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Country Reports for the Specific Contract:

Overview of International Science,  
Technology and Innovation cooperation  
between Member States and countries outside  
the EU and the development of a future  
monitoring mechanism

**by the ERAWATCH NETWORK ASBL**

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## Introduction and reader guide

This document contains the country reports of the Austria for the study ‘Overview of International Science, Technology and Innovation cooperation between Member States and countries outside the EU and the development of a future monitoring mechanism’, with Framework Contract Number -151364-2009-A08-BE.

According to the technical specification the objectives of this study are to provide:

- 1. An overview of the EU Member States international STI policies and policy implementation;**
- 2. An analysis of the evolution and trends in the international STI cooperation policies of the EU MS and their implementation over the last 10 years**
- 3. Recommendations for a practical and cost-effective methodology for monitoring the implementation of EU MS STI cooperation policies with international partner countries.**

In order to conduct the first two parts of this study, the project team has conducted a literature study and preliminary screening of international STI policies covering all EU27 in order to come to a selection of the most active EU countries. Based on this screening a selection was made of 12 countries active in STI cooperation with third countries.

These are: Austria, Denmark, Germany, Spain, Finland, France, Italy, Netherlands, Portugal, Sweden, Slovenia, United Kingdom.

For these 12 countries an in-depth analysis was made of STI policies, strategies and programmes based on desk study and interviews carried out by a number of country correspondents in the selected countries, under the guidance of the core team and based on a template that was provided to the correspondents. This report only provides you with the intermediary results of the study of Austria.

For the purpose of the guidelines to the country correspondents we have defined collaboration policies broadly, i.e. it covers:

**All policies that strive to enable, intensify, broaden and/or improve cooperation in science and technology between actors from the EU with those from outside the EU.**  
**The policy to influence international collaboration itself might be purely national, without cooperation of policy makers of different countries (e.g. opening up of national programmes without reciprocity within other countries). It might be based on coordination of national policies to prepare the ground for better international collaboration of researchers, and initiatives whereby national policy makers join forces, up to integrating formerly distinct initiatives into one joint instrument (as in joint calls of ERANET).**

### **Main topics of the country reports**

We have asked the correspondents to:

Conduct an in-depth analysis of STI policies, strategies and programmes in the selected country based on collation and analysis of documentation, available databases such as ERAWATCH, and other data and documentation in order to describe trends in international STI collaboration.

Collate the necessary data and conduct interviews with 3-5 key actors in the selected country to update and validate the data and to get a better understanding of the

objectives of policies, the anticipated impacts, the monitoring and evaluation systems.

The country analyses identify the leading actors in STI cooperation and combine this with information on STI programmes that target third countries. So, the lead agencies/implementing bodies in each country are identified and an analysis is made of their budgetary expenditures on STI cooperation programmes. This analysis is done on **national**, but in some cases also on **regional** levels. The country analyses give insight into the complexity of the country systems. Moreover, if possible, multilateral international cooperation received attention, as well as innovation agencies and their activities.

The country reports each include the following key topics:

**Relevant background:**

- Overall significance of international STI activities
- General level of international STI activity
- Broader concerns about internationalisation issues (if any).

**Policy issues:**

- Policy objectives and rationales (and their trends over the past 10 years) for international STI collaboration with third countries
- Strategies for int. STI collaboration with third countries
- Role of other policy areas influencing STI cooperation priorities and concerns: (e.g.):
  - Trade
  - Development
  - Policy concerns connected with broad policy areas such as agriculture, environment, etc.
- Responsible actors for formulating these strategies

**Policy implementation:**

- Analysis of policy implementation, addressing:
  - Responsible actors for policy implementation, for each actor:
    - Mission/role (with particular reference to internationalisation activities)
    - Main policies and policy instruments (schemes, agreements, etc (multi- and bilateral)
      - Type of activity, target, thematic priority (if so), overall objective, duration, budget (if applicable). Please provide links/references if available.
- Overall expenditures on international activities

**Trends and patterns:**

- Shift in priorities (thematic areas, modes of activity, target countries, etc.)
- Changes in budgets

**Evaluation and monitoring:**

- Monitoring and evaluation mechanisms in places, specific indicators used.
- Reported effects and impacts including links to reports if available.

# 1. Austria

## 1.1 Relevant Background

### 1.1.1 Overview

International STI cooperation is a key element in the main Austrian RTDI policy, but at present, internationalisation efforts are in general insufficient in terms of scale, scope and financial resource endowment. No shared Internationalisation strategy is yet in place and strategy development until now was fragmented, originating in bits and pieces from different ministries and the Austrian Council for Research and Technological Development (abbr. Austrian Council). This situation, however, is becoming to change, because a new inter-ministerial high-level working group has been installed in March 2012 to formulate a coordinated inter-ministerial RTDI internationalisation strategy until mid 2013 as a follow-up of the governmental and inter-ministerial overall Austrian RTDI strategy which was published in March 2011 (Austrian Government 2011). The rationale for the formation of the inter-ministerial high-level working group on RTDI internationalisation was a decision of the government to find a more coordinated approach towards RTDI internationalisation and to respond both to new environments (emerging economies) and European coordination processes in the field of RTDI internationalisation (SFIC; upcoming EC RTDI internationalisation strategy).

Until now, the most comprehensive strategic approach was presented by the Austrian Ministry of Science and Research (abbr. BMWF) to the Council of Ministers in 2008 (BMWF 2008a). It comprises a European dimension, a neighbourhood dimension, selected bilateral cooperation priorities as well as the insight to make use of multilateral cooperation with third countries. This strategic announcement, however, was not followed up by corresponding substantial implementation measures. Most of the internationalisation instruments in place of the BMWF still lack critical mass.

Although the Austrian Council included a dedicated internationalisation chapter in its RTDI strategy 2020 (published in 2009) (Austrian Council 2009), one can still state that no strategy on extra-EU Internationalisation shared between the main RTDI stakeholders exists in Austria at the moment. As stipulated by the national RTDI strategy (Austrian Government 2011), which was published in March 2011, a future formalised internationalisation strategy should include both the European as well as the extra-EU Dimension.

### 1.1.2 General level of international STI activity

Like many small but open European economies, Austria has a high level of R&D internationalisation. Austria's main focus, however, is intra-European. While in the 1990s extra-EU internationalisation efforts were directed towards the neighbouring

former communist countries, which are now all members of the EU, the emphasis have shifted in the 2000s towards the West Balkan Countries (WBC), where Austrian internationalisation policies in science, technology and innovation (abbr. STI) gained high reputation. Other traditional main 3<sup>rd</sup> partner countries are the USA, Switzerland and the Russian Federation. In recent years more attention has increasingly been directed towards China. In addition, Austria employs STI cooperation with many other countries at different level of formalisation, size and scope. Least attention is directed towards Africa, Caribbean and South America, and the Pacific area. The key policy drivers include the quest for quality acceleration and excellence (mainly vis-à-vis EU member states, Russia, USA and Switzerland), science diplomacy and development cooperation (mainly vis-à-vis Southeast Europe) and the quest for market access (BRIC).

### 1.1.3 Broader concerns about internationalisation

In Austria STI internationalisation is rather perceived as an opportunity than a threat. Most Austrian RTD programmes are open for participation of researchers from abroad (usually no differentiation between EU or 3<sup>rd</sup> county researchers). In justified cases, international partners can also receive funding. In recent years, however, certain uneasiness appeared that Austria could lose connection to important trends in R&D internationalisation. There are several reasons for this: first of all, it is evident for Austrian RTDI stakeholders, that Austria as a small country neither has the material nor immaterial capacity to partner with all interesting countries, and not even with all those countries, which are actively requesting closer cooperation with Austria. On the other hand, criteria for priority-setting are lacking, and even if they would exist, it is rather unlikely that they would always be applied. By now, a rather erratic approach was employed, often triggered by non-R&D policy arenas, which led to a relatively high number of RTDI initiatives, instruments and agreements with many countries, but very often lacking substance, critical mass and sustainability (Schuch 2006). It has to be noted, however, that such approaches are also to be found at the side of many Austrian partner countries. Nevertheless, low level measures are increasingly considered as not appropriate to capitalise the cooperation potential and to generate the desired effects, but an agreed national strategy stipulating where to direct a better part of resources is still missing. Austria's cautious and resource-limiting approach in establishing a (small) Office for Science and Technology in China might serve as example in this respect. To secure connectivity with important trends in R&D internationalisation, Austria, thus, actively engaged in European policy measures and instruments, such as INCO-NETs and ERA-NETs. Although these participations resulted in a certain visibility and helped to deepen existing contacts and to raise awareness about new potentials, which – like in the case of India or Korea - were often surpassing the level of attention generated by pure bilateral activities, the resources invested in such schemes are generally rather limited too.

Participation of Austrian industry in public international RTDI programmes is usually very low. This, however, does not mean that Austrian industry would not act internationally. On contrary, Austria belongs to the top of European countries in terms of foreign R&D investment from abroad (around 25% of GERD annually) and foreign-owned firms already account for more than 50% of total business R&D in Austria (Dachs et al. 2012). A growing number of companies operating in Austria are also investing in R&D activities abroad (although usually not within public R&D programmes targeting 3<sup>rd</sup> countries). There is a wide belief in Austria that the



domestic benefits of R&D internationalisation activities of companies are at least balancing potential hollowing-out effects. At the same time, there is strong awareness that the main task of public S&T policy towards internationalisation of R&D is to keep the own house clean, i.e. to be an attractive place for conducting R&D and, thus, for attracting R&D inflows from abroad (compare Verbeek and Shapira 2009).

