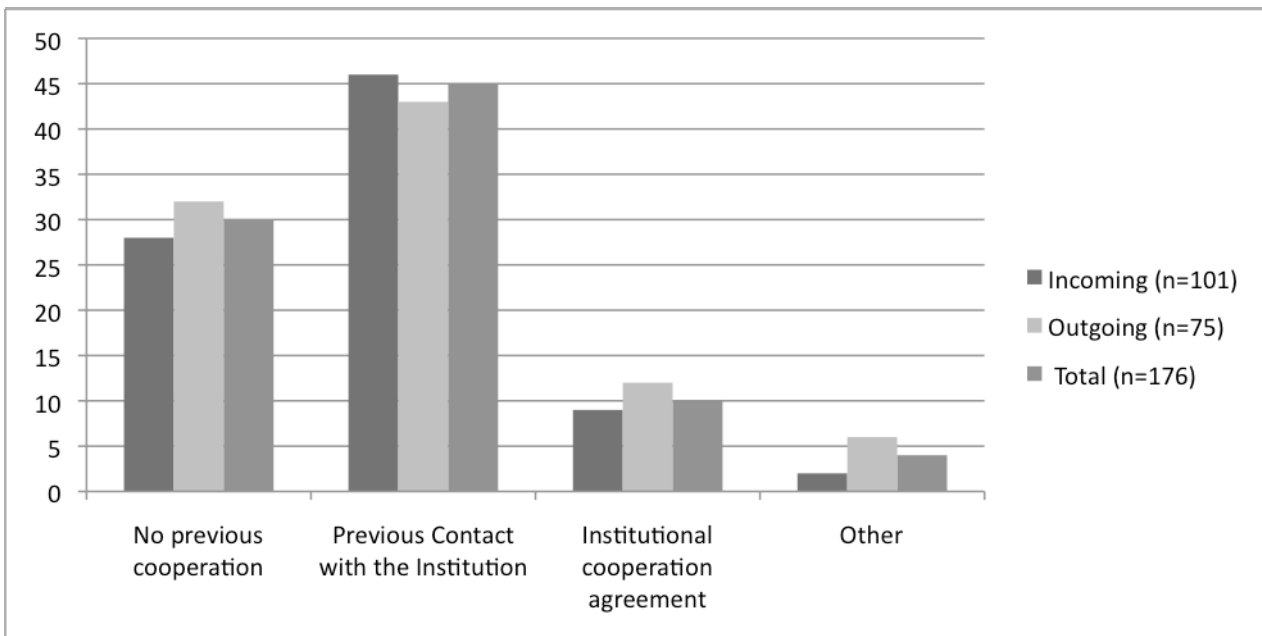


Figure 11. Previous experience of collaboration. (N(EG)=176).

As displayed in **Figure 11**, most cases already had contacts and cooperation before the EG took place. This is an outcome which could be influenced by the wording of the question (as "previous contacts" is a rather open statement).

5.2 Project Results

Joint research projects. Some preliminary indications of direct results produced can be derived from the participant's survey. Namely, half of the survey participants reported to have issued publications about the project and the same amount of researchers plan to do so in the future. Next to planned and completed doctoral thesis and reports (also shown in **Figure 12**), another 40 researchers reported other outcomes than the before mentioned, such as conferences and conference papers, workshops, joint teaching methods, Ph.D. proposals, development of common software, master students exchange, joint field work, patents, etc.

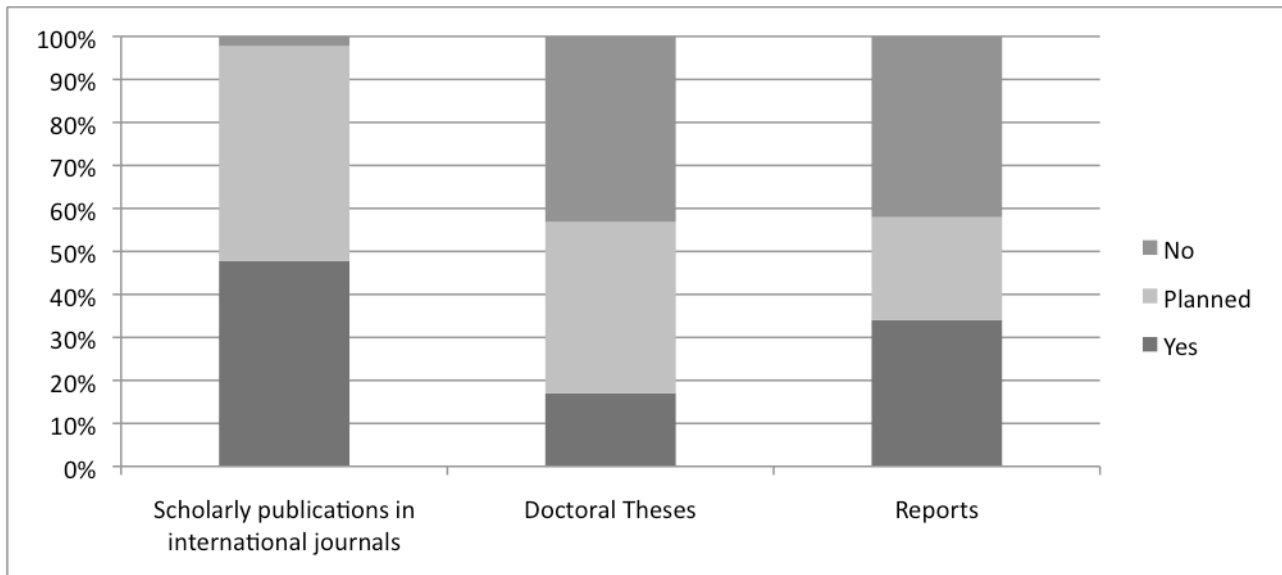


Figure 12. Did the project lead to joint results with the partner? (N (JRP)=92).

While a more detailed assessment of project outputs – including some measures of quality – will be needed, this is a reasonable result because most projects have not yet been concluded. Also, the type of output reflects the orientation of the bilateral programs towards scientific collaboration.

Collaboration in joint research projects was largely limited to joint research activities. In most cases, until now, collaboration did not develop towards more institutional forms like agreements between partner universities, joint curricula, or the hiring of faculty (see **Figure 13**). This was expected as bilateral programs attribute funding to individual researchers and/or groups based on the quality of the research proposed and was not expected that institutional collaboration would be created. Nevertheless, there is a significant share of JRPs that are planning to establish more stable forms of collaborations.

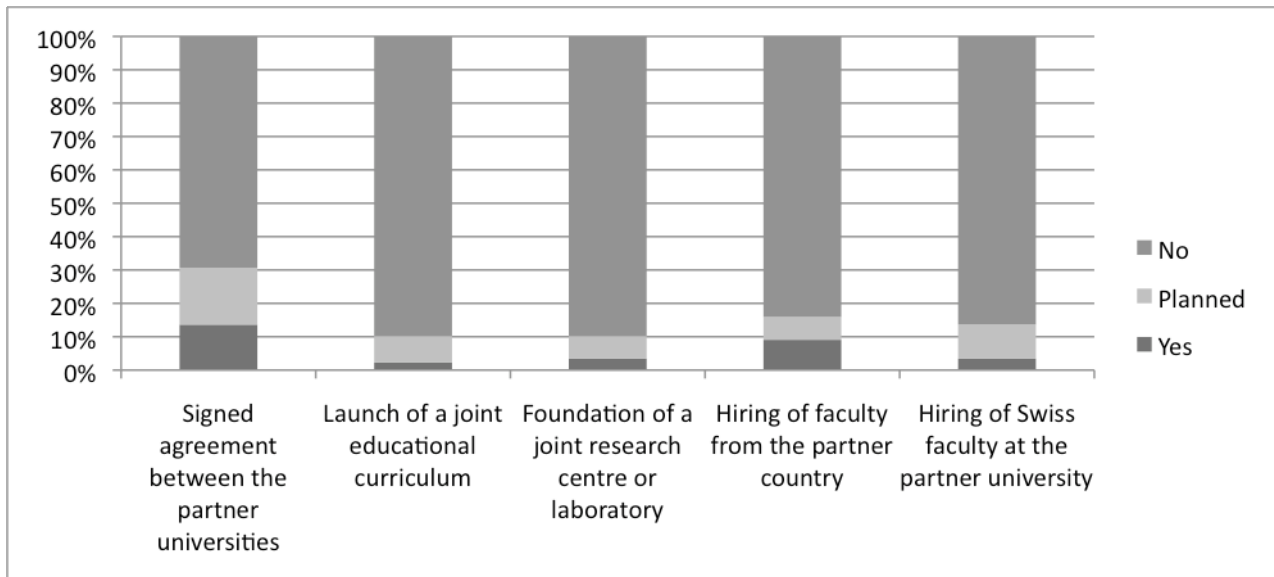


Figure 13. Did the project lead to the development of institutionalized cooperation forms? (N(JRP)=92).

Exchange grants. Concerning exchange grants, results were similar (see **Figure 14**) even if, as expected, there was a stronger focus on scientific publications than on other types of outputs and less outputs were produced until now (about 25% of the EG respondents had already produced a publication from the grant). However, assessing to what extent a specific result could be attributed to the exchange is even more difficult than in the case of JRP.

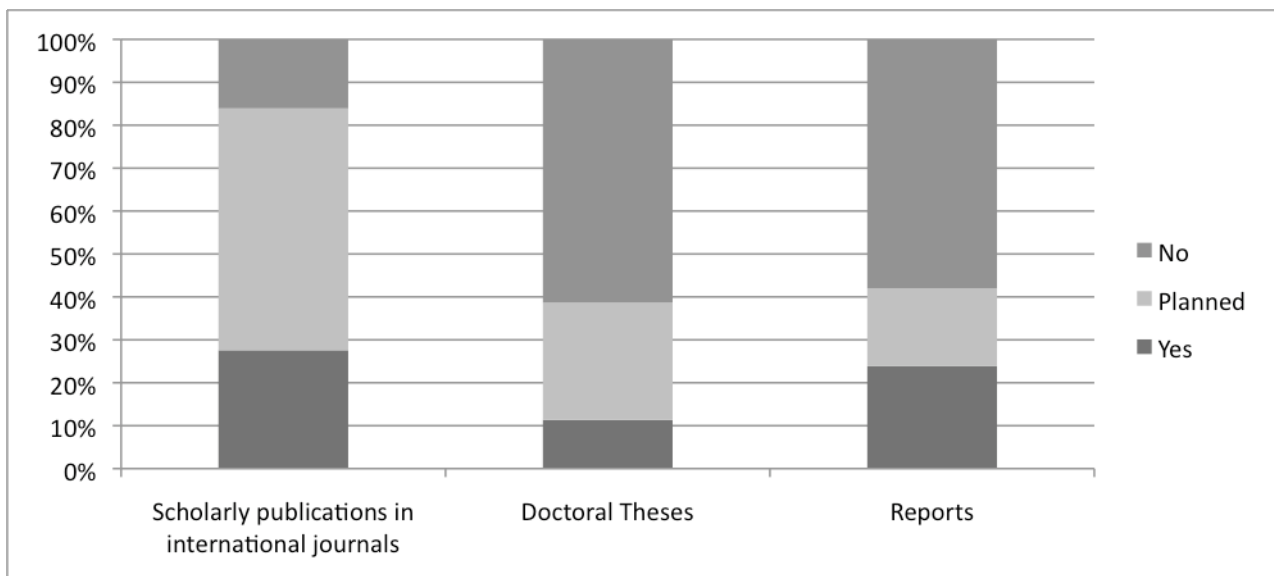


Figure 14. Did the grant lead to joint results with the partner? (N(EG)=176).

