

IV EUROSAI/ARABOSAI JOINT CONFERENCE: Modern Challenges for SAIs' Capacity Building

Country Paper

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The role of SAIs in achieving national development goals: Case study on educational and research objectives

1 International and German development goals in the areas of education and research

1.1 The Millennium Development Goals and UN Resolution A/66/209

In the year 2000, the UN member states agreed on millennium development goals to be accomplished by the year 2015 (A/Res/55/2 of 13 September 2000). These include eradicating hunger, universal primary education, gender equality, environmental sustainability and the obligation to ensure good governance.

In 2011, the UN member states agreed that SAIs should be involved in seeking to accomplish national development goals (A/Res/66/209 of 22 December 2011). The SAIs shall promote the efficiency, effectiveness, transparency and accountability of public sector institutions. Such action shall help accomplish national and internationally agreed development goals.

1.2 European development goals: Lisbon Strategy and Europe 2020 Initiative

The European Union also has adopted development goals, for example in the fields of research and development. The European Union's Lisbon Strategy dates from the year 2000 and is designed to help make Europe the most competitive and dynamic knowledge-based economy in the world. In 2002, the EU member states set themselves the sub-target of increasing their annual budget expenditure on research and development (R&D) by lifting it to 3 per cent of gross

domestic product (GDP).

The Europe 2020 Initiative is the successor programme of the Lisbon Strategy. The core objective is seeking to better coordinate both national and European economies. The initiative also addresses the promotion of R&D, environmentally friendly technologies and life-long learning. In the Europe 2020 Initiative, the member states confirmed the 3 per cent target. Apart from that, they agreed on the target of a 40 per cent graduation rate by each age group in the EU.

1.3 National development goals in Germany in the field of education and research

Based on the EU goals, the EU member states set their national targets. So did Germany. Germany has a federal government system encompassing a central government plus 16 federal states. Apart from the central government level, the federal state level has a number of specified responsibilities in fields such as education and research. As a result, expenditure on R&D is incurred by both the Federal Government at national level and Germany's constituent states at regional level. By implication, the accomplishment of national development goals is a task for both government levels. Together with the private sector, the Federal Government and the states agreed on spending 3 per cent of annual GDP on R&D by 2020.

At the education summit held at the end of 2008, the Federal Government and the German states additionally agreed that capital expenditure on education and research was to increase to an annual ratio of 10 per cent of GDP by 2015. Of this, 3 per cent were to be allocated to R&D and 7 per cent to education. Another target agreed at the education summit was a university entrance rate of 40 per cent of each age group.

To implement the national development goals, the Federal Government adopted the €12 billion package as part of the 2010 federal budget. This package calls for additional capital expenditure of €12 billion for up to the year 2013 on top of the relevant expenditure earmarked for that period. Meanwhile, the volume of the package has increased to €13.3 billion. The Federal Government thus intends to contribute its fair share to the 3 per cent and 10 per cent goals.

The relevant government department in charge, the Federal Research Ministry, developed initiatives and programmes designed to achieve the national development goals in the field of education and research and to increase its expenditure accordingly. Below, we present two audit missions that relate to such programmes.

2 German SAI's experience report

2.1 Rising annual research funds do not ensure effective use in key science institutions

2.1.1 The Joint Initiative for Research and Innovation

Germany has a varied R&D landscape. Research is conducted by diverse governmental and non-governmental institutions. The institutions supported by the government include the universities and key institutions (such as Max Planck Society, Fraunhofer Society, Helmholtz Association and the German Research Foundation). In order to reach national R&D goals, the Federal Government entered into the Joint Initiative for Research and Innovation: For the 2011-2015 period, the grants paid to jointly funded research institutions¹ are to rise by 5 per cent annually.

Under the Joint Initiative, both sides also committed themselves to achieving research policy goals. The sound funding perspective is to give the research institutions sufficient leeway for achieving their research objectives.