## 1.2 Policy Issues

### 1.2.1 Policy objectives and rationales for international STI collaboration with third countries

Since an agreed national strategy for international STI collaboration is still lacking in Austria at the moment, policy objectives and rationales are varying across the stakeholders. A detailed analysis on the evolvement of internationalisation strategies of the main stakeholders, including their objectives and rationales, is provided in chapter 2.2. At this point of analysis only an aggregate overview is provided by referring to the systematic developed by the CREST working group on R&D internationalisation, which differentiates the main objectives (Sonnenburg et al. 2008) that drive R&D internationalization from an S&T policy perspective into

- the quality acceleration and excellence objective,
- the market and competition objective,
- the resource acquisition objective,
- the cost optimization objective,
- the global or regional development objective,
- the science diplomacy objective.

Although objectives are typically not made explicit in most of the available strategic documents of Austria's RTDI stakeholders, which are referenced in more detail in chapter 2.2, the "excellence" objective was (and still is) the dominant metaphor. The rationale behind the *quality acceleration and excellence objective* is primarily an intrinsic one that assumes that international R&D cooperation improves the domestic science base, leads to faster and improved scientific progress as well as enhanced, or even superior, scientific productivity and is also supportive for the professional advancement of the involved researchers (e.g. through joint publications in acknowledged international journals) (Schuch 2012).

The rationale behind the extrinsic *market and competition objective* is to support the market entry of domestically produced technologies/innovations abroad as well as to support the access *to* and a quick uptake *of* technologies produced abroad within the domestic economy. This rationale can be found in the Austrian Council's strategy (Austrian Council 2009) and is sometimes referred to by representatives of the Austrian Economic Chamber, the Austrian Ministry of Transport, Innovation and Technology (BMVIT) and the Austrian Ministry of Economy, Family and Youth (BMWFJ). It is, however, not yet comprehensively substantiated through targeted policies and instruments. By now, the focus in Austria is rather one-sided on attracting FDIs in R&D from abroad and to create a supportive business environment in the country (also through provision of subsidies and a competitive domestic R&D base) to develop international business relations outgoing from Austria. A strong emphasis in this respect is on export enhancement instruments and activities.

The rationale behind the *resource acquisition objective* overlaps partly with the two major objectives mentioned before. The access to information, knowledge, technology and expertise as well as to singular equipment/facilities and materials is in the focus. But resource acquisition is not limited to different codified and tacit dimensions of technology transfer; but extends to brain gain, gaining of solvent students and increasingly also gaining research funds from abroad or from multilateral or international sources (Schuch 2012). The “*access*” dimension is explicitly mentioned in the internationalisation approach of the Austrian Ministry of Science and Research (BWF), announced to the Council of Ministers in 2008, while the “*gaining*” dimension of this rationale (in terms of gaining brains and resources) can be found in strategic papers of major research organisations (e.g. Austrian universities).

The *cost optimization objective* from a public S&T policy focus does not primarily mean to use cost arbitrages of other countries (e.g. lower wages abroad) as might be an argument of the business sector, but rather focuses on cost sharing approaches to create critical mass in a certain S&T arena, e.g. to establish large scale research infrastructures; and it also includes the rational of risk sharing (Schuch 2012). This rational is not often mentioned in relevant policy discussions in Austria, but Austria contributes to a number of international organisations and infrastructures:

In 2008 Austria contributed €78.665m to international organisations and agreements relevant for RTDI, out of which the

- BMVIT earmarked in 2008 in total €39.4m.; mostly for ESA;
- BWF appropriated in total € 20.6m; mostly for CERN but also 1.9m for EMBL, 1m for mid-term weather forecast etc.;
- BMeIA1 contributed in 2008 in total 5.7m out of which 2.8m were allocated to IAEA and 2.3m to UNESCO;
- Other ministries - each less than 4m in 2008 – contributed to different international organisations such as WHO, FAO, OECD and ILO.

The assumption behind the *global or regional development objective* is the comprehension that many risks have no frontiers (e.g. infectious diseases or climate change) or cannot be solved without international cooperation and solidarity (e.g. Millennium Development Goals) and, thus, have to be tackled through international R&D collaboration (e.g. research for development) (Schuch 2012). This rational is fundamental for the (limited) R&D efforts supported by the Austrian Development Agency.

The main rationales underlying the *science diplomacy objective*, which often refers to global challenges and to development cooperation agendas, are to support other policies through R&D cooperation (e.g. non-proliferation of mass destruction weapons through keeping former weapon researchers busy with civilian R&D projects) and, secondly, to promote the own science base abroad in support of other objectives already mentioned above (e.g. to attract ‘brains’ or to promote a general quality trademark like “made in Germany”) (Schuch 2012). This rational is not very developed in Austria, but has increasingly gained in importance with the establishment of the Austrian Agency for International Cooperation in Education and Research on 1 January 2009 (BWF 2008b).

Since around 10 years internationalisation of STI targeting non-EU countries is becoming an issue of S&T policy debate and strategy formulation in Austria. This, however, does not mean that R&D collaboration activities targeting third countries were not employed before. On contrary, most instruments at hand in Austria which are supporting STI internationalisation have already a longer history. Their strategic

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<sup>1</sup> BMEIA: Austrian Ministry of European and International Affairs

importance, however, has changed. Striking examples for this reassessment are the subsequent RTDI strategies published by the Austrian Council for Research and Technological Development. While its previous RTDI strategy for Austria “2010” (which was developed in the early years of the first decade of the new millennium) did not foresee a dedicated chapter on R&D internationalisation (Austrian Council 2005), the new Austrian Council’s RTDI strategy for Austria “2020” corrected this shortcoming and included STI internationalisation as one of eight thematic chapters (Austrian Council 2009). It also introduced a more selective approach differentiating between an intra-European orientation and a truly third country orientation.

In the next paragraphs the major cornerstones and trends towards an internationalisation strategy formulation summarised.

On 26 March 2008 the former science minister Hahn (now Commissioner for regional policy) presented his “*Internationalisierungsoffensive*“ (“internationalisation offensive”) to the Council of Ministers (BMWF 2008a). At that time it was the most comprehensive strategic R&D internationalisation announcement since quite some years. Its objectives were to (Schuch 2008)

- strengthen Austria’s position in the global knowledge society,
- to position Austria as active and strong partner in the European knowledge area (*ERA and EHEA*),
- to establish Austria as central node in research and science with Central-, East and Southeast Europe,
- to safeguard global access of Austrian Higher Education Institutes, research organisations and companies to eminent S&T competencies,
- to contribute to community and international commitments,
- and to utilise RTD capacities to contribute to solving global problems effectively

In this strategic announcement 5 action spaces were distinguished:

- *European Dimension* („political lobbying“; national delegation policy; research funding; initiation- and co-funding of FP projects; safeguarding access to large scale European infrastructures)
- *Neighbourhood Dimension* (Central Europe and Southeast Europe; variety of approaches: lead country, SEE-ERA.NET, joint degrees; good governance support; internships etc.)
- *Bilateral Cooperation with few selected 3rd Countries* (USA, Canada, China, Israel, Russia, India; strategy development for Brazil, Mexico and South Africa; know-how transfer to Pakistan, Vietnam, Thailand)
- *Exploitation of Multilateral Cooperation* (ASEA-Uninet; Eurasia-Pacific-Uninet; INCO- and ERA.NETs; ERASMUS-Mundus)
- *Implementation of Internationally agreed Objectives* (e.g. MDGs; complementary to Federal Ministry of Foreign and European Affairs and Austrian Development Agency; UNIDO Global Chairs; European Programmes with ACP)

The other Austrian Federal Ministries, which have competencies in the field of STI policy, namely the Austrian Federal Ministry of Foreign and European Affairs, the Austrian Federal Ministry of Transport, Innovation and Technology and the Austrian Federal Ministry of Economy, had (and still have) significantly less strategic comprehension and activities. Their RTDI internationalisation rationales are driven by economic considerations, including developing markets for infrastructure technologies (railways, energy supply etc.).

The Austrian Ministry for European and Foreign Affairs (abbr. BMEIA) covers two relevant aspects:

- In its cultural affairs section the focus was (and still is) on a small number of science related events (often in thematic relation to humanities); in addition, this section is also in political charge for the intergovernmental bilateral science and technology agreements (together with the Austrian Federal Ministry of Science and Research, which has the thematic lead in this respect).
- The second aspect concerns Austria's official development assistance (abbr. ODA), where the ministry's implementing agency ADA (Austrian Development Agency) reoriented its activities in the field of research and development in the last couple of years towards
  - the enhancement of scientific capacities in partner countries (through North-South and South-South cooperation enhanced – inter alia - through the new support programme “appear”);
  - the maintenance of the traditionally strong focus on higher education, but – in this context - also to support (applied) research for development activities;
  - more emphasis on support for institution and capacity building (and less emphasis on pure mobility programmes without structural impact<sup>2</sup>);
  - more openness towards exploiting European programmes and initiatives (incl. international ERA-NETs);
  - strengthening relevant scientific capacities in Austria (e.g. funding for a professorship at the Institute for International Development at the University of Vienna).