Further collaborations that followed exchange grants, mentioned by survey participants, were, for instance, a signed convention between two institutes, new research proposals that were written, the organization of joint conferences, regular faculty exchanges, organization of joint summer schools, etc.

As shown in **Figure 15**, approximately 30% of the exchange grants were followed by a visit in the other direction (e.g. if the grant was for a visiting student in Switzerland, it was followed by a Swiss

visiting the partner abroad). It was noticed that for most programs, a single application could be submitted covering visits in both directions.

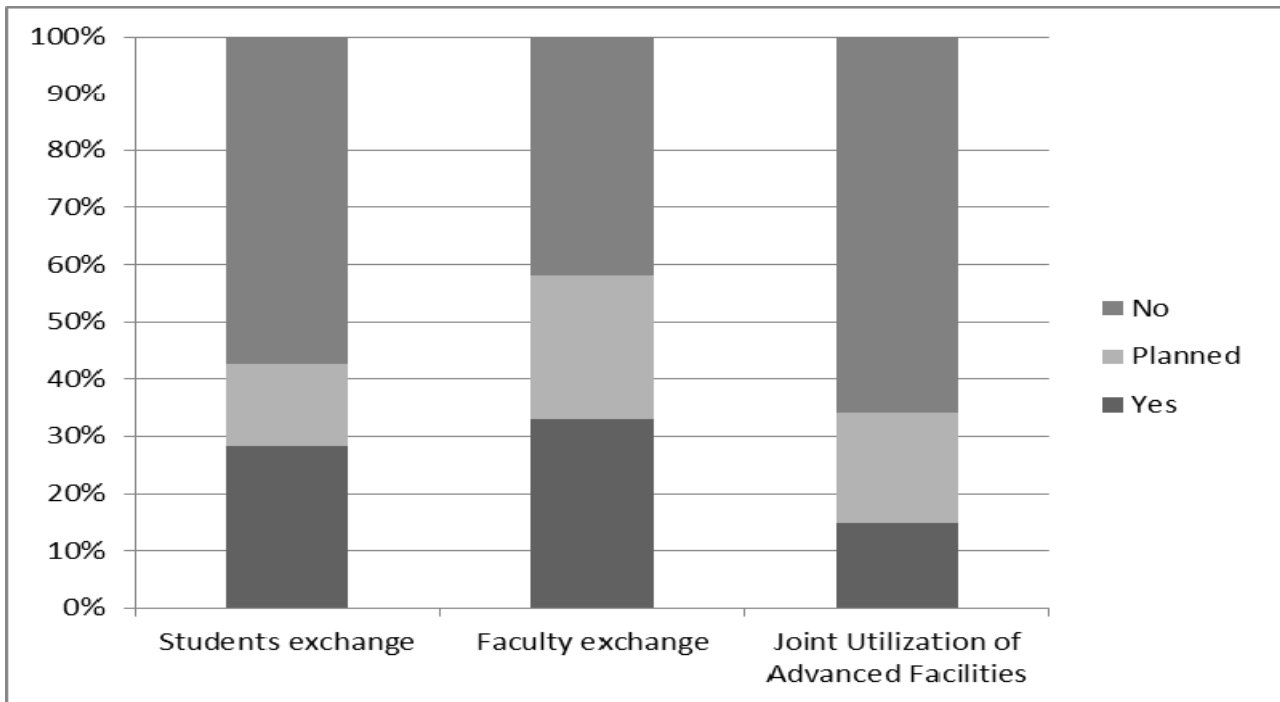


Figure 15. Exchanges in the other direction. Number of EG respondents who declared that the EG was followed by another visit in the opposite direction. (N (EG)=176).

5.3 Future Prospects of Collaboration

Sustainability is an obvious concern of all research funding programs. The objective is that some form of cooperation is maintained after the end of funding. As **Figure 16** displays, this is indeed the case for most of the JRPs: most of them are planning some level of cooperation even if there is no further funding. Moreover, 63% of the JRP respondents state that their JRP partner is part of their (stable) cooperation network or even their most important cooperation partner. The answers to both questions point to the fact that most of the JRPs are in fact based – or developed during the project – on a stable and long-term relationship with the partner abroad. This shows that the bilateral programs are indeed contributing to strengthen scientific relationships on a sustainable basis.

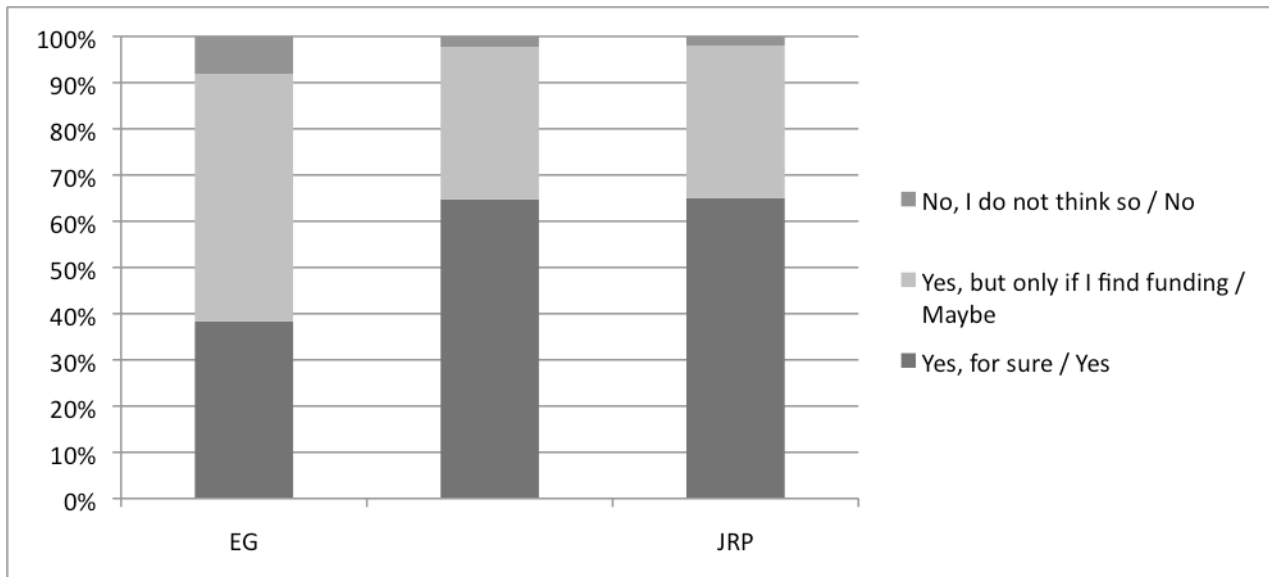


Figure 16. Do you plan future collaborations? (N (EG) = 176, N (JRP) = 92).

However, the situation is different for exchange grants. EGs are light forms of collaboration that can be largely used for testing new collaborations or for ad hoc activities (e.g. jointly writing a scientific publication). It is not surprising then that future exchanges were much more dependent on the availability of funding. Nevertheless, more than 1/3 of the respondents stated that exchanges would continue in any case (independently from the availability of funding).

As Figure 17 shows, about 60% of the respondents to the EG survey stated that the exchange led to further forms of cooperation. Among them were proposals for joint research projects, a cooperation agreement and other forms of cooperation, like future exchanges, light collaboration, or common publications. This confirms the important role of EG in letting more structured forms of cooperation emerge.

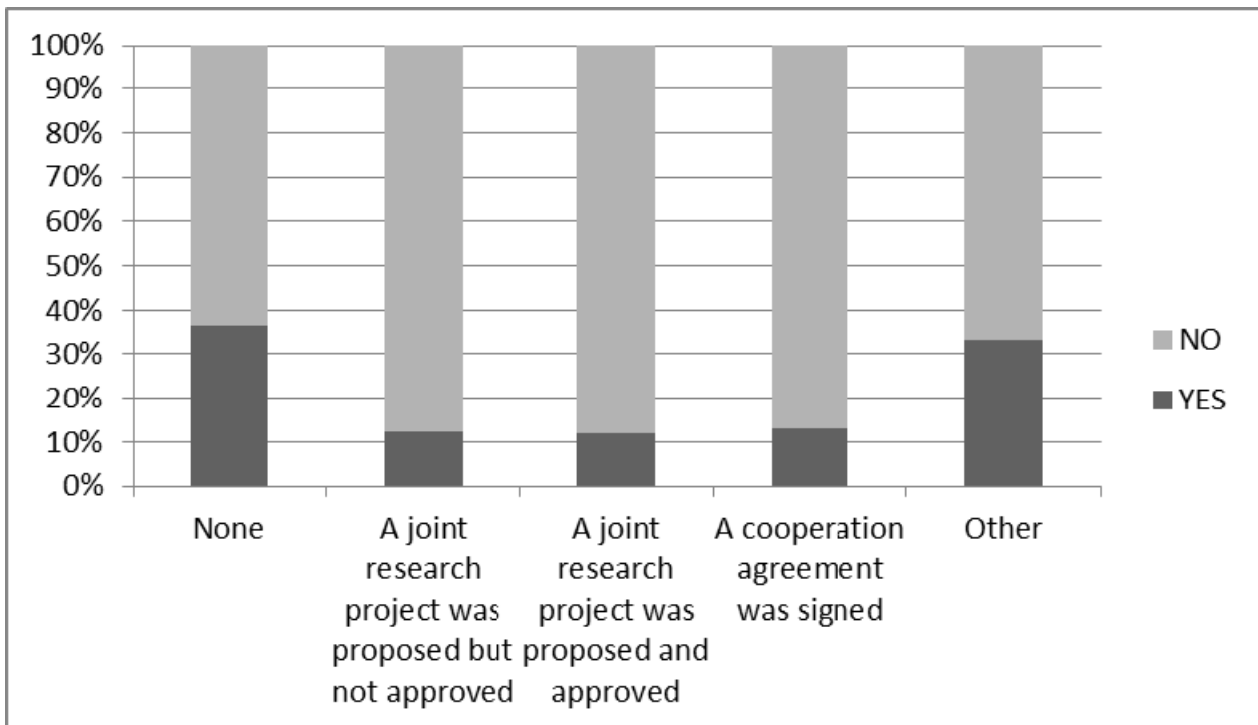


Figure 17. Did the exchange grant lead to further forms of cooperation between the two institutions? (N(EG)=176).

5.4 The Impact on Partners and Partner Countries

This evaluation focused primarily on the Swiss side of bilateral programs. From the information collected, which – with the exception of a few interviews – comes from Swiss respondents, it was difficult to assess the impact of bilateral programs on cooperation partners individually and on partner countries overall. Nevertheless some preliminary indications could be provided.

When JRP participants were asked to rate their perception about the impact of the cooperation on the partner, the argument most often ranked highly important and strengthened the position of the partner in the scientific landscape as well as, to a lesser extent, the provision of additional resources (see **Figure 18**). Since in most of the programs the public/private partnership did not work very well, the low ranking of the local economy is not a surprise.