2.1.2 The Helmholtz Association

One of the key science institutions that receives most of its funding from the Federal Government is the Helmholtz Association. At present, it is the biggest science organisation in Germany and employs a total staff of 33,000. The research association currently consists of 18 techno-scientific and medical-biological research centres that have large research facilities at their disposal and provide a scientific infrastructure for national and international teams.² The Federal Research Ministry considers the mission of the Helmholtz Association to be the development of solutions for urgent questions of science, society and business community. Research departments that cooperate across several centres carry out cutting-edge research in line with a defined strategic programme. These research activities address such issues as securing mobility and the energy supply, preserving the environment for future generations or developing therapies for diseases considered to be incurable until now.³

Major achievements of the Helmholtz Association include the two Nobel Prizes in Physics⁴ and

¹ Fraunhofer-Gesellschaft, Helmholtz-Gesellschaft, Max-Planck-Gesellschaft und Leibniz-Gesellschaft as well as the German Forschungsgemeinschaft as funding organisations

² A list of the English names of the individual research centres is found at <http://www.helmholtz.de/en/>.

³ The following research departments exist: Energy, earth and environment, key technologies, the structure of matter, transport and space, as from 2014: diseases of the nervous system.

⁴ In 2007, the Nobel Prize in physics went to Prof. Dr. P. Grünberg of the Jülich Research Centre. He discovered the Giant Magnetoresistance Effect, which meanwhile is used in practically all writing and reading heads for hard disks because this enormously increases storage capacity.

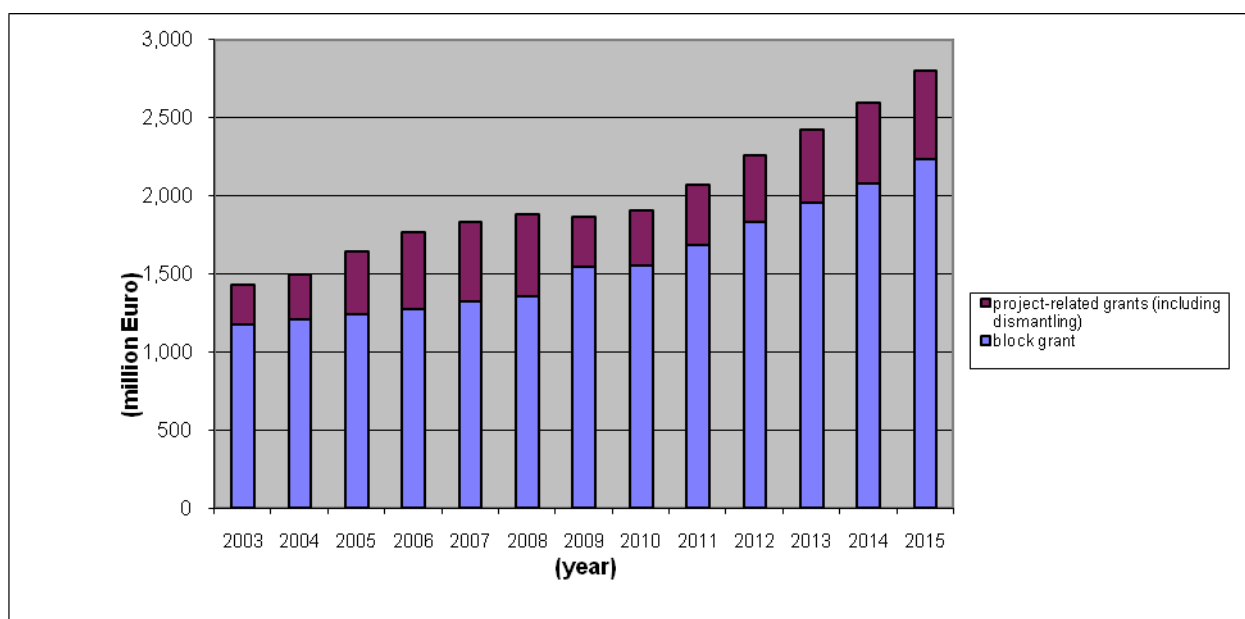
Medicine⁵ won in 2007 and 2008 by scientists employed by Helmholtz centres.