The Austrian Federal Ministry of Transport, Innovation and Technology (abbr. BMVIT) had (and still has)

- no published internationalisation strategy,
- but a dedicated 3rd country outreach within a few European activities (e.g. Galileo, GMES, COST, ESA),
- and a bilateral 3rd country outreach with focus on China and USA.

Also the Austrian Federal Ministry of Economy, Family and Youth (abbr. BMWFJ) had (and still has)

- no published internationalisation strategy,
- a rather limited 3rd country outreach within European activities (e.g. EUREKA),
- an explicit „*go international*“ foreign trade initiative (with some technology components) launched together with the Austrian Chamber of Economy (abbr. WKÖ),
- and a unilateral 3rd country outreach with focus on Central Europe and Southeast Europe (most prominently organised under its CIR-CE-programme, which became very soon organisationally subsumed under the COIN programme).

Another important step towards the formulation of a STI internationalisation strategy was the CREST S&T policy mix peer review report on Austria, published in 2008, which on one hand appreciated the strong Austrian role towards Southeast Europe, but on the other hand also urged a stronger strategic deliberation

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<sup>2</sup> This gradual shift from individualised capacity building towards more institutionalised capacity building was partly based on the evaluation results of Feiler, L., Jäger, M. und Reiter, W. (2007): Evaluation of the Education Sector of Austria's Development Cooperation and Cooperation with South-East Europe. Wien: 17.1.2007.

concerning the BRIC countries. Both elements, a confirmation of Austria's leading role in S&T towards Southeast Europe, as well as a stronger orientation towards the BRIC countries were consequently taken-up in the Austrian Council's strategy 2020, published in 2009. In the internationalisation chapter the following two strategic guidelines were developed (Austrian Council 2009):

- re-orientation of the tasks of the ministries through upgrading their coordination function (and at the same time reducing their implementation function) and by exploiting European initiatives and instruments (ERA-NETs, INCO-NETs, JTIs etc.), whose identification, however, should be based on clear criteria with added value for Austria;
- Strengthening RTDI cooperation with neighbouring countries, Southeast European countries and a few selected other 3<sup>rd</sup> countries – partly to be approached within international networks - by granting more institutionalised support for research organisations (incl. virtual and physical infrastructures), enhancing cooperation with Austrian ODA for research for development and capacity building activities, making better use of existing support structures abroad (e.g. embassies, foreign trade offices) and by developing new support structures (e.g. science attachées) to support R&D relations to – especially, but not only - BRIC countries, and to align and promote Austria's R&D strengths abroad.

The new impetus for R&D internationalisation towards 3<sup>rd</sup> countries, which could have been expected by the new strategy of the Austrian Council published in 2009 and the announcement of the former minister of science and research to the Council of Ministers in 2008, was not followed-up by substantial implementation measures. At present, internationalisation efforts remain under-critical in terms of scale, scope and financial resource endowment. In the last three to four years only a few new instruments were introduced (like the research for development programme “appear”), but at the same time some established instruments were terminated (like the Austrian Science and Research Liaison Offices in Ljubljana and Sofia which were also targeting the West Balkan countries or the FP project preparation funding). The overall lacking dynamic in the field of international STI policy was not exceptional, but rather symptomatic for the entire field of STI policy making in Austria caused by the aftermath of the financial crisis in 2008, the following economic crisis in 2009, and the budget consolidation efforts introduced as of 2009, which shifted the emphasis on increasing the efficiency of existing measures rather than to develop new measures.

The latest, and probably most important, attempt for a strategic STI internationalisation approach was triggered by the Austrian RTDI strategy, which was launched as a combined effort of the Austrian government in March 2011. Hereunder, a dedicated sub-section on R&D internationalisation was published, which stipulates the following objectives (Austrian Government 2011):

- Development of a fine-tuned international science and research foreign policy by bundling existing measures and by creating appropriate institutional structures;
- Optimal positioning of Austria in the European knowledge area by assuming a shaping role in the formulation of overall European policy on research, technology and innovation;
- Enhancing the Austrian participation in the European funding programmes, e.g. in FPs and European Structural Funds with the goal of further increasing the return ratio;
- Setting-up or expand selective global cooperation with innovation frontrunners such as the USA, selected Asian countries and the emerging BRIC countries;

- Enhancing the cooperation with Central-, Eastern and Southeast European countries.

This should be realised through the following measures (Austrian Government 2011):

- Establishment of a permanent working group - consisting of the relevant ministries - to coordinate and implement an Austrian policy for international science and technology;
- Development of an action plan “*Austria and the European Knowledge Area 2020*” by BMWF and BMVIT through inclusion of relevant ministries and other stakeholders;
- Development of a coherent cooperation strategy for various priority regions: Central-, Eastern- and Southeast Europe, Northern America, Asia and BRIC countries.

As a follow-up of this national RTDI strategy two high-level working groups on R&D internationalisation (one targeting intra-EU cooperation and the other one targeting 3<sup>rd</sup> countries) were installed one year later in March 2012. The objective of each of these working groups is to establish an STI internationalisation strategy until mid 2013. Both groups are working on a dedicated roadmap and are scientifically accompanied by pertinent Austrian research organisations working in this field (AIT and Joanneum Research for the intra-European STI strategy and ZSI and Austrian Institute for International Policy for the extra-European STI strategy). All major stakeholders are included in the working groups, led jointly by BMWF and BMVIT, to define a STI internationalisation strategy targeting 3<sup>rd</sup> countries.

### 1.2.2 Main Stakeholder for STI Internationalisation and their Roles

The major stakeholders in jointly deliberating the STI internationalisation strategy are :

#### Ministries

- **BMWF, the Austrian Federal Ministry of Science and Research**, is the leading actor by governmental competency distribution with an overall focus on science and research (including internationalisation of science and research), with an outreach preponderantly to the public university sector and a few non-university research organisations (most importantly the Austrian Academy of Sciences) and agencies (most importantly the Austrian Science Fund and the Austrian Agency for International Cooperation in Education and Research<sup>3</sup>). BMWF implements a number of intergovernmental science and technology programmes and is actively involved in a number of ERA-NETs and INCO-NETs (logistically and scientifically supported by ZSI).
- **BMVIT, the Austrian Federal Ministry of Transport, Innovation and Technology**, which implements the largest number of RTDI programmes in Austria and which is – together with the BMWFJ - in charge of two important agencies (Austrian Research Promotion Agency FFG and Austrian Economic Service AWS) by now had – compared to BMWF - limited engagement in international STI cooperation with 3<sup>rd</sup> countries. However, it has a number of international cooperation agreements in the field of infrastructure technologies and drives STI policy cooperation with China.

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<sup>3</sup> OeAD GmbH

BMVIT also administers Austria's participation in the COST programme. Both BMWF and BMVIT have a national delegate in SFIC and both ministries are chairing the two working groups on preparing Austria's STI internationalisation strategy (intra- and extra-European dimension).

- Less significant in terms of STI internationalisation towards 3<sup>rd</sup> countries is the **BMWFJ, the Austrian Federal Ministry of Economy, Family and Youth**. It is in charge of a number of domestic RTDI programmes and – together with the BMVIT - of the Austrian Research Promotion Agency FFG and the Austrian Economic Service AWS. BMWFJ has a number of joint economic commissions with 3<sup>rd</sup> countries (at minister's level with Russia and Turkey) as well as working groups and expert committees including senior officials. It also developed the CIR-CE programme<sup>4</sup> to support RTDI cooperation with Central-, Eastern- and Southeast Europe. BMWFJ is also responsible for EUREKA in Austria.
- The fourth important ministry in terms of international STI cooperation is the **BMEIA, the Austrian Ministry for European and International Affairs**. It is – together with the BMWF – in charge for the intergovernmental S&T agreements and has the authority over Austria's ODA, which is partly implemented by the Austrian Development Agency. It is also the Austrian anchor point for UNESCO.
- Another ministry with an international outreach in science, technology and innovation towards third countries is the **Ministry of Agriculture, Forestry, Environment and Water Management**. It deals with global challenges such as global food security or climate change and has also limited resources for R&D in these areas available.