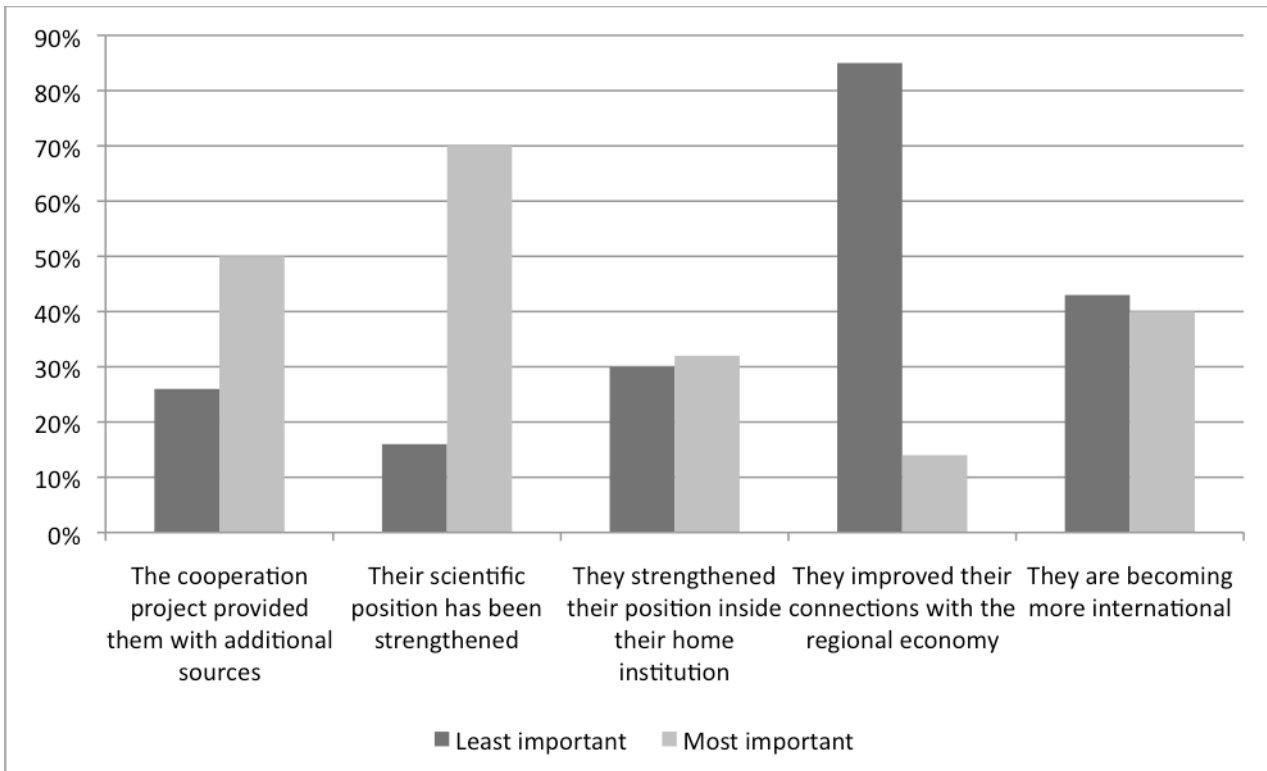


Figure 18. What is your perception about the impact of the cooperation on your partner? (N (JRP)=92).

JRP survey respondents also provided a balanced view of the broader impact of bilateral programs on cooperation within these countries. Namely, 73% of the respondents consider that in these countries, Switzerland was one of the possible partner countries for scientific cooperation and only 23% considered that it is a priority country. However in the case of Brazil, more than half of the survey respondents cooperating with that country attributed it this status.

At the same time, only 7% of the JRP survey respondents considered that the bilateral program did not modify this situation, but 29% said that the interest in cooperation increased strongly. Among the large programs, this share dropped below 20% for South Africa and Russia, and is above 50% for Brazil. These results have to be taken with care, as the absolute numbers are very small.

In sum, bilateral programs are useful and required instruments given the high level of competition for cooperating with these countries. They do have an impact, but, given their size, they cannot fundamentally change the position of Swiss research in the partner countries.

5.5 General Discussion and Summary

These results are very preliminary because most of the projects have not yet finished. However, it is largely confirmed that bilateral programs are very useful instruments in order to promote research collaborations with partner countries. JRPs indeed are oriented towards scientific results – e.g. in terms of scientific publications or doctoral theses. What is more important, many of these collaborations are not only related to the program funding, but also lead to stable collaboration forms as they responded to a real need in the cooperation partners. In turn, exchange grants proved to be useful instruments for light and initial collaboration and, at least according to the self-declarations of respondents, in many cases are leading to further forms of collaborations (e.g. wider-ranging projects, other exchanges). Of course these preliminary indications need to be confirmed in a few years' time with more in-depth assessments once all the projects have been concluded. The interview respondents both in Switzerland and in some partner countries confirm this positive picture. They all emphasize the positive contribution of bilateral programs to research collaboration. Compared to the other goals, promotion of the educational landscape of Switzerland clearly plays a minor role in these programs, at least from the researcher's perspective.

The representatives of universities and leading houses have emphasized the other side of the impact of bilateral programs. At the political and university level, these programs are quite helpful in promoting the Swiss scientific landscape in emerging countries and increase the awareness of the scientific potential of Switzerland. While most institutional cooperation was developed through other means and through direct relationships at the University level, many interview respondents considered that the presence of scientific cooperation programs provided marketing for Swiss universities and thus made their cooperation effort easier. This is extremely important in all partner countries - except perhaps Brazil – as Switzerland is only one among the many potential scientific partner countries where there is strong competition at the political and institutional level.

6 A Look from Outside

Three leading international specialists in the evaluation of research funding programs have been asked to comment on this report and its results. Besides their scholarly competence, they have provided an outside look, allowing this report to go beyond the specificities of the Swiss political and research system. Their feedback has been provided in the integral form below.

Philippe Larédo, Laboratoire Territoires Techniques et Sociétés, University of Paris Est

The evaluation clearly shows that we face classical academic collaborative projects with all that we expect from them: academic outputs. We also know that those who conduct them in Switzerland are well established in the system, being regular recipients of grants by the funding agency (over 90%) and of EU projects (more than 50%). The two aspects are intrinsically linked: the system selects reliable academic actors and obtains academic results. No surprise at all.

One important specific asset is that Swiss partners globally consider these partnerships as important, and there is a significant share of potentially lasting partnerships. The results were far larger than pre-existing collaborations. This is probably the most meaningful result since it answers the political goal: reorient scientific relationships towards key targeted countries. This raises, however, the issue of the reasons to target some countries. The priority list of preferred countries by researchers could have been easily anticipated. The inclusion of China, India, and Japan shows the attractiveness of Asia (within this, the relatively low level of Korea would have significantly changed if programs had a technological orientation). On the other hand, the low attractiveness of Russia and of Latin America mirror the general situation observed in Europe.

However we have little information about the 'other side' of the partnerships: why is it interesting for partners to join? The views on this by Swiss researchers are banal: this is exactly what has been found by evaluations about European partnerships. Furthermore, as we know little about the funding the non-Swiss partner groups have received, it is difficult to get a better idea about motivations and interests.

If the results overall push towards maintaining a set of bilateral programs, they strongly question the organizational setting put in place. In all managerial dimensions (information, submission, selection, information about results, contracts management), the respondents and the authors of the report question the prevailing fragmented system, asking for harmonization and delegation of operations to the Swiss funding agency. Still, the report concludes about keeping the 'leading house' model. Furthermore, the report shows that there is a clear bias by the managing universities towards their own members. One can then understand the very split views expressed by researchers, with a short majority for a 'nationalization' of the process. The reader external to the country thus does not understand the conclusion of the report, he would conclude to the failure of the 'leading house model' and would simply argue toward concentrating all bilateral programs within the Swiss funding agency (which would ease the relations with partners, since most exhibit a similar structure).

A final point: This does not answer the other ambition stated for the policy, that is favoring university-industry collaborations. It is not only a question of adopting a different process. The Swiss policymakers should remember that in most countries (and in all those concerned by the bilateral agreements), funding an industry-university collaboration also requires the funding of participating firms.

Maria Nedeva, Manchester Institute of Innovation Research (MioIR) University of Manchester

First and foremost I would like to emphasize that I find this report very well informed, structured and informative; having read it I learned much about the Swiss bilateral program.

How does Swiss policy, in this area, compare to other European countries?

If this question points towards identifying similarities and differences, I would have to say that Swiss policy is different from the way in which bilateral cooperation is organized in the UK on many counts; in fact there are too many to start listing. This is why I'll content with mentioning that the differences are ones that come from three sources: one, the traditional organization of social life in the UK; two, the perception of the global positioning in the science and innovation system; and three, the size of the national science system.

How bilateral cooperation is organized ought to content with all three. From my understanding of the report in question, Swiss bilateral cooperation is organized so that traditions, positioning, and size are accounted for.

Are there suggestions and critical issues you can identify from your experience?

Not that I can think of; as I mentioned, in my opinion the report has covered all critical issues for Swiss bilateral arrangements.

Do you consider that this is a good approach for a country the size of Switzerland?

Yes, I do consider that this is a good approach for a country like Switzerland (and with the specific organization of research). As to change, I would agree with the authors of the report that this may be necessary at a later stage but the schemes and arrangements have to be afforded time to develop. It may be wise to build more bilateral links with Korea and Japan in the future – this is not only the expressed wish of the scientists but also would correspond to global patterns of scientific excellence.

Emanuela Reale, Institute for Economic Research on Firms and Growth of the National Research Council, Rome.

Bilateral programs confirm their value as means for establishing scientific cooperation between countries, and for exploring new paths of relationships with non-EU countries in curiosity driven research – a factor that could play an important role for social and economic development. At the same time it is encouraging that they cover “a specific niche where there are very few funding opportunities”, thus demonstrating that they are naturally devoted to play a complementary role rather than overlapping with other existing initiatives.

As to the organization, management, and funding decisions, the general impression is that the implementation of funding instruments faced some typical constraints of the academic-like instruments: bias in favor of the institutions hosting the leading house, higher success rate for smaller funding instruments, concentration of funding in few HEIs, low effectiveness of cooperation with private companies, and low participation of Universities of Applied Sciences.

The evaluation and management concentration of funding coming from different sources in a few players paired with the low transparency and information provided to applicants are both elements that can undermine the selection quality and the role of the funding instruments with respect to the country strategy toward internationalization (loss of complementarities and increasing overlapping

with other funding instruments). Where evaluation and selection processes are concerned, further remarks would be useful to deepen the characteristics of the mentioned processes. Can they be investigated; such as composition of the panel, procedures for the selection of the reviewers, where do the external members come from, what type of expertise do they have (academics vs. professionals), and how open is the process and the report judgment produced?

As to the Joint research project, the profile of program participants highlights that they are more often professors or senior researchers at Swiss universities who have a long experience and involvement in SNSF funding instruments. It is rightly considered a positive sign of a good selection of the best researchers, but given the aforementioned drawbacks of opacity in the selection processes, the presence of lock in effects could be also questioned, affecting the program participants.

The impression is that bilateral programs are not tailored to support public-private research collaborations. A set of dedicated incentives for firms, including specific rules for IPR management, and modifications of the selection procedures might be introduced in order to get more effective results in this form of collaboration.

As a whole, the evaluation exercise is well designed, and largely addresses the mandate received, which is precise and limited in scope. It is devoted to assessing the impact of the bilateral research programs in the context of the Swiss National ERI strategy.

In this respect, the information gathered, the methodology used, and the analysis delivered are reliable and consistent; the summary and the recommendations are valuable for program improvement, and feasible in order to better the National ERI strategy.

7 General Discussion

In the following, evaluation results will be discussed and summarized to make recommendations for the future planning and management of the programs (including country and topic selection, the management model, and the development of cooperation with private partners).

7.1 Overall Assessment

Overall, the collected information shows that bilateral programs, as a whole, are perceived as a successful funding tool. The Swiss program management broadly corresponds to the overall standard in Switzerland and the quality of the program participants matches the level of SNSF programs. The first reported results are promising for a successful production of valuable scientific outcome. The chosen management model, based on university leading houses, allowed bilateral programs to respond flexibly and pragmatically to the specific conditions of each partner country. It was conducive to the fact that all programs managed to launch calls and fund projects, even in cases where the relationship with the partner country was not so straightforward.