The centres of the Helmholtz Association run more than 3,000 scientific cooperation programmes with all countries across the world. The Federal Research Ministry is responsible for the Helmholtz centres in its capacity as donor of grants and – depending on the legal form of the institutions – as shareholder or founder. The aggregate budget of the research institutions is about €3.8 billion annually. 70per cent of this total refers to joint block grants provided by the Federal Government and the German states. The Federal Government contributes 90per cent and thus the major portion of these public grants, while the centres raise 30per cent of their total budget from public and private third parties. These also cover the funding of concrete projects by the Federal Government (project grants).

2.1.3 Funding increase for the Helmholtz centres by virtue of the Joint Initiative for Research and Innovation

As a consequence of policy priorities set, the Federal Research Ministry continuously increased its grant funding of the Helmholtz centres in order to achieve the national expenditure targets for research and development. It intends to further increase the block grants during the period up to 2015. No decision has been made on future project-related grant funding. Based on the trend observed in recent years, it is reasonable to assume that the annual growth rate will be 10per cent. If this is added to the block grants, this will amount to nearly doubling the total grant funds within a decade. This is in presented in the following table:

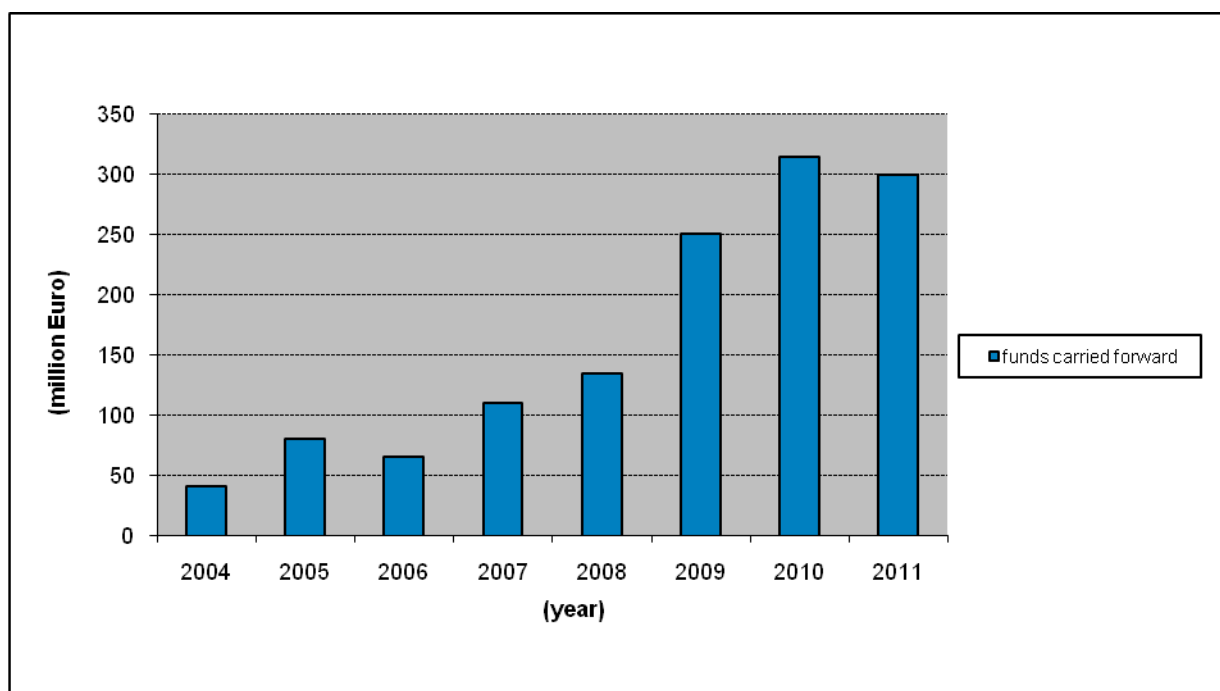
Grant funding of the Helmholtz Association by the Federal Research Ministry



⁵ In 2008, the Nobel Prize in medicine went to Prof. Dr. H. zur Hausen of the German Cancer Research Centre. He discovered the causal relationship between human papilloma viruses and cervical cancer and thus enabled a vaccine against cervical cancer to be developed, which recently has become available in the market.