#### Agencies

- The **Austrian Science Fund (FWF)**, driven by the excellence objective, has a number of bilateral agreements with 3<sup>rd</sup> countries (e.g. China, India, Korea, Russia), is engaged in a few international ERA-NETs (e.g. India), is actively involved in the D-A-CH agreement (Germany, Austria and Switzerland), implements an open-programme policy (i.e. participation of and even funding for researchers coming from abroad and/or working abroad) and runs a number of internationally oriented (pre-dominantly outgoing) oriented research support measures, out of which the USA is still most in demand. Generically of utmost importance is FWF's principle to have all projects submitted to FWF internationally evaluated, including evaluators from Switzerland, USA and other 3<sup>rd</sup> countries. Its internationalisation activities are driven by excellence. According to FWF's general approach internationalisation activities should be rather organised in a bottom-up manner by researchers themselves than top-down purported.
- The **Austrian Agency for International Cooperation in Education and Research (OeAD GmbH)**, driven by several internationalisation objectives like quality acceleration, resource acquisition (in terms of human capital), global development and science diplomacy, which are constituent for its self-understanding and mandate, is mostly occupied with the support of international mobility (both outgoing and incoming of researchers and students), coordinates the CEEPUS mobility programme (targeting Central-, Eastern- and Southeast Europe), runs small offices in Ukraine and China, hosts the Austrian Commission for Development Studies ("KEF") and implements the 'appear' programme for research for development (both with a focus on sub-Saharan), manages the two international university networks which are both targeting different priority regions in Asia (ASEA-Uninet and EURASIA-PACIFIC-Uninet), supports – together with WUS Austria and ZSI

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<sup>4</sup> Now subsumed under the COIN programme

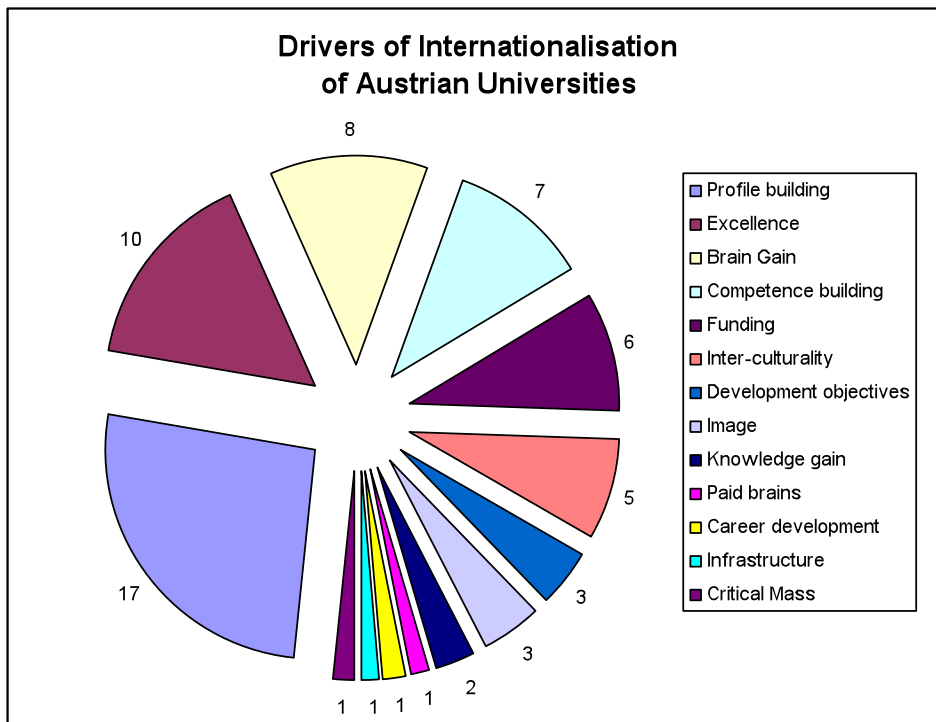
- the reform of the higher education and research system in Kosovo and administers the bilateral intergovernmental S&T agreements, which Austria has with a number of 3<sup>rd</sup> countries.
- Like FWF also **FFG, the Austrian Research Promotion Agency**, driven by market competitiveness and excellence objectives, has for most of its R&D programmes an open policy approach, which enables participation and funding (if duly justified) of researchers from abroad. FFG is also engaged in Eureka and Eurostars, where a third country outreach is not only possible but also appreciated (e.g. with Canada), as well as in some ERA-NETs with a potential outreach to 3<sup>rd</sup> countries. Its “*headquarter programme*” supports FDI investments in R&D in Austria. FFG also runs the “*brainpower Austria*” programme to promote brain gain (especially targeting Austrian Diaspora working in Northern America). Its international focus is mainly intra-European, but also USA, Japan and some BRIC countries are targeted.
- Of selective importance in terms of RTDI internationalisation towards 3<sup>rd</sup> countries are
  - **AWS** (which – driven by the market access objective - provides some relevant advisory services, e.g. concerning IPR and patenting; operates the Life Science Austria marketing platform and supports the internationalisation of Austrian clusters),
  - the **Austrian Development Agency ADA** (which – driven by the global development objective – invests in research for development projects and capacity building in higher education and research in developing countries),
  - **ZSI** (which fulfils on contractual basis agency functions for the BMWF in terms of participation in ERA-NETs, INCO-NETs and BILAT-projects and evidence-based advisory and analysis; e.g. scientometrics);
  - the **Austrian Research Society ÖFG** implements a few support measures on contractual basis.;
  - and the **Austrian Business Agency (ABA)** operates globally with the aim to attract foreign business and R&D (the later via its marketing initiative “*research location Austria*” to Austria). Most FDIs, however, still originate from Germany, followed by other European countries, but Russia and some Asian countries are increasingly investing in Austria too. Recent activities focus on Europe, USA, Canada, Japan and China.

#### Research performers

2. 7 out of 22 **public universities** in Austria have an explicit internationalisation strategy or at least elements of a strategy in this respect, namely the
  - Karl-Franzens University Graz
  - Medical University Vienna
  - University of Life Sciences Vienna
  - University for Music and Performing Arts in Graz Kunst Graz
  - Medical University Graz
  - University Innsbruck
  - University Vienna

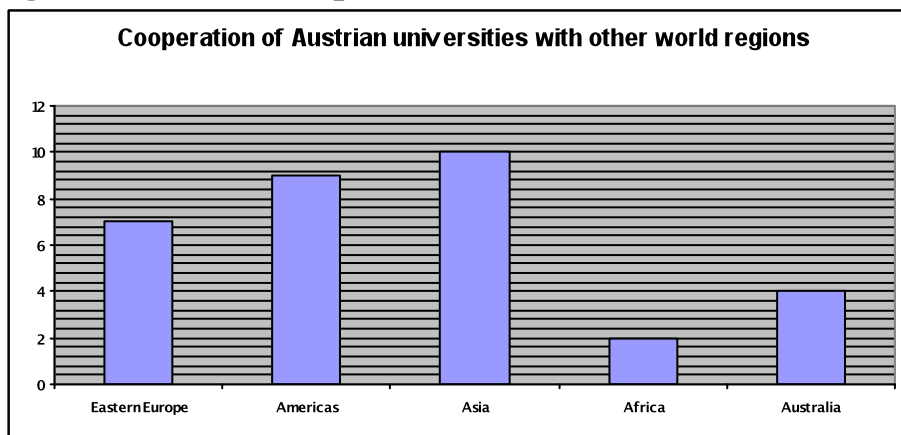


**Fig 1: STI internationalisation drivers of Austrian universities**



As can be seen from Fig. 1 institutional profile building, excellence achievement, brain gain, competence building, acquisition of funds, inter-culturality and development objectives are the main drivers of universities.

**Fig. 2: World-wide cooperation of Austrian universities**



The main priority regions of international university cooperation activities are shown in Fig. 2. Asia (esp. China and Southeast Asia), Americas (both North and South) and Eastern Europe are dominating the picture, but a strong regional variety among the Austrian universities can be observed such as

- Medical University Vienna (with a regional focus - among others – on Libya, Kazakhstan, Malaysia, Abu Dhabi)
- Technical University Graz (plans an extension of its cooperation portfolio towards America, Africa and Southeast Asia)
- University for Applied Arts Vienna (Asia)

- University of Life Sciences Vienna (follows priority regions of ADA and BMWF such as Southeast Asia, Eastern Africa, Central and South America, Arabic countries)
- University of Music and Performing Arts Vienna (America)
- Medical University Graz (USA, Canada, Australia, Asia (priority on China) and South America)
- University Innsbruck (cooperation with universities in mountainous regions all over the world)
- University Klagenfurt (Southeast Europe, Australia, USA, Latin America and Asia)
- Mozarteum Salzburg (China)
- University Salzburg (USA, Australia)
- Veterinary Medical University Vienna (USA)
- University for Business Administration and Economics Vienna (Eastern neighbourhood countries and Ukraine, Southeast Europe, China and Vietnam)
- University Vienna (North America, Asia, Australia, China, Japan, Korea, ASEA-UNINET countries in Southeast Asia, Southeast Europe)

All universities are currently obliged to establish internationalisation strategies within their performance agreements to be concluded with the Austrian Federal Ministry of Science and Research, which will have to be implemented from 1.1.2013 until 31.12.2015.

The Austrian University Conference (UNIKO) organises an informal networking platform across the relevant offices for international affairs operating at the Austrian universities. It establishes – in cooperation with the OeAD GmbH, strategic activities in the field of the aliens act, scientific visa and studying in Austria, developed a code of conduct for an improved integration of incoming students and supports the high-level working group on R&D internationalisation targeting 3<sup>rd</sup> countries.

- 7 out of 21 **universities of applied sciences** (so called “Fachhochschulen”) in Austria have strategic internationalisation papers or some positioning papers or first elaborations available:
  - FH of the Bfi Vienna (dedicated internationalisation strategy and Black Sea strategy)
  - Kufstein (internationalisation strategy under construction)
  - FH Vorarlberg (internationalisation is part of the mission statement)
  - IMC FH Krems (internationalisation objectives and competences are formulated)
  - FH Campus Vienna (working paper of the international office)
  - Fachhochschule Technikum (non-formalised strategic elaborations are available)
  - FH St Pölten (non-formalised strategic elaborations are available)

The main drives of Austrian universities of applied sciences are highly student-centred, featuring the issue of inter-culturality (which is embedded in international oriented curricula and learning topics, language courses, double and joint degree as well as mobility programmes), international career support (especially for graduates), profile-building, brain gain, and the excellence and quality/competence acceleration objective.