Both the researchers and the program managers agreed that the programs could create strengthened scientific relationships with the partner countries and, to some extent, to attract talented researchers to Switzerland (a relevant issue given the shortage of researchers in Switzerland in some scientific fields). The impact of these programs should not however be overestimated, especially for the largest countries. The number of research cooperation of Swiss universities with the partner countries by far exceeds the number of projects funded by the bilateral programs. Accordingly, it is considered that for the next funding period (2013-2016), *there are no reasons to fundamentally modify the overall setting of these programs, the choice of countries, and the organizational structure*. At the same time, the discussion presented in chapter 4 of this report points to quite *a number of possible improvements in the program management*, i.e. to increase efficiency, reduce administrative burden, and to achieve a more coherent setting across different programs (bearing in mind that flexibility is a key element of international cooperation).

To summarize the main recommendations in this respect:

- *Instruments and funding conditions*. Larger programs should include just two funding instruments (JRP and EG), smaller programs, especially in the pilot phase, should only include EG. The overall participation and funding rules for these instruments should be generalized for all programs (allowing some customization for specific cases). For exchange grants, a lump sum approach is advised in order to reduce the administrative burden.
- *Information policy*. A common information policy should be defined covering web presence of programs, program documentation, and diffusion of information. The use of a single information instrument towards researchers and university grant offices (e.g. a newsletter for all programs) would be particularly important.
- *Evaluation*. For JRP, the model where the SNSF manages the scientific evaluation and the joint committee then makes the selection should be adopted for all programs. Guidelines should be provided for the evaluation process for all programs, drawing on the LH experience, as well as general expertise at SNSF. Information to applicants needs to be improved.
- *Management*. Individual LH should be avoided as there is need to further develop competences concerning the management submission process, administrative procedures, and financial and scientific reporting, but all these processes should be managed through mySNF (which provides for integrating external partners in some processes, as done with the

university research commissions). Exchange grants could be an exception given their small size.

Creating uniformity among the bilateral programs is important also at the research policy level, as without it, there is a risk they are not perceived as part of an overall strategy and thus their political visibility is reduced.

In terms of the management of the relationships with the LH, it would be recommendable that – before signing a specific contract with each LH – the SER (possibly working together with the SNSF and the LH) develop *more specific rules and framework guidelines for the operations of all bilateral programs to be integrated in individual contracts*. The experiences in the current phase provide good starting points for these tasks.

7.2 Selecting Partner Countries: The Difficult Choice

On a long-term perspective (from 2017 onwards), the selection of partner countries deserves a cautious discussion, as there is an obvious trade-off in the effectiveness of these programs between enlarging participation and concentrating the financial means. The information collected provides important clues on this direction.

- a) First, the current partner countries largely correspond to those, which researchers involved in the programs and universities consider as their most important potential partners abroad – beyond Europe and North America. This also corresponds to the partner countries in other European countries and to general patterns of scientific cooperation, as highlighted by international experts. There have been a few mentions of other interesting countries, including Iran and Turkey (Turkey is an ERA country however), as well as Australia (JRP survey). More than half of the respondents to the JRP survey said, “none” to the question of whether new countries should be added in future planning. 10% of the participants mentioned Australia and the other answers did not provide any particular pattern. They were spread from countries in Latin America (1% each) to Iran or the Balkan States (with 1 or maximum two nominations each). A generic sample of Swiss researchers could have generated different results.
- b) In terms of the relationships between the number of countries and the available funding, the current number of programs seems to be rather large – other European countries have a more focused strategy. While the largest programs achieve some critical mass – both in terms of collaboration and program management – the smaller programs (Chile, Korea, and Japan) are too small, at least if the goal is to support collaborative research.

A possible approach in the long-term perspective – which would align with the goal of providing these programs with a clearer identity and simplifying the management – would be to split the bilateral programs in two distinct instruments:

1. Collaborative research projects (JRP) would be restricted to a small number of countries as well as to selected topics (as calls open to all scientific fields would risk to be oversubscribed).
 2. An exchange grants scheme would be open to a larger number of countries, but still focused on scientifically important countries and open to all scientific domains (to the extent it could be agreed upon with the cooperation partners). The overlap with SNSF international short visits should be carefully considered in this context (a possible scenario would integrate EG in this instrument as a specific funding line).
- c) Program participants would provide clear-cut views on their level of priority for individual countries, which would match their importance in the international scientific landscape. As

shown in **Figure 19** the current bilateral countries can be divided into three groups: the first three countries come immediately after the US and Europe as scientific cooperation partners, China, Japan and India. The next group, three countries that are considered as important, Russia, Korea, and Brazil; and finally, two countries that received generally low scores in terms of the scientific importance, South Africa and Chile.

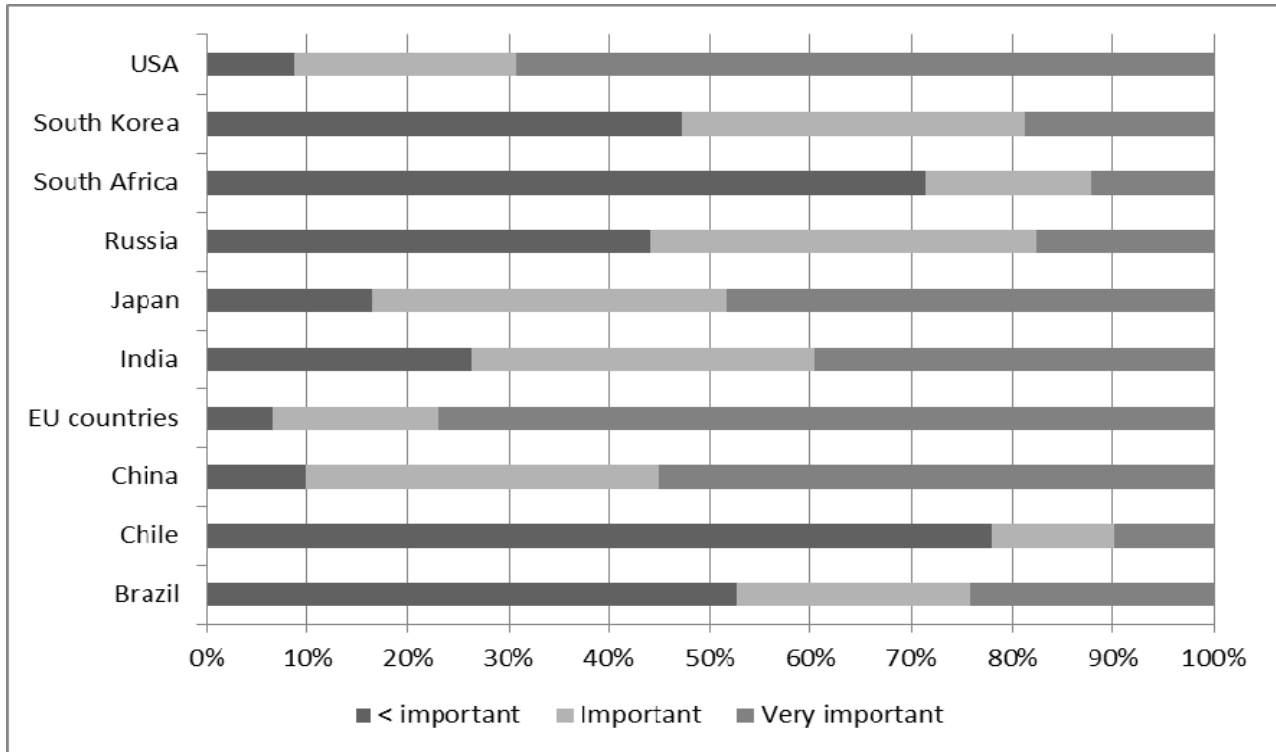


Figure 19. Please rate the importance of the cooperation with the following countries for the development of the Swiss scientific landscape. (N(JRP)=92).

It is important to note that the strong priority attributed to China and India is not significantly influenced by the fact that most of the responses come from the programs within India, China, and Russia. The share of respondents *from other programs* considering the cooperation important or very important is 88% for China and 69% for India, but only 25% for Russia and 20% South Africa.

A very similar result emerges when explicitly asking the priority level of countries in the next phase of bilateral programs (see **Figure 20**). Although respondents tend to systematically provide higher scores for the country with which they are cooperating, it did not have a strong impact on the overall results except in the case of Russia, whose importance score dropped significantly for respondents not participating in that program.

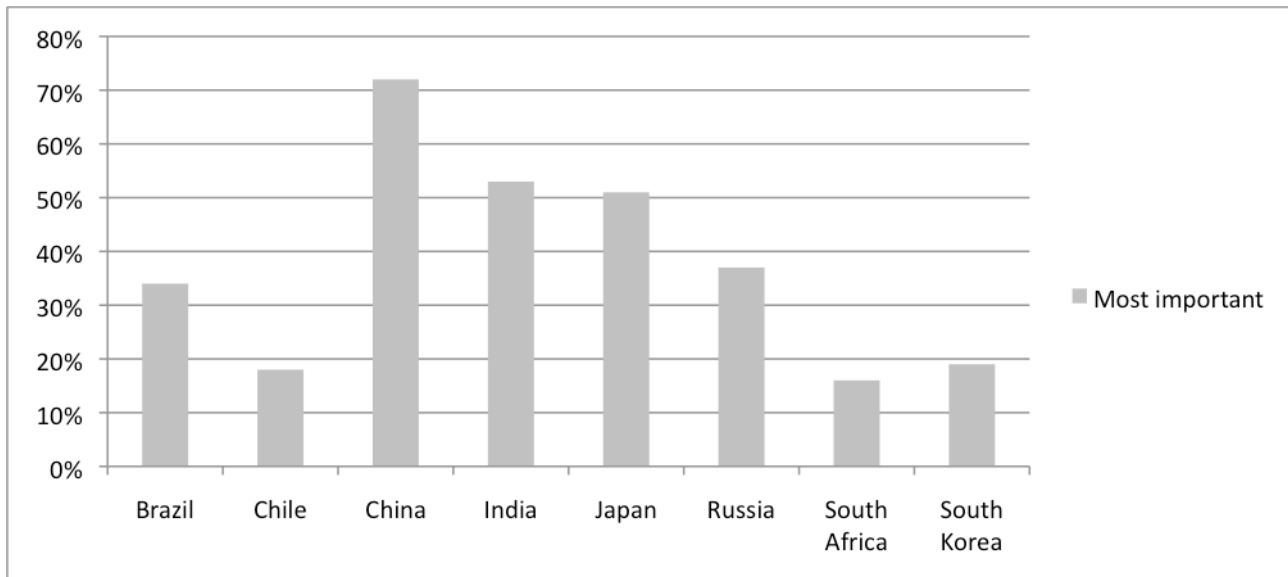


Figure 20: How do you evaluate the level of priority of individual country programs for the phase 2013-2016? (N(JRP)=92) In: percent of respondents ranking the country at the first three places in priority.

With this information, a prioritization of countries, as well as some indications for differentiated strategies, could be derived. Namely, China and India received the highest level of priority and the fact that these are the two largest programs reflects the researcher's interests very well. Japan and (to a lesser extent) Korea were considered by researchers to be important partner countries, given their high level of scientific development. This explains why the program with Japan was heavily oversubscribed. For both, the option of a Lead Agency agreement with the SNSF could be strongly considered, despite existing linguistic barriers.

Concerning the remaining countries, Brazil and Russia were considered as rather important by researchers, but the context of the bilateral program was different. In Brazil's case, Switzerland managed to occupy a specific niche as there were very few countries who had joint funding schemes there, giving the program strong priority. On the contrary, cooperation with Russia should be carefully reassessed as this country is increasingly integrated in the European Research Area and there are a number of available funding schemes at the European level (see chapter 3.2).