In the period displayed, the centres had unexpended funds from previous years at their disposal. They were given 20 per cent of the block grants as funds for devolved management. Differing from other grant funds, such ‘devolved’ funds, if not expended immediately, remain at the disposal of the research institutions during subsequent years. Thus, they provide more flexibility to the research institutions. In recent years, the total amount of funds actually carried forward has risen continuously and totalled €300 million at year-end 2011. In detail, the trend presents itself as follows:

Funds of the Helmholtz Association carried forward at year-end



This means that based on national development targets, the funds available to the Helmholtz centres will go on to rise. However, research institutions are apparently unable to spend these funds completely on their research tasks.

2.1.4 Audit by the German SAI

We did audit work at the Helmholtz centres. In particular, we looked into the way in which they allocate the increasing funds to the research programmes. Since 2003, the key steering tool for this has been programme-oriented grant funding. By means of internal competition, this tool is to ensure that the grant funds flow into the most promising research programmes. The core element of the procedure is a scientific evaluation of the research programmes. On this basis, resources are made available for multi-year grant-funding periods.

As early as in 2005, we pointed out that the competitive procedure did not work and that the

Federal Research Ministry failed to monitor the research programmes inadequately. We demanded an evaluation of the fund allocation and controlling procedures. The Federal Research Ministry did not follow our demands and only changed minor procedural details.

In 2011, we once more found that, against the background of soaring research funds, there was practically no competition. The evaluators classified all thirty individual programmes of the Helmholtz Association as excellence research of strategic importance. In the absence of competition, all programmes received additional funding. The controlling systems in place still did not ensure that the Helmholtz Association actually implemented the programme targets.

With continuously rising expenditure budgets, programme-oriented grant funding does not result in the desired competition “of the best minds and talents” for research funds. The lacking ingredient is a genuinely competitive situation which also produces “winners” and “losers”. Rather than that, it cannot even be ruled out that all and every programme is judged as excellent research and receive more funds than actually requested by the centres themselves. Therefore, even comparative evaluations did not lead to sufficient differentiation.

In our opinion, there is a relation between inadequate steering and large funding increases. The 3per cent target leads to considerable growth rates in the research budget. Being Germany’s biggest scientific organisation, the Helmholtz Association is to continuously apply a soaring in volume of grant funds. As the unexpended balances of devolved management funds show, this is difficult. Their existence strongly suggests that the additional grant funding cannot be used for the approved research programmes in a meaningful way. The funds granted to the Helmholtz Association for devolved management actually result in a spending backlog. The Federal Research Ministry needs to look more closely into the reasons for the non-disbursement of funds.

Our core demand was that, in future, an external evaluation of programme-oriented grant funding be carried out. Such an evaluation should explore ways in which the procedure of programme-oriented grant funding can be developed further so as to create genuine competition. Apart from such evaluation, the effectiveness of the controlling system in terms of scientific achievement should be assessed.