The Austrian universities of applied sciences (“Fachhochschulen”) typically have no defined priority regions, but follow a very strong bottom-up approach

towards relevant partner institutions abroad. An analysis of the available documents shows some regional inclination towards Central-, Eastern and Southeast Europe including the Black Sea region, India, USA, and Asia. Nine Austrian universities of applied sciences are partnering in the Eurasia Pacific Uninet.

- The **non-university research organisations** which are pre-dominantly conducting **fundamental research** (i.e. **the Austrian Academy of Science, the Institute of Science and Technology Austria and the institutes of the Ludwig Boltzmann Society**) have no explicit internationalisation strategy, but are immanently driven by the excellence objective and the understanding, that excellence can only be achieved through international co-operation and competition. There are no top-down pre-defined geographical cooperation areas, but USA and intra-EU-cooperation are strongly developed and there is some effort to develop closer cooperation with the most developed research locations in Asia.
- The two major **non-university research organisations** which are pre-dominantly active in **applied research** (first of all the **Austrian Institute of Technology AIT** and secondly **Joanneum Research**) are mainly cooperating within the ERA, but they have also – driven by the excellence and the resource acquisition objective - a couple of reach out activities. AIT has bilateral programmes with China, Singapur, USA, Korea, Australia and a multilateral „Graduate School bio-nano-technology“ together with Nanyang technological University (Singapur), A\*Star (Singapur) and several Austrian stakeholders. Joanneum Research has an explicit focus on Southeast Europe.

#### Further stakeholders

- The **Austrian Council for Research and Technology** is an advisory body for the Austrian government. It has published its strategy 2020 with a dedicated chapter on internationalisation (see section 2.2). It strongly urges a more forward-looking STI internationalisation perspective for Austria and an improved connection towards international RTDI infrastructures.
- The **Austrian Economic Chamber** implements four smaller measures in her “go international” foreign trade initiative which support R&D internationalisation and technology transfer (i.e. “future journeys” to world-leading technology institutes; “export vouchers” for technology-oriented companies; specialised technology advisors within its liaison offices in New York, Los Angeles, Shanghai, Tokio, London, Moscow, Frankfurt, Paris and Sao Paolo including a liaison programme with MIT and the Stanford Research Institute Consulting-Business Intelligence; database and partnering services).

Finally, it is worthwhile to mention that STI internationalisation towards 3<sup>rd</sup> countries is typically not an issue of **regional STI policy**. Exceptions are to be found in Styria with an international orientation towards the West Balkan Countries and in Vorarlberg, where cross-border activities with Switzerland (and Germany) are usual practice.

### **1.3 Policy Implementation**

In the following sections, the responsible actors for policy implementation, including their role, their main policies and policy instruments, their main type of activity, targets and thematic priorities, their overall expenditures on international activities

(if available), their monitoring and evaluation mechanisms in place etc. are summarised.

### **Austrian Federal Ministry of Science and Research (BMWF)**

The main actor in STI internationalisation policy is the BMWF (see section 2.3). The ministry's role is that of a strategy and policy developer, but also that of an implementer, depending on the specific policy and policy instrument under scrutiny. The implementation of most instruments is, however, outsourced to FWF and OeAD (see below). The most important policies and policy instruments of the BMWF in terms of 3<sup>rd</sup> country cooperation are:

a) *Bilateral intergovernmental science and technology agreements and other similar agreements*

Role: The BMWF has the thematic leadership in negotiating and implementing bilateral intergovernmental S&T agreements. In concluding and supervising the agreement the BMWF works together with the BMEIA. BMWF is also strongly involved in the implementation of the bilateral intergovernmental S&T agreements, but administratively and logistically supported by the OeAD, which has a small office for basic administrative work.

Objectives: Via regular calls for proposals, the BMWF and her international partner, selects the best evaluated projects and funds the mobility of researchers involved in the selected projects.

Targets and thematic priorities: Due to the funding regime (only part of additional mobility costs are funded), the bilateral intergovernmental S&T agreements are primarily demanded by public universities (Schuch 2009). Typically there are no narrowly defined thematic priorities. The focus is on natural sciences, but also engineering sciences and humanities are usually entitled to participate.

Duration: if an agreement is established, than it usually has a long duration

Regional focus: BMWF and BMEIA run bilateral intergovernmental S&T agreements with the following 3<sup>rd</sup> countries: Albania (in preparation), Argentina (memorandum since 2010), China (since 1985), India (since 2008), Indonesia (memorandum since 2011), Korea (joint declaration since 2007), Croatia (since 2003), Macedonia (since 2008), Montenegro (since 2010), Russian Federation (since 1999, expired and new since 2012), Serbia (since 2011), Ukraine (since 2005) and Vietnam (since 1972). With Israel exists a non-active agreement (since 1994).

Budget: The budget depends on the agreement. In general, it is very low. Average spending pro project and year for the Austrian partner is typically below € 5,000.

Monitoring and evaluation: An evaluation has been published in 2004 (Buzeczki 2004) and an analyse of the potential of transfer of bilateral R&D projects towards the European Framework Programme for Research and Technological Development has been published in 2012 (Schuch, Wagner and Dall 2012). Regular activity monitoring is done by OeAD.

Shift in priorities: There is a regional shift away from intra-EU agreements towards agreements with 3<sup>rd</sup> countries. Increasingly more focus is on the inclusion of younger researchers and of establishing connectivity and follow-up to European Research Programmes.

Changes in budgets during the last 10 years: No, but slight tendency towards more limited budget appropriations because of budget consolidation requirements.

Contact person: Ms. Christine Buzeczki (BMWF)

Url:

[http://www.bmwf.gv.at/startseite/forschung/internationales/internationale\\_abkommen/](http://www.bmwf.gv.at/startseite/forschung/internationales/internationale_abkommen/)

b) *Participation in international ERA-NETs, INCO-NETs and BILAT projects*

Role: The BMWF participates either directly or indirectly (via her contracted implementers ZSI or OeAD) in a number of international ERA-NETs, where it provides Austrian funding, INCO-NETs, where it steers the policy dialogue, and BILAT projects, where it is involved in the policy dialogue.

Objectives: The major objective of the Austrian involvement in international ERA-NETs is to directly support R&D projects within multilateral joint calls for proposals (agreed on basis of variable geometry). The major objective of BMWF's involvement in INCO-NETs and BILAT projects is to contribute to the bi-regional or bi-lateral policy dialogue and to contribute *to* and benefit *from* the support and intelligence measures implemented under these projects.

Targets and thematic priorities: The BMWF support within the international ERA-NET projects mainly public universities and non-university research organisations dealing with fundamental research. The thematic priorities in international ERA-NET are jointly top-down developed and programmed by all involved partner and target countries and vary from ERA-NET to ERA-NET. Within INCO-NETs and BILAT the thematic focus is on grand challenges.

Duration: usually between 2 and 3 years (BILAT projects), 4 years (ERA-NETs) and 4 and 6 years (INCO-NETS).

Regional focus: BMWF participates (either directly or indirectly via ZSI) in international ERA-NETs with the Western Balkan Countries (SEE-ERA.NET PLUS), Korea (KORANET), Russia (ERA-NET RUS), India (New Indigo) and Africa (ERAAfrica). It takes part in INCO-NETs and BILATs targeting the Western Balkan Countries (WBC INCO.NET), Southeast Asia (SEA-EU.NET), Latin America (EULARINET), Eastern Europe (INCO-NET EECA), Central Asia and South Caucasus Countries (INCO NET CA/SC) and Ukraine (BILAT-Ukr\*aina).

Budget: The national budget channelled into the international ERA-NETs varies, but is between €200,000 and €400,000.

Monitoring and evaluation: These kinds of projects are monitored by the European Commission. Usually international ERA-NETs have also additionally in-build call monitoring procedures.

Shift in priorities: Occasionally FWF (co-)funding is approached for multilateral calls for proposals launched within international ERA-NETs (e.g. with India in the framework of the "New Indigo" ERA-NET).

Changes in budgets during the last 10 years: No, but slight tendency towards more limited budget appropriations because of budget consolidation requirements.