Researchers considered South Africa and Chile as the least important countries among those currently in bilateral programs. An assessment confirmed this with the current patterns of scientific collaborations at the global level. While there may be reasons for cooperation with South Africa – it being the most important African country and the Swiss tradition of cooperation with tropical diseases - the continuation of the program with Chile cannot be justified. It was also taken into account that cooperation did not work well in the current phase. For both countries, the new SDC-SNSF fund for research on global issue should be considered as it provides a viable alternative to bilateral programs.

7.3 Discussing the Leading House Model

Overall, there was a general appreciation by all respondents that the LH model was useful in the starting phase of these programs. LH has been active in developing contacts with the partner countries and supporting scientific diplomacy. The LH invested in grooming and promoting the programs and coaching potential applicants on how to participate. This last point should not be overemphasized, as almost all JRP funded applicants also had SNSF projects, and thus were supposed to be well acquainted with how to write proposals and develop good projects (the situation may differ for exchange grants). From the involved universities perspective, hosting a leading house was considered as an advantage in developing their scientific relationships, even in the case of India and China. The number of existing cooperation from EPFL, respectively ETH Zurich largely exceeded those fostered through the programs themselves. The selection of leading houses of universities who already had experience with the partner countries also helped to overcome initial difficulties in institutional cooperation.

While both the interviews and the survey results presented in chapter 4 show that overall the program management worked satisfactorily, some concerns were still mentioned. Initially, the LH model led to a differentiation of rules, evaluation procedures, and contract management that was suboptimal for the applicants. Secondly, even some LH expressed concerns on the possible confusion of roles between the LH role and the function of promoting research at their own university. While there may be different reasons for this, the data displayed a concentration of applications and funded projects to the universities hosting the LH (see chapter 2.3). It was also mentioned that, from the perspective of partner countries, it may be questionable at what extent a LH hosted by a single university would represent the whole national interest. At the same time most LHs strongly argued the advantages of the currently model in terms of flexibility and specificities of the programs.

This discussion is open because among the JRP recipients – which were expected to be more positive than average researchers on the current model – about half of them considered the LH as the best institution to manage bilateral programs, a slightly lower number preferred the SNSF (see **Figure 21**). It can be noted that this appreciation refers to the management role of LH, not to their political function in the relationship with partner countries, which is widely appreciated.

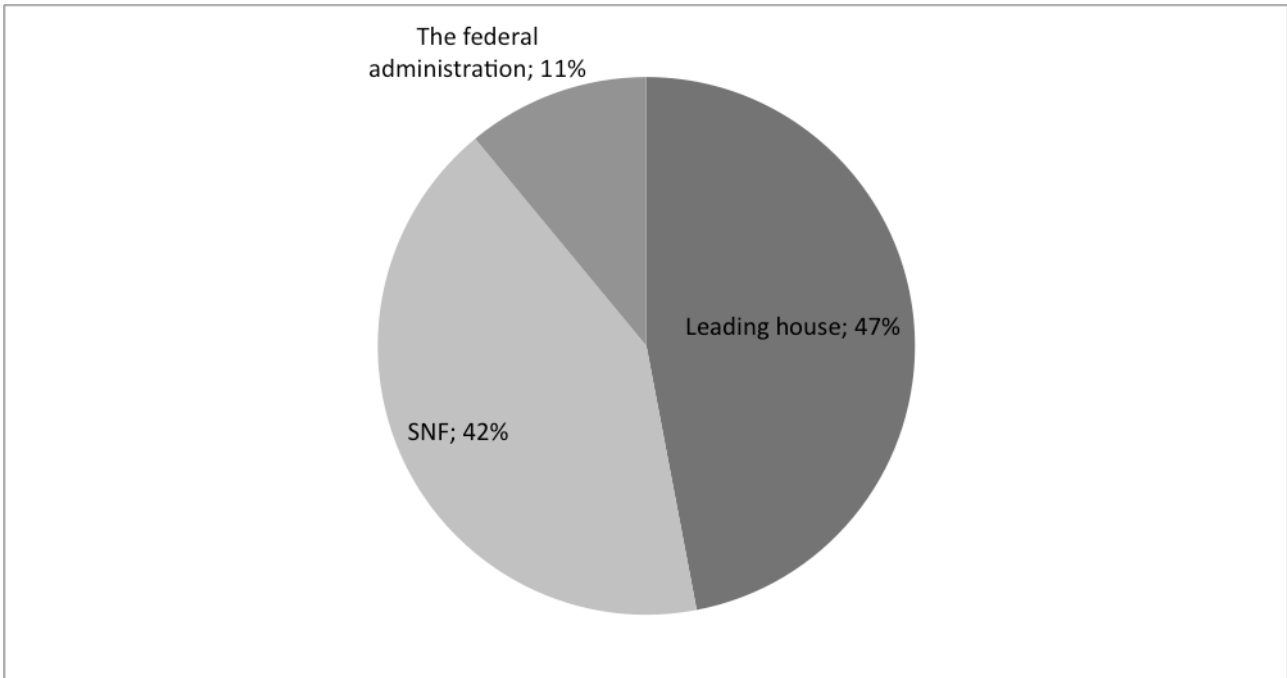


Figure 21. Which institutions would in your opinion best manage the bilateral programs? (N(JRP)=92).

On the other hand, the political setting of bilateral programs is far away from the current orientation of the SNSF funding policy. The SNSF decided not to enter into bilateral programs with the exception of lead agency agreements – from a lack of resources. If the Confederation was to charge the SNSF with specific tasks in international cooperation, foreseen in the reform of the research Law, this could, to some extent open up more possibilities.

The two programs managed jointly by SNSF and SDC – Eastern European cooperation and the new fund on global issues with developing countries – displayed that their partnership models could be designed and implemented, even if both schemes were funded only by Switzerland and thus are not confronted with the additional complexities of joint programs with partner countries.

Discussion. Since this complex situation, the following future step by step strategy is suggested:

- For the next funding period, it is not reasonable to replace the LH model. However, there are very strong reasons to systemize the involvement of the SNSF in all operational tasks. This should include submission of applications through *mySNF* for all programs, adoption of the same guidelines and forms, and evaluation and ranking of proposals, contracts, financial management, and reporting.
- On a long term perspective, a model built on a partnership between SER and SNSF, where the SER would assume the policy functions with possibly integrating representatives of the current leading houses. All tasks related to research funding could then be managed by the SNSF. As the development of such a model would be highly complex and require specific organizational measures at the SNF, negotiations in this direction should only be started early in the 2013-2016 period.

7.4 Developing Cooperation with the Private Sector

As discussed in chapter 2.3, cooperation with the private sector was, among the general policy goals of bilateral programs, the least achieved and attempts made in some programs did not attract much interest as in the Indian private-partnership call and the Chinese internship program. Given the high economic importance of these countries, this situation does not seem very satisfactory.

What emerged from the interviews was that the current setting of bilateral programs is not very well adapted to their tasks. The programs were strongly oriented towards scientific research, both considering the topics, the target applicants and the selection criteria. Moreover, LH in universities (expectedly) seemed to be at an expert level in managing scientific programs rather than in creating contacts with the private sector (even if some LH made real efforts in this direction).

A specific weakness in this respect was the very low involvement of the CTI as a whole in the bilateral programs. This was explained by the fact that CTI was in a process of restructuration in recent years and international activities were transferred to the Federal Office of Professional Education and Technology (OPET), which manages all European initiatives in this area (ERA-NET, Swiss participation to Eureka, etc.).

Discussion. Under these conditions, trying to push the current programs and leading houses toward stronger cooperation with the private sector entails a risk of dispersing efforts and making the overall program profile less coherent (thus jeopardizing a long-term strategy of consolidating these programs at the SNSF). Of course, networking activities with private partners inside the current programs should be continued and reinforced to all possible extents and they can then display impact.

At the same time, extension of international cooperation instruments towards emerging countries should be considered as a specific task of CTI (or OPET) – as already done so by European initiatives like Eureka, Joint Technological Initiatives, and ERA-NETs. Given the huge economic potential of these countries – especially India and China – this task should receive a high level of priority in the coming years. CTI mandate to promote innovation and economic development in Switzerland should also be given high priority.

Cooperation with the current bilateral programs and LH could be well-established through regular exchanges of information and stronger involvement in the program joint committees of CTI is strongly advised.

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ANNEX

ANNEX I: Frequency Table

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Evaluation of the Swiss Bilateral Research Programs

Annex I: Results of the online survey among grant recipients. Frequency Tables.

Lugano, November 2011

By order of the State Secretariat for Education and Research (SER) in collaboration with Mauro Moruzzi and Monica Corrado.

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Survey Sample and Response Rate

Sample Description

Survey Participants	Description	Sample	Number
JRP	Recipients of JRP grants	Census	125*
EG	Recipients of EG grants	Census	334*
All Groups			458

* Information provided by the Leading Houses. Last update 1.10.2011

Sent Emails and Response Rate

	Joint Research Projects (JRP)			Exchange Grants (EG)		
	N Emails provided (n=124)	N answered surveys (n=93)	Response Rate 75%	N Emails provided (n=334)	N answered surveys (n=176)	Response Rate 53%
Brazil	10	7	70%	n.a.**	0	n.a.
Chile	6	3	50%	n.a.**	0	n.a.
China	37	31	84%	88	47	53%
India	22	20	91%	44	24	54%
Japan	9	5	56%	n.a.**	0	n.a.
Russia	24	18	56%	105	53	51%
South Africa	16	8	50%	72	37	52%
South Korea	n.a.*	0	n.a.	25	15	60%
Total	124	92***	74%	334	176	53%

* The South Korea program did not offer JRPs

** The programs with Brazil, Chile and Japan did not offer EG

*** One participant only answered to the very first question in the questionnaire confirming that (s)he had received the questionnaire, and did not go on in the following. Therefore this participant was consequently deleted and thus excluded in the following.

Sample Distribution

Survey Participants

Joint Research Projects (JRP)	92
Exchange Grants (EG)	176
Exchange grants incoming	101
Exchange grants outgoing	75
Total	268

General Information about the Participants

Current employment position

Question: „Which is your current employment position?“

Sample: All participants of the JRP survey and all participants of the EG survey

	JRP	EG		Total (n=176)
	(n=92)	Incoming (n=101)	Outgoing (n=75)	
Share of all respondents (single choice)	in %	in %	in %	in %
Professor	77	27	52	38
Senior Researcher/Lecturer	20	16	23	19
Postdoc researcher	♦	10	7	9
Ph.D. student	♦	34	7	22
Other	3	13	8	11
<i>Missing</i>	<i>0</i>	<i>1</i>	<i>4</i>	<i>2</i>
Total	100	101	101	101

♦ The answer possibilities were not given in this group.

Experience with bilateral research programs

Question to JRP participants:

„Did you receive support from other instruments than Joint Research Projects?“

Question to EG participants:

„For which instrument did you receive funding?“

Sample: All participants of the JRP survey and all participants of the EG survey

	JRP	EG		Total (n=176)
	(n=92)	Incoming (n=101)	Outgoing (n=75)	
Share of all respondents (multiple choice)	in %	in %	in %	in %
Faculty Exchange	61	39	52	44
Student Exchange	11	52	44	48
Joint Utilization of Advanced Facilities	7	10	4	7
Public Private Partnership	5	◆	◆	◆
Other	7	◆	◆	◆
None	10	◆	◆	◆
<i>Missing</i>	0	0	0	0
Total	101	101	100	99

◆ The answer possibilities were not given in this group.