Parliament dealt with the audit findings and recommendations put forward by us.⁶Parliament recommended doing external assessments of the systems for evaluating and steering research performance at regular intervals. Given the importance of the Helmholtz Association for Germany’s scientific system, this would also be appropriate for programme-oriented grant

⁶ Our findings and conclusions are dealt with by a parliamentary sub-committee, i.e. the Public Accounts Committee of the German Parliament’s Budget Committee.

funding.Parliament further demanded that the Federal Research Ministry initiate an independent external evaluation of the procedure, which also should address the question of effective competition.⁷

The Federal Research Ministry announced that they would arrange for an external evaluation. The goal of such evaluation was to be to assess both the performance of the system of programme-oriented grant funding and the processes of the Helmholtz Association. In addition, the evaluation was to assess how the devolved financial management regime connected with programme-oriented grant funding had affected the procedure within the Association. The evaluation was a step towards the further development of programme-oriented grant funding.This means that our principal demand has been followed. The Association's internal procedure for allocating the funds to the various research fields will now be evaluated under the criterion of efficiency. Thus, the assumption that more funding would "automatically" enhance research results is put to the test. Consequently, the expenditure target is compared with the substantive goal, i.e. generating a good research performance.

2.2 Higher Education Pact: Goals have been reached but there are nevertheless deficiencies in oversight and steering

2.2.1 The Higher Education Pact: Grant for creating higher education places for first-year students

One national development target in the field of education is the number of higher education entrants. In 2007, the Federal Research Ministry and Germany's constituent states adopted the Higher Education Pact. Under the Pact, they provide extra grants to enable more students to enter higher education courses. The Pact's purpose is to contribute to achieving the target that 40per cent of each age group enrol at higher education institutions.

Under Germany's federal government system, the constituent states are responsible for education and specifically higher education. The Federal Government and the states may enter into agreements to jointly provide grant funding for academic activities in the higher education sector. Therefore, the two sides concluded two agreements for the periods 2007-2010 (phase 1) and 2011-2015 (phase 2). The Federal Research Ministry made €565.7 million available for phase 1 and €3.2 billion for phase 2. It provided for an increase of funding to €4.7 billion. The Ministry intends to extend the Higher Education Pact till the year 2020.

In respect of the number of higher education entrants agreed under the Pact, the Federal Government allocates to the states a lump-sum for each entrant for a study period of four years.

⁷ Resolution adopted on 2 March 2012.

As a matter of principle, the states have to cover half of the grant funds. The states report to the Federal Government annually about the use made of the federal funds and their own funds.

With the federal grants allocated to them, the states take steps to raise the number of higher education entrants. Such programmes may differ among the individual German states. Many of the states have set up programmes of their own in which they integrate the federal grants given under the Higher Education Pact. Some of the states conclude performance agreements with their higher education institutions that stipulate the expansion of capacities and the funding arrangements. Some states fund the introduction of new university courses, the leasing of premises or the procurement of equipment. Thus, the measures adopted under the Higher Education Pact include e.g. the hiring of additional teaching staff, the establishment of junior professorships, advancing the appointment of additional professors, e-learning offers, grants for foreign students or a regular annual increase of the funds for technical infrastructure. These steps are supplemented by marketing campaigns.

2.2.2 Audit by the German SAI

We audited the Higher Education Pact in 2011. We especially addressed the question as to whether the procedure is organised in an efficient and effective way and whether the goal of reaching a predetermined number of new university places has been appropriately set.

In the administrative agreements and fund allocation notices, the Federal Research Ministry did not impose specified obligations on the states concerning the amounts of state funding and the use of the state funds. For instance, the states used the federal funds to provide residential premises. Concerning this, the Federal Research Ministry had doubts as to whether or not these measures were in line with the purpose of the Higher Education Pact. Despite such doubts about the regularity of the use of funds, the Federal Research Ministry's stewardship and oversight function are limited and the government department is unable to provide assurance on the use of the funds. This is attributable to the complex multi-tier arrangements involving the Federal Government, the states and the higher education institutions.

The states regularly report on the number of newly created entrants' places as part of target achievement control. The target figure for new higher education entrants was exceeded early in the first stage. Therefore, the Federal Research Ministry decided to extend the Higher Education Pact to a second stage. However, the Ministry has so far not systematically evaluated the Higher Education Pact, although Parliament had demanded this at programme inception. In our opinion, an evaluation is needed to comply with the performance requirement.