Contact person: Mr. Stephan Neuhäuser (BMWF) and Mr. Christian Gollubits (BMWF)

Url: <http://plus.see-era.net/pjc/index.html>, <http://www.newindigo.eu/>,  
<http://www.koranet.eu/>, <http://www.eranet-rus.eu/>,  
<http://www.erafrica.eu/>, <http://wbc-inco.net/>, <http://www.sea-eu.net/>,  
<http://www.eularinet.eu/>, <http://www.inco-eeca.net/>, <http://www.inco-casc.net/>, <http://www.bilat-ukr.eu/>

c) Further policies and instruments targeting STI internationalisation with 3<sup>rd</sup> countries under the authority of BMWF:

- Eurasia Pacific Uninet (OeAD as implementing agency)
- ASEAN Uninet (OeAD as implementing agency)
- Cooperation in ASEM
- CEEPUS (OeAD as implementing agency)
- EU-Steering Platform on Research for the Western Balkan Countries (<http://wbc-inc0.net/>) (implemented by ZSI)
- The “Anton Gindely-Award” has been discontinued. A new award focusing on excellent research done in the Danube Region is the “Danubius Award”; one might add one further award connected to international cooperation: the “ASCINA Award” (ASCINA: Austrian Scientists in North America; this association was founded in 2002 and comprises slightly more than 1000 members; the BMWF endows 2 yearly ASCINA prizes for excellent research conducted by Austrian scientists in North America; cf. <http://ascina.at>).
- Participation in the Regional Cooperation Task Force “Fostering and Building Human Capital” (focusing on West Balkan Countries)
- Participation in the EU Danube Strategy, priority area “knowledge society”
- Commission for Development Studies (OeAD as implementing agency; <http://www.kef-online.at/>)
- International Lectureship Programme (OeAD as implementing agency; <http://www.oead.at/index.php?id=894&L=1>) with locations in Albania, Bosnia-Herzegovina, China, Egypt, Japan, Croatia, Macedonia, Mexico, Moldova, Mongolia, Montenegro, Russia, Serbia, Ukraine and a couple of EU Member States)
- Offices for Science and Technology in Washington (<http://www.ostina.org/>) and Beijing (<http://www.bmvit.gv.at/presse/aktuell/nvm/2012/0207OTS0045.html>) (both together with BMVIT, BMWFJ and BMEIA) (see below)
- Cooperation Offices in Lviv (Ukraine) and Shanghai (China) (implemented by OeAD)
- Center for Austrian Studies in Israel (<http://www.cas.huji.ac.il/>)
- Wirth Institute for Austrian and Central European Studies in Canada (<http://www.wirth.ualberta.ca/>)
- Center for Austrian Studies Minnesota, USA (<http://www.cas.umn.edu/>)
- Center for Austrian Culture and Commerce New Orleans, USA ([http://www.campaigndigital.org/index.php?option=com\\_content&view=article&id=83&Itemid=204](http://www.campaigndigital.org/index.php?option=com_content&view=article&id=83&Itemid=204))
- “Higher KOS” project in to modernise the higher education and research sector in Kosovo (together with ADA, implemented by WUS Austria, ZSI and OeAD)
- International participation in CERN, European Southern Observatory (ESO), European Synchrotron Radiation Facility (ESRF), European Molecular Biology Laboratory (EMBL), International Agency for Research on Cancer (IARC), International Institute for Applied Systems Analysis (IIASA, <http://www.iiasa.ac.at/>), Salzburg Medical Seminars (<http://www.aaf-online.org/index.php/salzburg-medical-seminars.html>), Salzburg Global Seminar (<http://www.salzburgglobal.org/current/index-b.cfm>).

## **Austrian Science Fund (FWF)**

The Austrian Science Fund is Austria's major agency for funding basic science. Among all agencies, it has the most pronounced "open policy" attitude. Around 10% of FWF's funding is "consumed" abroad. The most important instruments of the FWF in terms of 3<sup>rd</sup> country cooperation are:

### *a) Bilateral Memoranda of Understanding*

**Role:** FWF follows the excellence objective. To enable research cooperation at international basis, FWF concluded a number of bilateral memoranda of understanding with foreign research funding organisations. Joint projects aim at funding closely integrated bilateral research projects. Usually scientists from Austria and FWF's partner country apply for their respective project parts at their country's funding organisation, using the forms prescribed by the respective agency. The titles of both applications must be the same. Only if both organisations approve the respective proposals, the joint project will be funded. Applications for joint projects must show a clear scientific added value due to the international cooperation. An exception to this procedure is the 'lead agency'-approach, which FWF has concluded with the National Research Foundation of Korea and under the D-A-CH agreement with DFG of Germany and SNF of Switzerland, under which one lead agency (the one which provides most money for the joint project) takes over the procedural lead (e.g. in terms of evaluation), whose results are accepted by the other participating funds.

**Objectives:** Via regular calls for proposals, the FWF and her international partner, selects the best evaluated joint research projects and proposals for joint seminars.

**Targets and thematic priorities:** The bilateral memoranda of understanding are mostly thematically open. The target group are scientists predominantly working at public universities or the Academy of Sciences. Usually only a very low number of international projects (1 to 3) are funded under each call for proposals.

**Duration:** if an agreement is once established, than it usually has a long duration. The normal duration of joint research projects is 3 years.

**Regional focus:** FWF runs bilateral memoranda of understanding with the following 3<sup>rd</sup> country partners: CONICET – Consejo Nacional de Investigaciones Científicas y Técnicas of Argentina (restricted to the fields of material physics, mathematics, geosciences, pharmacology, molecular biology, astronomy), the National Natural Science Foundation of China, the National Research Foundation of Korea, the Japan Society for the Promotion of Science, the Russian Foundation for Basic Research (permanent open call in the fields of mathematics, mechanics, informatics; physics and astronomy; chemistry; biology and medical science; earth sciences; humanities and social sciences, information, computer and telecommunication resources; fundamentals of engineering sciences), Switzerland (since 2011), the National Science Council of Taiwan and the National Science Foundation of USA (in the field of chemistry and materials research). the FWF's most recent MoU with the Indian DST (Department of Science and Technology) was signed in October 2011.

**Budget:** The budget depends on the agreement. In general, it is very low. Average spending pro project and year for the Austrian partner is typically around € 100,000. In 2009 FWF allocated €9.48m for international programmes (incl. bilateral projects, international mobility programmes and other internationalisation measures of FWF), and €14.91m in 2010. In 2010 the success rate was around 30%.

**Monitoring and evaluation:** FWF implements an ex-ante peer review of project proposals (all peers are from abroad!) and a terminal evaluation of

at least one of the peers involved in the ex-ante procedure. FWF regularly monitors the output in terms of produced publications, participation at international conferences and career advancements.

**Shift in priorities:** There is a regional shift away from intra-EU agreements towards agreements with promising 3<sup>rd</sup> countries in terms of scientific excellence.

**Changes in budgets during the last 10 years:** increasing; with a shift towards 3<sup>rd</sup> country activities.

**Contact person:** Ms. Beatrice Lawal (FWF for Argentina, China, Japan, Russia and Taiwan) and Mr. Belocky for Korea

**Url:**

[http://www.fwf.ac.at/de/internationales/foerderkategorien\\_bilaterale\\_a\\_bkommen.html](http://www.fwf.ac.at/de/internationales/foerderkategorien_bilaterale_a_bkommen.html)

#### *b) International Mobility Programmes*

**Role:** FWF runs three dedicated international research mobility schemes:

- Erwin Schrödinger fellowships (outgoing)
- Lise-Meitner-Programme (incoming)
- Translational Brainpower programme (inclusion of foreign researchers in projects working at the interface between basic and applied science)

**Objectives:** The objectives differ among the three international research mobility schemes:

- Erwin Schrödinger fellowships: young post-docs should gain international experience in leading institutes abroad to access new knowledge, methods, procedures and techniques to contribute to the development of science in Austria after their return
- Lise-Meitner-Programme: improving the quality of the know-how of the scientific community in Austria and creation of international contacts
- Translational Brainpower programme: the potential of the foreign researcher who is working at the interface between basic and applied science should be tapped and utilised for strengthening the Austrian science and innovation system.

**Targets and thematic priorities:** There are no thematic priorities.

- Erwin Schrödinger fellowships: young Austrian post-docs are targeted
- Lise-Meitner-Programme: senior foreign scientists are targeted
- Translational Brainpower programme: researchers working at the interface between basic and applied science are targeted.

**Duration:** The international mobility programmes are designed as long-term support programmes.

- Erwin Schrödinger fellowships: 10 to 24 months including a return phase of 6 to 12 months
- Lise-Meitner-Programme: 12 to 24 months
- Translational Brainpower programme: maximum 9 months

**Regional focus:** There is no pre-defined regional priority, but German speaking countries (Germany and Switzerland) as well as USA and UK are the most demanded countries.

**Budget:**

- Erwin Schrödinger fellowships: €5.59m (in 2010) and €3.50m (in 2009)



- Lise-Meitner-Programme: €3.91m (in 2010) and €3.26m (in 2009)
- Translational Brainpower programme: €1.06 (in 2010) and €0.32m (in 2009)

Monitoring and evaluation: FWF implements an ex-ante peer review of project proposals (all peers are from abroad!) and a terminal evaluation of at least one of the peers involved in the ex-ante procedure. FWF regularly monitors the output in terms of produced publications, participation at international conferences and career advancements.

Shift in priorities: No

Changes in budgets during the last 10 years: increasing

Contact person: Robert Gass, Reinhard Schmidt, and Susanne Woytacek for Erwin Schrödinger fellowships and the Lise-Meitner-Programme and Birgit Woitech for the translational brainpower programme.