Participation in specific country programs

Question: „To which bilateral programs did you participate?“

Sample: All participants of the JRP survey and all participants of the EG survey

Share of all respondents (multiple choice)	JRP	EG		Total
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	(n=176) in %
Brazil	8	0*	0*	0*
Chile	3	0*	0*	0*
China	34	31	21	27
India	22	13	15	14
Japan	5	0*	0*	0*
Russia	20	38	20	30
South Africa	9	15	29	21
South Korea	0*	4	15	9
<i>Missing</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Total	101	101	100	101

* In Brazil and Chile EG were not part of the funding instruments provided.

Scientific area of the research

Question: „In which scientific area is your research?“

Sample: All participants of the JRP survey and all participants of the EG survey

	JRP	EG		Total (n=176)
	(n=92)	Incoming (n=101)	Outgoing (n=75)	
Share of all respondents (multiple choice)	in %	in %	in %	in %
Engineering	14	19	15	17
Material Sciences and Nanotechnology	14	11	17	14
Renewable Energies and Environment	14	7	5	6
Medical and Health Sciences	21	9	13	11
Life Sciences and Biotechnology	27	20	21	21
Social Sciences and Humanities	5	22	24	23
Other	4*	21	17	19
<i>Missing</i>	0	0	0	0
Total	99	109**	112**	111**

* Other domains mentioned were: Art and design education, eGovernment, urban planning and social sciences, physics and medical device

** Since the question was multiple choice, some additional participant gave some further information about their previous choice in the section “other” (such as architecture, astrophysics, education, chemistry, business administration, earth sciences etc.)

Year of project approval

Question to JRP participants:

„In which year was your project approved?“

Question to EG participants:

„In which year did the exchange take place?“

Sample: All participants of the JRP survey and all participants of the EG survey

	JRP (n=92)	EG		Total (n=176)
Share of all respondents (single choice)	in %	Incoming (n=101) in %	Outgoing (n=75) in %	in %
2008	16	3	1	2
2009	47	12	15	13
2010	35	38	31	35
2011	2	46	44	45
It did not take place yet.	◆	2	8	4
<i>Missing</i>	0	0	1	1
Total	100	101	100	100

◆ The answer possibilities were not given in this group.

Status quo of the project

Question to JRP participants:

„Which is the current status of your project?“

Question to EG participants:

„For how long did you receive the exchange grant?“

Sample: All participants of the JRP survey and all participants of the EG survey

Share of all respondents (single choice)	JRP	EG		Total
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	(n=176) in %
Approved	1	◆	◆	◆
Ongoing	92	◆	◆	◆
Concluded	7	◆	◆	◆
Less than a week	◆	7	9	8
1-3 weeks	◆	11	17	14
1-3 months	◆	40	25	34
4-6 months	◆	21	21	21
1 year	◆	20	19	19
More than one year	◆	2	4	3
<i>Missing</i>	0	0	4	2
Total	100	101	99	101

◆ The question was not asked in this group.

Previous Experience with Funding Instruments

Experience with international mobility

Question: „Did you have other experiences with international mobility in the last years? If so, please specify which...”

Sample: Participants of the EG survey who received a grant to go abroad (outgoing)

Share of all respondents (single choice)	JRP	EG		Total
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	(n=176) in %
Yes	♦	♦	49	49
No	♦	♦	47	47
<i>Missing</i>	♦	♦	4	4
Total	♦	♦	100	100

♦ The question was not asked in this group.

Previous use of other funding instruments 1/2

Question: „Did you receive funding from any of the following general programs and agencies in the last three years?”

Sample: All participants of the JRP survey

	JRP	EG		
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (multiple choice)				
Swiss National Science Foundation	89	◆	◆	◆
Commission for Technology and Innovation	21	◆	◆	◆
EU Framework Programmes	57	◆	◆	◆
Other	26	◆	◆	◆
None	3	◆	◆	◆
<i>Missing</i>	3	◆	◆	◆

◆ The question was not asked in this group.

Previous use of other funding instruments 2/2

Question: „Did you receive funding from the following programs supporting specifically international cooperation with non-European countries in the last three years?”

Sample: All participants of the JRP survey

	JRP (n=92) in %	Incoming (n=101) in %	EG Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (multiple choice)				
Swiss National Science Foundation	16	◆	◆	◆
SDC Funding	5	◆	◆	◆
European and International Funding	1	◆	◆	◆
Other	5	◆	◆	◆
None	69	◆	◆	◆
<i>Missing</i>	3	◆	◆	◆

◆ The question was not asked in this group.

Perception of Bilateral Research Programs and their Goals

The importance of the different program countries

Question: „Please rate the importance of cooperating with the following countries for the development of the Swiss scientific landscape” (1= not important at all – 5 = very important)

Sample: All participants of the JRP survey

JRP (n=92)

	Brazil	Chile	China	EU	India	Japan	Russia	SA	S-K	USA
Rating from 1-5	in %	in %	in %	in %	in %	in %	in %	in %	in %	in %
1 Not important at all	7	14	1	1	5	0	2	11	7	0
2 Hardly important	13	29	2	51	2	3	11	24	8	2
3 Somehow important	33	34	7	16	19	13	30	36	33	7
4 Important	23	12	35	76	34	34	38	16	34	22
5 Very Important	24	10	54	1	39	48	17	12	19	69
<i>Missing</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>3</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>
Total	101	100	100	148	100	99	99	100	102	101

The importance of the different program goals

Question: „How relevant are, in your perception, the main goals of the bilateral research program?” Please rank the following items from 1=least important to 5=most important.

Sample: All participants of the JRP survey

JRP (n=92)

	Strengthen the scientific relationships with partner country	Strengthen the international network of the Swiss science system	Promote international recognition of the Swiss education offer	Support exportation of Swiss educational services	Attract talented researchers to Switzerland
Rating from 1-5	in %	in %	in %	in %	in %
1 Not important at all	9	9	20	53	8
2 Hardly important	8	9	36	22	24
3 Somehow important	9	27	28	12	22
4 Important	20	37	14	3	24
5 Very Important	53	16	0	8	21
<i>Missing</i>	2	2	2	2	2
Total	101	100	100	100	101

The perception of the strategy to achieve these goals

Question: „To which extend does the current organization and funding volume of the bilateral programs allow to achieve these goals?” (not at all, to a minimal extent, to a moderate extent, to a high extent, to a very high extent, I cannot say)

Sample: All participants of the JRP survey

JRP (n=92)

	Strengthe the scientific relationships with partner country	Strengthen the international network of the Swiss sciene system	Promote international recognition of the Swiss education offer	Support exportation of Swiss educational services	Attract talented researchers to Switzerland
Rating from 1-6	in %	in %	in %	in %	in %
1 Not at all	0	3	10	12	5
2 To a minimal extent	4	5	12	23	9
3 To a moderate extent	13	26	36	34	23
4 To a high extent	49	42	22	11	33
5 To a very high extent	27	16	7	2	23
6 I cannot say	4	4	12	16	5
<i>Missing</i>	2	2	2	2	2
Total	99	98	101	100	100

Research Activities and International Cooperation

Overlap with other existing instruments with program country

Question: „To which extent do other instruments, supporting cooperation with your partner country exist?”

Sample: All participants of the JRP survey

	JRP (n=92) in %	Incoming (n=101) in %	EG Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (single choice)				
None	16	◆	◆	◆
Only small scale funding	25	◆	◆	◆
Other funding at Swiss level	10	◆	◆	◆
Other funding at European level	16	◆	◆	◆
I do not know about other funding possibilities	30	◆	◆	◆
<i>Missing</i>	2	◆	◆	◆
Total	99	◆	◆	◆

◆ The question was not asked in this group.

Similarity to other international funding instruments

Question: „To which extent bilateral programs are similar to other international funding initiatives (e.g. concerning the type of project, countries covered, etc.)?”

Sample: All participants of the JRP survey

JRP (n=92)

	SNSF program with developing countries	Swiss Agency for Development and Cooperation (SDC) funding	European collaboration initiatives (e.g. ERA-NET)
Rating from 1-5	in %	in %	in %
1 Very much the same	3	1	1
2 Rather similar	15	12	15
3 Somewhat similar	44	44	48
4 Largely different	27	24	20
5 Completely different	9	17	14
<i>Missing</i>	2	2	2
Total	100	100	100

The relevance of Switzerland in the international research strategy of the partner country 1/2

Question: „To what extent do you perceive that Switzerland is a relevant scientific cooperation partner in your partner country?”

Sample: All participants of the JRP survey

	JRP (n=92) in %	Incoming (n=101) in %	EG Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (single choice)				
Switzerland is not considered important at all	3	◆	◆	◆
Switzerland is one of the many possible partner countries	72	◆	◆	◆
Switzerland is a priorit country for scientif cooperation	23	◆	◆	◆
<i>Missing</i>	2	◆	◆	◆
Total	100	◆	◆	◆

◆ The question was not asked in this group.

The relevance of Switzerland in the international research strategy of the partner country 2/2

Question: „Did the establishment of a bilateral cooperation program modify this situation?”

Sample: All participants of the JRP survey

	JRP (n=92) in %	EG Incoming (n=101) in %	EG Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (single choice)				
Not at all	8	◆	◆	◆
The awareness increased	61	◆	◆	◆
The interest in cooperation strongly increased	28	◆	◆	◆
<i>Missing</i>	3	◆	◆	◆
Total	100	◆	◆	◆

◆ The question was not asked in this group.

The importance of program countries for own research activities 1/2

Question: „Could you rate the importance of the cooperation with the following countries for your research activities?” (not important at all, hardly important, somehow important, important, very important, I cannot say)

Sample: All participants of the JRP survey

JRP (n=92)

	Brazil	Chile	China	EU	India	Japan	Russia	SA	S-K	USA
Rating from 1-5	in %	in %	in %	in %	in %	in %	in %	in %	in %	in %
1 Not important at all	27	36	9	1	17	15	19	27	25	2
2 Hardly important	17	19	3	2	9	3	12	28	14	1
3 Somehow important	12	10	12	2	16	11	17	7	17	7
4 Important	15	5	25	5	20	23	19	10	19	22
5 Very Important	13	8	38	83	25	37	16	8	9	60
6 I cannot say	12	20	10	3	10	8	14	16	13	5
<i>Missing</i>	3	3	3	3	3	3	3	3	3	3
Total	99	101	100	99	100	100	100	99	100	100

The importance of program countries for own research activities 2/2

Question: „How important is your partner in the joint project for your research activities?”

Sample: All participants of the JRP survey

	JRP (n=92) in %	Incoming (n=101) in %	EG Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (single choice)				
It is one among other partners	33	◆	◆	◆
It is part of our core collaboration network	53	◆	◆	◆
It is our most important cooperation partner	10	◆	◆	◆
<i>Missing</i>	4	◆	◆	◆
Total	100	◆	◆	◆

◆ The question was not asked in this group.

Importance of bilateral programs for future research

Question: „For your future research bilateral research cooperation programs are:...”

Sample: All participants of the JRP survey

	JRP (n=92) in %	Incoming (n=101) in %	EG Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (single choice)				
Nice to have	33	◆	◆	◆
Important	54	◆	◆	◆
Indispensable	10	◆	◆	◆
<i>Missing</i>	3	◆	◆	◆
Total	100	◆	◆	◆

◆ The question was not asked in this group.

Participation in the Program

Reasons for participating in the program – JRP participants

Question: “Why did you participate in the program?” Please rank the following reasons in order of their importance to you from 1 least important to 4 most important. Please use each number only once.

Sample: All participants of the JRP survey

JRP (n=92)

	We wished to receive additional financial resources	We already had a cooperation with this project partner	The country is strategically important for our research	The research topics of the program correspond to our main research areas
Ranking from 1-4	in %	in %	in %	in %
1 Least important	19	34	23	21
2	24	11	36	25
3	24	20	23	29
4 Most important	29	32	14	21
<i>Missing</i>	4	4	4	4
Total	100	101	100	100

Reasons for participating in the program – Outgoing EG participants

Question: “Why did you participate in the program?” Please rank the following reasons in order of their importance to you from 1 least important to 4 most important. Please use each number only once.