The Ministry should have assessed whether there was a causal relationship between the Higher Education Pact and the increase of the number of higher education entrants. This is so because an evaluation of performance does not only have to address target achievement but also an impact evaluation. Factors contributing to the rising number of entrants irrespective of the Higher Education Pact funding were the doubling of the number of school leavers qualifying for higher education due to a shortening in some states of the duration of secondary education by one year, an increased trend to enrol on a higher education course and the suspension of compulsory military service.

Moreover, the drop-out rate in higher education courses is 28 per cent. Thus, the targeted number of higher education entrants is only one of several aspects that determine the really relevant target for the rate of graduating students.

In addition, the procedure is complex. Given that the Higher Education Pact is a joint federal-state scheme, the Federal Government's accountability for central government expenditure is less clearly defined than desirable. We have severe doubts about the reasonableness of the interaction between the Federal Government and the states provided for by the Pact because it is likely to lead to accountability shortcomings. Currently, the Federal Research Ministry does not have the oversight and steering tools at its disposal needed to ensure that the funds are applied in line with the federal interest. The audit of the Higher Education Pact has revealed that additional funding and focus on a particular field do not necessarily enhance performance.

We have developed the following recommendations:

- It is necessary for the Federal Research Ministry to improve the procedure. The Ministry needs to determine the obligatory share of the states' co-funding not later than by the beginning of the next stage of the Pact in 2015. Moreover, it needs to clearly define the measures that are appropriate for achieving the purpose of the grant funding.
- Before extending the Pact, the Ministry should evaluate it. Programme results evaluation need to go beyond a mere comparison between actual performance and the target set. An evaluation needs to include impact analysis (Were the measures under the Higher Education Pact suitable and causal for target achievement?). Such programme results evaluation should also initiate reflections about whether the specified target set – the creation of additional places for higher education entrants – is still valid.

The audit has not yet been concluded. We therefore cannot yet report on comments received from the Federal Research Ministry or from within Parliament.

3 Theses concerning the SAIs' role in achieving national development goals

In our paper, we presented two cases in which we audited grant funds that were designed to meet national goals. In our opinion, various general lessons can be learnt, that we would like to discuss on the basis of the following theses:

- **National development goals are an issue for all SAIs.**

In the field of education and research, the millennium goals and UN Resolution A/66/209 primarily focus on nations where fundamental goals such as school education for everybody have still to be accomplished. Notwithstanding the standard already achieved, developed countries also set themselves further-reaching development goals. One example for such goals is the following: The Member States of the European Union implement European Union decisions in the field of education and research by setting themselves national development goals. When auditing the resulting development programmes, SAIs of the EU member states face challenges similar to those facing the SAIs of countries where fundamental goals are still to be achieved.

- **Audits should address specific programmes.**

We feel that it is very difficult to look at applicable national development goals in an abstract manner. The ways in which international objectives are translated into specific national goals are essentially matters of policy that are largely outside the scope of the external audit function. Nevertheless, successful audits are possible at the moment when the national development goals are translated into concrete grant funding programmes. As from that moment, public funds that are subject to the audit by SAIs are used for accomplishing the goals.

- **Apart from regularity and compliance, performance (in terms of the three E's) should be explored.**

Of course, it is possible first to audit the regularity of the use of funds under programmes launched to reach national development goals. However, performance is of particular interest when it comes to auditing such programmes – performance in terms of the three E's economy, efficiency and effectiveness. According to our experience, policymakers are strongly concerned that quantifiable targets agreed internationally are met at national level. In countries which still have to achieve fundamental goals, such achievement of measurable targets is often necessary to obtain international financial support. However, compliance with international objectives and the achievement of national development

goals is often a major concern of governments also of more prosperous countries, since this is a matter of prestige. This may lead to a situation where budget funds are expended more generously in order to ensure that national development goals are accomplished. Therefore, it should be a major concern of SAIs to check that beyond reaching certain statistical targets, public sector budget funds are used in a well-targeted and sustainable way.