Url: <http://www.fwf.ac.at/de/projects/schroedinger.html>

<http://www.fwf.ac.at/de/projects/meitner.html>

[http://www.fwf.ac.at/de/projects/translational\\_brainpower.html](http://www.fwf.ac.at/de/projects/translational_brainpower.html)

b) Further policies and instruments targeting STI internationalisation with 3<sup>rd</sup> countries under the authority of FWF:

- Joint international seminars ([http://www.fwf.ac.at/de/internationales/foerderkategorien\\_bilaterale\\_abkommen.html](http://www.fwf.ac.at/de/internationales/foerderkategorien_bilaterale_abkommen.html))
- “money follows researchers” to use given grants to be used for continuation of the granted research project in case the grantee moves to another country (<http://www.fwf.ac.at/de/internationales/information-mfr.html>)
- take-over of costs of research partners from developing countries and of research costs of Austrian researchers in developing countries in course of granted projects (<http://www.fwf.ac.at/de/internationales/projektkostenentwicklungslaender.html>)
- CSC-FWF Scholarship Program to support the stay of Chinese PhD candidates in Austria (<http://www.fwf.ac.at/de/internationales/csc2011.html>)

## **OeAD**

The OeAD, BMWF other important agency (next to FWF) is the Austrian agency for international mobility and cooperation in education, science and research. It advises, promotes and supports international cooperation in education, science and research. Its core business is the exchange of people of all ages and educational levels in Europe and worldwide. A special focus is on development cooperation and on education export. Its overall budget in 2010 was €47m, out of which it is estimated that more than €35m were directly spent on internationalisation activities.

The most important instruments of the OeAD in terms of 3<sup>rd</sup> country cooperation are:

a) “appear” programme

Role: The consortium OeAD and Latin-America Institute (LAI) implements this rather new programme of Austrian Development Cooperation (ADC) for the promotion of academic partnerships between North and South.

Objectives: According to the development policy trend in Europe and the ADC programmatic guidelines the new “Austrian Partnership Programme in Higher Education and Research for Development - appear” for the period 2010-2014 supports partnerships between higher education

institutions in Austria and ADC key regions. The objectives are to improve the quality in teaching and research, to make the management and the administration at the involved institutions more effective and to strengthen the scientific dialogue nationally and internationally.

Under the development goal of poverty reduction appear also contributes to a discourse in society about quality and orientation of development in general. The institutional partnerships are based on a cooperative collaboration and mutual respect for different cultural contexts and approaches. It is also based on issues that are of high relevance particularly for the partners in the "South". The exploitation of the results also follows a participatory approach – for example through mutual exchange of teaching staff or joint publications and presentations.

Targets and thematic priorities: Researchers from public universities and Austria and researchers from developing countries are targeted.

The thematic focus of appear is on:

- Higher education and research for development
- Water supply and sanitation, rural development, energy, private sector development, governance and human rights
- Poverty reduction, environment and natural resources, peace building and conflict prevention, gender equality
- Strengthening of skills in social sciences as an instrument to systematically analyze the reasons of poverty and to empower capacities in social science research.

Duration: 2010-2014

Regional focus: Ethiopia, Uganda, Kenya, Mozambique, Cape Verde, Burkina Faso, Senegal, Nicaragua, El Salvador, Guatemala, Bhutan, Nepal, Palestinian Territories. 40% of all incoming fellows supported under this programme come from Ethiopia, 13% from Nepal and the rest is almost equally distributed (OeAD 2012).

Budget: €9m (for 5 years)

Monitoring and evaluation: In-house monitoring is done by OeAD. No external evaluation implemented.

Shift in priorities: No

Changes in budgets: No

Contact person: Andreas Obrecht (OeAD)

Url: [http://www.appear.at/appear/general\\_information/](http://www.appear.at/appear/general_information/)

b) Further policies and instruments targeting STI internationalisation with 3<sup>rd</sup> countries under the authority of OeAD:

- Commission for Development Studies (spending less than €300,000 per year on small projects with developing countries, mostly from sub-Saharan Africa) (<http://www.kef-online.at/> )
- “ASEA uninet” supports the exchange of knowledge between partner universities in the member countries in Europe and South-East Asia (Indonesia, Malaysia, Philippines, Thailand and Vietnam). The main activity of the network is the organisation and financial support of the exchange of scientists and postgraduates and the transfer of knowledge associated with this. Amongst other things ASEA Uninet is also in charge of the administration of technology grants for South-East Asia (<http://www.uibk.ac.at/asea-uninet/> )
- Eurasia-Pacific Uninet (EPU) was established in 2001 with the objective of creating an educational network for Austrian universities, universities of applied sciences and other educational institutions in Central Asia, East Asia and the Pacific. It comprises

a great number of international partners of all fields of research and supports projects in the areas of research, research-based teaching and art as well as technology cooperations. At present the following countries take part: Bhutan, China, India, Kazakhstan, Kirgizstan, Korea, Democratic People's Republic of Korea, Mongolia, Nepal, Russian Federation, Tajikistan, Uzbekistan (<http://www.eurasiapacific.net/> )

- CEEPUS - Central European Exchange Programme for University Studies is a multilateral exchange programme with Central and Eastern Europe, which was initiated by Austria in 1995. It is a transnational Central European university network, which is composed of different individual subject-specific networks. At present CEEPUS unites universities from 16 Central and Eastern European countries (Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Macedonia, Moldova, Poland, Romania, Serbia and Montenegro, Slovak Republic, Slovenia. The Kosovo with the University of Prishtina is also eligible for participation) in the framework of networks consisting of at least three higher education institutions from at least two different contractual countries (<http://www.ceepus.info/>).

### **Austrian Federal Ministry of Transport, Innovation and Technology (BMVIT)**

The second main actor in STI internationalisation policy is the BMVIT (see section 2.3). The ministry's role is that of a strategy and policy developer, but occasionally also that of an implementer, depending on the specific policy and policy instrument under scrutiny. The implementation of most instruments is, however, outsourced to FFG, which is owned by both BMVIT and BMWFJ. The most important policies and policy instruments of the BMVIT in terms of 3<sup>rd</sup> country cooperation are:

#### *a) Cooperation Agreements in Infrastructure Technologies*

**Role:** The BMVIT runs several intra- and extra-European cooperation agreements in infrastructure technologies, since it also has the overall responsibility to act as political caretaker of the Austrian railways, federal roads (including motorways), but also has a strategic role as regulator in fields such as telecommunication and air transport. The Austrian Institute of Technology, of which the BMVIT is a 51% shareholder, is linked to infrastructure technologies as scientific and technological provider.

**Objectives:** The objective of the cooperation agreements is to establish contacts for furthering economic and technological relations and exchanges. The market access objective plays a crucial role.

**Targets and thematic priorities:** Although the cooperation agreements are concluded at the policy level, the indirectly addressed target groups are primarily both state-controlled and private companies. In this sense, the cooperation agreements also fall under the science diplomacy objective. The thematic priorities are closely connected to the thematic competence areas of the BMVIT, especially railway technologies, other transport infrastructure technologies (incl. road, air, and ship transport), health technologies, water power station technology and alternative energy technologies and also border-management technology.

**Duration:** if an agreement is established, than it usually has a long duration

**Regional focus:** BMVIT has infrastructure technology related cooperation agreements with a large number of 3<sup>rd</sup> countries, namely Albania, Algeria,

Azerbaijan, Brazil (under negotiation), Bosnia-Herzegovina (currently not active), China, Colombia (under negotiation), Croatia (currently not active), Egypt (currently not active), India, Indonesia (currently not active), Iran (currently not active), Kazakhstan, Libya (currently not active), Malaysia (currently not active), Morocco (currently not active), Moldova, Montenegro (currently not active), Namibia, Pakistan (currently not active), Philippines (currently not active), Russian Federation, Serbia, Sri Lanka (currently not active), Thailand (currently not active), Trinidad & Tobago (under negotiation), Tunisia (currently not active), Turkey (currently not active), Ukraine, Uzbekistan (currently not active), Venezuela (under negotiation) and Vietnam.

Most comprehensive are the agreements with China and India. Concerning the later, however, a number of infrastructure technology areas are still under negotiation.

Budget: There is no directly earmarked budget for most of the agreements.

Monitoring and evaluation: No

Shift in priorities: There is a thematic shift towards non-railway transport infrastructure technologies, health infrastructures and the new field of border management. Most new infrastructure technology agreements currently negotiated are with Latin American countries.

Changes in budgets during the last 10 years: No

Contact person: Different persons in the unit for technology transfer and security research.

Url: *None*

#### *b) Offices of Science and Technology in Washington and Beijing*

Role: Compared with other small, but technologically advanced European countries like Sweden, Switzerland or The Netherlands, Austria runs a very small number of S&T liaison offices abroad. The two most visible ones are the Offices of Science and Technology in Washington and Beijing. While the OST in Washington was established in 2002 at the Austrian Embassy in Washington, DC, the OST in Beijing only recently started its work (beginning of 2012) and it not yet fully operational. Thus, the following refer to the OST Washington. The OST is an inter-ministerial initiative, currently supported by four Austrian ministries:

- Foreign Ministry for European and International Affairs, BMeiA
- Federal Ministry of Science and Research, BMWF
- Federal Ministry of Transport, Innovation and Technology, BMVIT
- Federal Ministry of Economy, Family and Youth, BMWFJ

The attaché for Science & Technology at the *Embassy of Austria* in Washington, DC, serves as director of the OST.