Sample: Outgoing participants of the EG survey

EG (n=75)

	A stay abroad was important for my academic career	I needed the expertise available at the host institution	My research focusses on the country I visited	I needed to use the technological equipment only available there
Ranking from 1-4	in %	in %	in %	in %
1 Least important	15	8	23	43
2	16	23	28	21
3	25	32	15	16
4 Most important	32	25	23	8
<i>Missing</i>	12	12	12	12
Total	100	100	101	100

Reasons for participating in the program – Incoming EG participants

Question: “Why did you participate in the program?” Please rank the following reasons in order of their importance to you from 1 least important to 4 most important. Please use each number only once.

Sample: Incoming participants of the EG survey

EG (n=101)

	To provide advanced research training to the researcher	To strengthen existing collaboration	To give the researcher the opportunity to learn more about research in Switzerland	To provide our research team with additional expertise from the partner
Ranking from 1-4	in %	in %	in %	in %
1 Least important	28	17	19	21
2	20	18	27	21
3	15	27	23	21
4 Most important	22	24	17	23
<i>Missing</i>	15	15	15	15
Total	100	101	101	101

Previous experience with the partner country

Question: “To which extent did you cooperate in the past with the country of your joint project?”

Sample: All participants of the JRP survey and all participants of the EG survey

	JRP (n=92) in %	Incoming (n=101) in %	EG Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (multiple choice)				
No previous cooperation	41	28	32	30
JRP: Experience with same partner in previous cooperation EG: Previous Contact with the Institution	36	46	43	45
JRP: Experience with different partner in the same country EG: Institutional cooperation agreement	19	9	12	10
Other	◆	2	6	4
<i>Missing</i>	4	9	13	10
Total	100	◆	◆	◆

◆ The question was not asked / does not apply to/ in this group.

Appreciation of the evaluation process – JRP participants

Question: “How would you evaluate the following aspects of the evaluation process for joint research projects?”

Sample: All participants of the JRP survey

JRP (n=92)

	Professionalism of the evaluation	Fairness	Transparency	Time until decision has been taken
Ranking from 1-5	in %	in %	in %	in %
1 Very insufficient	0	0	3	2
2 Rather insufficient	1	2	8	13
3 Fair	25	16	29	22
4 Rather good	42	45	37	46
5 Very good	27	33	19	13
<i>Missing</i>	4	4	4	4
Total	99	100	100	100

Appreciation of the evaluation process – EG participants

Question: “How would you evaluate the following aspects of the evaluation process for exchange grants?”

Sample: All participants of the EG survey

EG (n=176)

	Professionalism of the evaluation	Fairness	Transparency	Time until decision has been taken
Ranking from 1-5	in %	in %	in %	in %
1 Very insufficient	0	0	1	1
2 Rather insufficient	2	1	7	5
3 Fair	17	16	21	14
4 Rather good	40	39	35	36
5 Very good	30	33	24	32
<i>Missing</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>11</i>
Total	100	100	99	99

Appreciation of the program management – JRP participants

Question: “How would you evaluate the following aspects of the program management?” (very insufficient, rather insufficient, fair, rather good, very good)

Sample: All participants of the JRP survey

JRP (n=92)

	Information about the program	Call information and documents	Submission forms	Scientific reporting	Contract and financial management
Ranking from 1-5	in %	in %	in %	in %	in %
1 Very insufficient	0	1	1	0	1
2 Rather insufficient	4	1	1	1	4
3 Fair	24	24	19	19	25
4 Rather good	51	46	50	52	38
5 Very good	16	24	25	24	27
<i>Missing</i>	4	4	4	4	4
Total	99	100	100	100	99

Appreciation of the program management – EG participants

Question: “How would you evaluate the following aspects of the program management?” (very insufficient, rather insufficient, fair, rather good, very good)

Sample: All participants of the EG survey

EG (n=176)

	Information about the program	Call information and documents	Submission forms	Scientific reporting	Contract and financial management
Ranking from 1-5	in %	in %	in %	in %	in %
1 Very insufficient	0	0	0	1	1
2 Rather insufficient	3	4	2	2	2
3 Fair	13	13	15	17	15
4 Rather good	44	40	38	45	34
5 Very good	30	33	35	25	38
<i>Missing</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>11</i>	<i>10</i>
Total	100	100	100	101	100

Appreciation of the management model

Question: “Which institutions would in your opinion best manage the bilateral programs?” Please rank the following items from 1 least preferred to 3 most preferred.

Sample: All participants of the JRP survey

JRP (n=92)

	A leading house	The SNSF	The federal administration
Ranking from 1-3	in %	in %	in %
1 Least preferred	13	21	62
2	38	35	23
3 Most preferred	45	40	11
<i>Missing</i>	<i>4</i>	<i>4</i>	<i>4</i>
Total	100	100	100

Appreciation of the program rules

Question: “To which extent have the program rules been supportive to the collaboration with the project partner?”

Sample: All participants of the JRP survey

Share of all respondents (single choice)	JRP	EG		Total (n=176)
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	
The program rules favored collaboration	50	◆	◆	◆
The program rules are irrelevant	33	◆	◆	◆
The program rules complicated collaboration	11	◆	◆	◆
The program rules made collaboration impossible	1	◆	◆	◆
<i>Missing</i>	4	◆	◆	◆
Total	99	◆	◆	◆

◆ The question was not asked / does not apply to/ in this group.

Possible alternatives to the grant

Question: “If you would not have received the grant...”.

Sample: All participants of the EG survey

Share of all respondents (single choice)	JRP	EG		Total
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	
I would have renounced to the stay. We would not have received an exchange researcher.	◆	58	48	◆
I would have asked support from my university. We would have tried to pay for the host on our own expense.	◆	16	19	◆
I would have financed the stay myself. We would have asked the host to come on his own expense.	◆	6	8	◆
I would have applied for another grant. We would have asked for other grants.	◆	5	8	◆
<i>Missing</i>	◆	15	17	◆
Total	◆	100	100	◆

◆ The question was not asked / does not apply to/ in this group.

Impact and Perspectives

Activities during the grant period

Question: “Which activities did you undertake during the grant period?”

Sample: All participants of the EG survey

Share of all respondents (multiple choice)	JRP	EG		
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	Total (n=176) in %
Participating in scientific workshops	◆	48	44	46
Participating in educational activities	◆	59	31	28
Presenting own work in a seminar	◆	63	47	56
Working together with colleagues on joint publications	◆	61	51	57
Doing fieldwork and/or collecting data	◆	49	26	53
Other	◆	16	9	14
<i>Missing</i>	◆	8	17	12

◆ The question was not asked / does not apply to/ in this group.

Joint results

Question: “Did the project / grant lead to joint results?”

Sample: All participants of the JRP survey and all participants of the EG survey

Share of all respondents (multiple choice)	JRP	EG		
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	Total (n=176) in %
Scholarly publications				
Yes	46	21	29	24
Planned	48	60	42	49
No	2	11	23	14
Doctoral thesis				
Yes	16	8	13	10
Planned	38	29	17	24
No	41	55	52	54
Reports				
Yes	33	26	13	21
Planned	23	13	20	16
No	40	53	49	51
Other				
Yes	29	14	21	17
Planned	12	9	17	13
No	54	69	44	59
<i>Missing</i>	4	8	17	12

Main results of EG

Question: “According to you, what are the main results of your exchange grant?” (not very important, rather not important, not applicable, rather important, very important, other)

Sample: Participants of the EG survey who went abroad

EG (n=75)

	I got empirical material for my research	I developed new theoretical and methodological expertise	I created relationships with high level academics	I improved my CV thanks to the experience abroad
Rating from 1-5	in %	in %	in %	in %
1 Not very important	9	1	0	8
2 Rather not important	4	3	0	16
3 Not applicable	17	13	5	17
4 Rather important	32	40	29	23
5 Very important	20	25	48	19
<i>Missing</i>	17	17	17	17
Total	99	99	99	100

Institutionalized cooperation

Question to JRP participants:

“Did the project lead to the development of institutionalized cooperation forms?”

Question to EG participants:

“Did the exchange grant lead to further forms of cooperation between the two institutions?”

Sample: All participants of the JRP survey and all participants of the EG survey

Share of all respondents (multiple choice)	JRP	EG		
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	Total (n=176) in %
JRP: Signed cooperation agreement				
EG: Signed cooperation agreement				
Yes	13	11	12	11
Planned	16	◆	◆	◆
No	66	80	69	76
JRP: Launch of Joint Educational Agreement				
EG: A joint research project was proposed				
Yes	2	10	12	11
Planned	8	◆	◆	◆
No	86	81	69	76
JRP: Foundation of a joint research centre/laboratory				
EG: A joint research project was approved				
Yes	3	12	12	12
Planned	7	◆	◆	◆
No	86	79	69	75
JRP: Hiring faculty from the partner country/university				
EG: Other				
Yes	9	30	28	29
Planned	7	◆	◆	◆
No	80	61	53	58
JRP: Hiring Swiss faculty at the partner university				
Yes	3	◆	◆	◆
Planned	10	◆	◆	◆
No	83	◆	◆	◆
<i>Missing</i>	4	9	19	13

Further exchanges

Question: “Is somebody from your host institution coming in turn to your home institution?”

Sample: All participants of the EG survey

EG (n=75) – Outgoing participants

	Student exchange: somebody coming from host institution	Faculty exchange: somebody coming from host institution	JUAF
	in %	in %	in %
Yes	33	33	16
Planned	11	20	16
No	39	29	51
<i>Missing</i>	17	17	17
Total	100	99	100

EG (n=101) – Incoming participants

	Student exchange: somebody going to host institution	Faculty exchange: somebody going to host institution	JUAF
	in %	in %	in %
Yes	13	22	10
Planned	13	23	16
No	59	41	59
<i>Missing</i>	15	15	15
Total	100	101	100

Further cooperation

Question to JRP participants:

“Do you plan to continue the cooperation with your partner?”

Question to EG participants:

“Are you planning further visits at your host institution?”

Sample: All participants of the JRP survey and all participants of the EG survey

Share of all respondents (single choice)	JRP	EG		
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	Total (n=176) in %
JRP: Yes EG: Yes, for sure	62	22	49	34
JRP: Maybe EG: Yes, but only if I find funding for my stay	32	63	24	47
JRP: No EG: No, I do not think so	2	7	8	7
<i>Missing</i>	4	8	19	13
Total	100	100	100	101

Impact of the program on own research

Question: “How important is your partner in the joint project for your research activities?”

Sample: All participants of the JRP survey

Share of all respondents (single choice)	JRP	EG		
	(n=92) in %	Incoming (n=101) in %	Outgoing (n=75) in %	Total (n=176) in %
It is one among other partners	33	◆	◆	◆
It is part of our core collaboration network	53	◆	◆	◆
It is our most important cooperation partner	10	◆	◆	◆
<i>Missing</i>	4	◆	◆	◆
Total	100	◆	◆	◆

◆ The question was not asked / does not apply to/ in this group.

Impact of the program on partner

Question: “What is your perception about the impact of the cooperation on your partner?” Please rank the following items from 1=least important to 5= most important.

Sample: All participants of the JRP survey

JRP (n=92)

	The cooperation project provided them with additional resources	Their scientific position has been strengthened	They strengthened their position inside their home institution	They improved their connections with the regional economy	They are becoming more international
Ranking from 1-5	in %	in %	in %	in %	in %
1 Least important	13	4	5	63	10
2	12	11	23	19	31
3	23	13	37	7	16
4	10	39	23	7	17
5 Most important	38	28	8	1	21
<i>Missing</i>	4	4	4	4	4
Total	100	99	100	101	99

The Future of Bilateral Research Programs

Suggestions for future priority countries

Question: “How would you evaluate the level of priority of individual country programs for the next phase of the bilateral programs 2013-2016?” Please rank each country in order of priority going from 1 least important to 8 most important.

Sample: All participants of the JRP survey

JRP (n=92)

	Brazil	Chile	China	India	Japan	Russia	South Africa	South Korea
Ranking from 1-3	in %	in %	in %	in %	in %	in %	in %	in %
1 Least important	5	36	7	0	3	5	25	14
2	15	23	1	4	11	5	22	14
3	14	8	3	10	8	14	20	20
4	13	8	4	13	14	21	8	15
5	15	4	12	17	11	15	7	14
6	14	2	14	25	14	10	7	10
7	11	9	21	16	16	11	4	8
8 Most important	8	7	34	10	19	14	4	1
<i>Missing</i>	4	4	4	4	4	4	4	4
Total	99	101	100	99	100	99	101	100

Need for additional country programs

Question: “Should the bilateral programs be extended to other countries, which additional countries would you include? (max 3)”

Sample: All participants of the JRP survey

	JRP (n=92) in %	Incoming (n=101) in %	EG Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (multiple choice)				
None	65	◆	◆	◆
Australia	10	◆	◆	◆
Bolivia	3	◆	◆	◆
Guatemala	5	◆	◆	◆
Haiti	3	◆	◆	◆
Other	13	◆	◆	◆

◆ The question was not asked in this group.

Suggestions for future priority instruments

Question: “Which level of priority would you attribute to the following instruments in the next phase of the bilateral research programs?” (not important at all, hardly important, somehow important, important, very important)

Sample: All participants of the JRP survey

JRP (n=92)

	IPP*	JRP*	FE*	SE*	JUAF*	PPP*
Ranking from 1-3	in %	in %	in %	in %	in %	in %
1 Not important at all	4	0	1	0	4	13
2 Hardly important	12	0	8	1	16	23
3 Somehow important	36	4	34	13	34	38
4 Important	29	23	37	41	28	14
5 Very important	12	66	14	38	11	5
<i>Missing</i>	7	7	7	7	7	7
Total	100	100	101	100	100	100

* IPP (Institutional Partnership), JRP (Joint Research Project), FE (faculty exchange), SE (student exchange), JUAF (Joint utilization of advanced facilities) PPP (public private partnership)

Suggestions for future priority research areas

Question: “Concerning the priority research areas, the bilateral programs in the future should be:...” “Which research areas would you suggest to add to the priority list of research areas?”

Sample: All participants of the JRP survey

	JRP (n=92) in %	EG		
		Incoming (n=101) in %	Outgoing (n=75) in %	Total (n=176) in %
Share of all respondents (single choice)				
More specific topics	8	♦	♦	♦
Keep same diversity	48	♦	♦	♦
Be open to all fields	38	♦	♦	♦
<i>Missing</i>	7	♦	♦	♦
Total	101	♦	♦	♦

ANNEX II – Statistical Overview

Statistical annex

1.1 Call statistics

Country	Call deadline	Instrument	Submitted	Accepted
India	31.3.2008	Joint Research Projects	61	22
India	31.3.2008	Institutional Partnership Projects	7	4
India	31.3.2008	Research Fellowships	5	5
India	31.3.2008	Joint Utilization of Advanced Facilities	4	3
India	30.11.2008	Research Fellowships	25	11
India	30.11.2008	Joint Utilization of Advanced Facilities	17	9
India	15.10.2009	Faculty Exchange Grants in Social Sciences & Humanities	4	4
India	30.11.2009	Public Private Partnership Projects	3	1
India	30.11.2009	Research Fellowships	42	13
India	30.11.2009	Joint Utilization of Advanced Facilities	28	7
India	30.11.2009	Faculty Exchange Grants in Social Sciences & Humanities	4	4
India	30.11.2010	Research Fellowships	33	15
India	30.11.2010	Joint Utilization of Advanced Facilities	25	7
India	30.11.2010	Faculty Exchange Grants in Social Sciences & Humanities	6	6
Brazil	15.01.2010	Joint Research Projects	20	10
Brazil	15.05.2011	Joint Research Projects	50	12
Russia	30.04.2009	Joint Research Projects	40	24
Russia	October 2008	Exchange grants	35	29
Russia	September 2009	Exchange grants	31	20
Russia	January 2010	Exchange grants	21	16
Russia	October 2010	Exchange grants	19	17
Russia	March 2011	Exchange grants	31	23
Korea	30.09.2009	Exchange grants	28	12
Korea	30.09.2010	Exchange grants	31	13
Chile	30.09.2008	Joint Research Projects	7	4
Japan	01.12.2008	Joint Research Projects	30	4
Japan	15.11.2009	Joint Research Projects	26	5
Japan	29.04.2011	Joint Research Projects	20	(3)
South Africa	As of July 2009	Exchange Grants	73	67
South Africa	31.3.2008	Joint Research Projects	39	16
China	11.7.2008	Joint Research Projects	76	25
China	30.4.2011	Joint Research Projects	35	11
China	15.9.2008	Institutional Partnerships	13	6
China	15.9.2009	Institutional Partnerships	21	12

China	15.9.2010	Institutional Partnerships	28	15
China	15.9.2008	Exchange Grants	5	5
China	16.3.2009	Exchange Grants	23	17
China	15.9.2009	Exchange Grants	27	16
China	15.3.2010	Exchange Grants	80	48
China	31.03.2011	CASS (Special Call to promote collaboration with the Chinese Academy of Social Sciences)	1	1

1.2 Project attributed by institution¹

1.2.1 Institutional Partnerships

	China	India	Total
Berner Fachhochschule	1	0	1
EPFL	5	2	7
ETHZ	8	0	8
Fachhochschule Nordwestschweiz	1	0	1
Fachhochschule SUPSI	1	1	2
Haute Ecole Spécialisée de Suisse occidentale	3	0	3
Paul Scherrer Institute	1	0	1
Universität Basel	0	1	1
Universität Zürich	6	0	6
Universität Lugano	2	0	2
Other	2	0	2
Grand Total	30	4	34

¹ This information is based on data provided by the LH at the time of data collection in September 2011.

1.2.2 Exchange grants

	China	India	Korea	Russia	SA	Total
Berner Fachhochschule	1	0	0	2	0	3
EAWAG	1	0	1	0	0	2
EPFL	10	14	6	17	0	47
ETHZ	22	5	12	27	1	67
Fachhochschule Nordwestschweiz	1	0	0	1	4	6
Fachhochschule SUPSI	0	0	0	4	0	4
Haute Ecole Spécialisée de Suisse occidentale	1	0	0	0	2	3
Hochschule Luzern	0	0	0	1	0	1
Paul Scherrer Institute	4	2	0	1	0	7
Universität Basel	3	1	1	1	29	35
Universität Bern	5	1	2	3	2	13
Universität Fribourg	4	5	0	2	0	11
Universität Genève	7	6	0	29	2	44
Universität Lausanne	3	4	1	13	0	21
Universität Lugano	2	0	0	1	0	3
Universität Luzern	1	0	0	0	3	4
Universität Neuchâtel	0	1	1	2	4	8
Universität Zürich	19	1	1	1	10	32
Zürcher Fachhochschule	1	0	0	0	0	1
Other	2	4	0	4	15	25
Total	87	44	25	109	72	337

1.2.3 Joint research projects

	Brazil	Chile	China	India	Japan	Russia	SA	Grand Total
EAWAG	0	0	2	0	0	1	1	4
EPFL	4	1	8	7	2	9	1	32
ETHZ	2	1	7	1	1	0	2	14
Friedrich Miescher Institut	0	0	0	2	1	0	0	3
Haute Ecole Spécialisée de Suisse occidentale	0	0	0	0	0	0	0	0
Paul Scherrer Institute	0	1	0	0	0	1	0	2
Universität Basel	1	0	0	3	2	2	5	13
Universität Bern	0	1	1	1	0	3	0	6
Universität Fribourg	0	0	0	1	1	0	0	2
Universität Genève	0	0	2	3	1	7	3	16
Universität Lausanne	3	0	2	1	0	0	1	7
Universität Lugano	0	0	0	0	0	0	1	1
Universität Zürich	0	0	3	0	1	0	1	5
Other	0	2	0	0	0	1	1	4
Grand Total	10	6	25	19	9	24	17	110

1.3 Repartition of funding by institution²

1.3.1 Exchange grants

	China	India	Korea	Russia	SA	Grand Total
Berner Fachhochschule	21'650			10'880		32'530
EAWAG	25'000		18'000			43'000
EPFL	110'600	234'800	92'090	141'380		578'870
ETHZ	359'010	90'500	200'200	158'420	9'990	818'120
Fachhochschule Nordwestschweiz	18'700			9'850	13'420	41'970
Fachhochschule SUPSI				36'630		36'630
Haute Ecole Spécialisée de Suisse occidentale	6'400				4'500	10'900
Hochschule Luzern				15'000		15'000
Paul Scherrer Institute	57'900	22'500		7'200		87'600
Universität Basel	65'300	12'050	17'250	9'600	141'347	245'547
Universität Bern	46'100	1'367	18'000	33'800	3'000	102'267
Universität Fribourg	36'500	88'400		14'880		139'780
Universität Genève	98'000	135'600		253'045	7'500	494'145
Universität Lausanne	27'700	67'000	17'000	96'140		207'840
Universität Lugano	24'400			19'680		44'080
Universität Luzern	7'500					7'500
Universität Neuchâtel		6'900	5'400	16'250	33'850	62'400
Universität Zürich	262'040	29'000		9'950	35'200	336'190
Zürcher Fachhochschule	6'000		18'080			24'080
Other	19'500	65'000		27'025	99'922	211'447
Grand Total	1'192'300	753'117	386'020	859'730	348'729	3'539'896

² This information is based on data provided by the LH at the time of data collection in September 2011.

1.3.2 Joint research projects

	Brazil	Chile	China	India	Japan	Russia	SA	Total
EAWAG			444'355			176'745	333'734	954'834
EPFL	665'085	83'000	1'670'458	1'428'415	300'000	1'757'474	250'000	6'154'432
ETHZ	396'310	100'000	1'608'373	476'762	150'000		808'780	3'540'225
Friedrich Miescher Insitut				506'060	150'000			656'060
Haute Ecole Spécialisée de Suisse occidentale								
Paul Scherrer Institute		122'000		277'175		170'234		569'409
Uni Basel	197'699			865'928	300'000	503'775	1'502'920	3'370'322
Uni Bern		120'000	187'000	176'859		715'892		1'199'751
Uni Fribourg				211'348	150'000			361'348
Uni Genève			445'819	641'120	150'000	1'456'969	976'805	3'670'713
Uni Lausanne	578'782		486'724	378'874			254'125	1'698'505
Uni Lugano							349'936	349'936
Uni Zürich			639'337		150'000		320'000	1'109'337
Other				174'876		141'473	203'054	519'403
Grand Total	1'837'876	425'000	5'482'066	5'137'417	1'350'000	4'922'562	4'999'354	24'154'275

ANNEX III – Interview Partners

List of interview partners

Name	Institution
Maio Su Chen	ETHZ
Lü Yonglong	CAS (Chinese Academy of Sciences)
Gerhard Schmitt	ETHZ
Erich Thaler	Universität Basel
Antonio Loprieno	Universität Basel
Jean-Claude Bolay	EPFL
Ursina Roder	EPFL
Yves Flückiger	Universität Genève
Irina Niggli	Universität Genève
Raj Kumar Sharma	Department of Science & Technology (India)
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