Objectives: The objective of the OST is to establish a strategic interface in the areas of science, research, and research policy between Austria and North America respectively China. The work of the OST focuses on the following core services:

- Expansion and maintenance of the OST Scientist Network - an interdisciplinary network of Austrian researchers, R&D managers, and S&T policy experts in North America
- Consultation and information on Austrian and North American policy in science, research, and technology
- Support and advice on initiation of new R&D cooperation between Austrian and North American institutions
- Information via bridges, a free online magazine, on current topics of research and technology policy in Austria, Europe, and North America

Targets and thematic priorities: OST targets researchers from Austria (working both in Austria and North America) and North American researchers as well as intermediaries and research policy-makers from Austria and North America. There are no thematic restrictions. Emphasis is on STI policies.

Duration: long-term. The OST Washington was established in 2001.

Regional focus: North America respectively China.

Budget: No information, but not earmarked financial resources are most probably significantly below €1m (estimate).

Monitoring and evaluation: No

Shift in priorities during the last 10 years: Initially the focus was on the USA, but expanded to North America.

Changes in budgets: No

Contact person: Mr. Philipp Marxgut, Attaché for Science & Technology, Director of the OST

Url: <http://www.ostina.org/> and <http://www.bmvit.gv.at/presse/aktuell/nvm/2012/0207OTS0045.html>

c) Further policies and instruments targeting STI internationalisation with 3<sup>rd</sup> countries under the authority of BMVIT:

- Headquarter Programme (<http://www.ffg.at/competence-headquarters>) (find more information below)

### **Austrian Federal Ministry of Economy, Family and Youth (BMWFJ)**

The ministry's role is that of a strategy and policy developer, but occasionally also that of an implementer, depending on the specific policy and policy instrument under scrutiny. The implementation of most instruments is, however, outsourced to FFG, which is owned by both BMVIT and BMWFJ, WKO, AWS (also co-owned with the BMVIT) and other agencies. Besides the ministries engagement in European RTDI programmes (such as EUREKA where a special 3<sup>rd</sup> country focus of Austria is on Canada, Israel and Korea) the most important policies and policy instruments of the BMWFJ in terms of 3<sup>rd</sup> country cooperation are:

*a) Joint Economic Commissions, Expert Committees and Working Groups*

Role: The BMWFJ has two active Joint Economic Commissions at minister's level with third countries (Russian Federation and Turkey) and several lower-level economic commissions, expert committees and working groups. They are often implemented in division of labour with the Austrian Economic Chamber (WKO).

Objectives: The objective of these commissions, committees and working groups is to prepare and initiative access to foreign markets (incl. technologies).

Targets and thematic priorities: Although the cooperation agreements are concluded at the policy level, the indirectly addressed target groups are private companies. In this sense, the cooperation agreements also fall under the science diplomacy objective. There are no thematic priorities, but economic relevance is a precondition.

Duration: if an agreement is established, than it usually has a long duration

Regional focus: BMWFJ has active joint economic commissions, expert committees and working groups with Albania, Armenia, Azerbaijan, Belarus, China, Croatia, Georgia, India, Irak, Kazakhstan, Kosovo, Kirgizstan, Macedonia, Mexico, Moldova, Pakistan, Russia, Saudi-Arabia, Serbia, Turkey, Turkmenistan, Ukraine, and Vietnam.

A strong regional focus is on Austria's export markets in Eastern and Southeast Europe. There are also several existing, but inactive economic commissions with Algeria, Argentina, Brazil, Iran, Cuba, Morocco, Peru, Philippines, Syria, Thailand, USA, U.A.E and Venezuela.

Budget: There is no directly earmarked budget.

Monitoring and evaluation: No, but often WKO makes follow-up work.

Shift in priorities: No

Changes in budgets during the last 10 years: No

Contact person: several persons depending on the country under scrutiny.

Url: None (information about the joint committee with Russia can be accessed here:

<http://www.bmwfi.gv.at/Presse/Archiv/Archiv2011/Seiten/russischeKommission.aspx>)

#### b) go-international ("Internationalisierungsoffensive")

Role: The BMWFJ finances the go-international "Internationalisierungsoffensive", which is implemented by the Austrian Economic Chamber WKO. It was launched in 2003 and forms part of the government programme.

Objectives: The go-international initiative encourages companies to step across the border by offering advisory services, events and support, as well as making it easier for existing exporters to enter additional foreign markets. The **special aspect of this initiative** is its comprehensive approach targeted at structural improvement. It not only secures existing markets and opens up new ones but also aims to create a sustainable basis for dynamic, globally oriented and knowledge-based external economic relations guided by an analysis of the strengths and weaknesses of the Austrian external trade sector. The internationalisation initiative addresses the "classic" problem areas of Austria's external trade, which has traditionally focused too heavily on Europe, with exported goods and services featuring a comparatively low technology and knowledge intensity. A comprehensive set of measures has been prepared for the current campaign (internationalisation initiative III). The new Austrian external trade policy statement (*Außenwirtschaftsleitbild*) prepared in 2008 for this initiative provides essential input.

Targets and thematic priorities: The target group are companies. There are no pre-defined thematic priorities but sectoral priorities under the "internationalisation initiative III" include exporting education and services, ensuring technology networking, and promoting research and innovation.

Numerous support measures grouped into five clusters:

Cluster 1: How to do business abroad

[http://www.go-international.at/go-international/foerderprogramme/Export\\_Foerderung/Export\\_Foerderung/ueber-go-international1.php?KeepThis=true&TB\\_iframe=true&height=680&width=1000](http://www.go-international.at/go-international/foerderprogramme/Export_Foerderung/Export_Foerderung/ueber-go-international1.php?KeepThis=true&TB_iframe=true&height=680&width=1000)Cluster

2: Strengthen strengths

[http://www.go-international.at/go-international/foerderprogramme/Export\\_Foerderung/Export\\_Foerderung/ueber-go-international1.php?KeepThis=true&TB\\_iframe=true&height=680&width=1000](http://www.go-international.at/go-international/foerderprogramme/Export_Foerderung/Export_Foerderung/ueber-go-international1.php?KeepThis=true&TB_iframe=true&height=680&width=1000)Cluster

3: Exporting Know-how

[http://www.go-international.at/go-international/foerderprogramme/Export\\_Foerderung/Export\\_Foerderung/ueber-go-international1.php](http://www.go-international.at/go-international/foerderprogramme/Export_Foerderung/Export_Foerderung/ueber-go-international1.php)



[?KeepThis=true&TB\\_iframe=true&height=680&width=1000](#)Cluster

4: From exporting to integrated value-chains

[http://www.go-international.at/go-international/foerderprogramme/Export\\_Foerderung/Export\\_Foerderung/ueber-go-international1.php](http://www.go-international.at/go-international/foerderprogramme/Export_Foerderung/Export_Foerderung/ueber-go-international1.php)

[?KeepThis=true&TB\\_iframe=true&height=680&width=1000](#)Cluster

5: Communicating Austria

Several support measures are directly or indirectly targeting RTDI, such as the support measure “1.6.2 Future journeys to high-tech centres”, “1.8.3 Export vouchers for technology companies”, “2.9.0 Tech-Network”, “2.10.0 Tech-Approach”, “3.2.1 Education export to access education markets abroad”.

Duration: long-term (since 2003)

Regional focus: Regional **priorities** are overseas markets with strong growth potential.

Budget: €39m in funds are earmarked for the current period of 2011/2012 explicitly under this instrument only.

Monitoring and evaluation: Evaluation studies carried out by WIFO and the Vienna University of Economics and Business confirm the high degree of target attainment:

- Export basis widened: even in the crisis year 2009 the number of new exporters increased.
- Export structure diversified: positive results have recently been achieved in growing markets such as Turkey and BRICS (Brazil, Russian Federation, India, China, South Africa) on the one hand, and in knowledge- and innovation-intensive services and – starting from a very low level – education exports on the other.

Shift in priorities: from Eastern Europe to overseas export markets.

Changes in budgets since 2003: Slightly increasing

Contact person: Export & Investment Policy Division of the BMWFJ and Ms. Stefanie Rammer, Ms. Iris Achmann, Ms. Christine Setz-Tchakhava (all WKO)

Url:

<http://www.en.bmwfj.gv.at/ExternalTrade/InternationalisationInitiative/Seiten/default.aspx>

[http://www.go-international.at/go-international/foerderprogramme/Export\\_Foerderung/Export\\_Foerderung/index.php](http://www.go-international.at/go-international/foerderprogramme/Export_Foerderung/Export_Foerderung/index.php)

c) Further policies and instruments targeting STI internationalisation with 3<sup>rd</sup> countries under the authority of BMWFJ:

- COIN (<http://www.ffg.at/coin-cooperation-innovation>) (find more information below)
- strategic programme helping businesses to move their headquarters and production centres to Austria (<http://www.investinaustria.at>) implemented by the Austria Business Agency with a special emphasis on the “Research Location Austria” initiative
- internationalisation of clusters (<http://www.awsg.at/Content.Node/46819.php>) implemented by AWS
- research focus on international economic relations (<http://www.fiw.ac.at>) implemented by the Research Centre International Economics

- business platform for corporate social responsibility (CSR) and sustainable development in Austria (<http://www.respect.at>) implemented by the Austrian Business Council for Sustainable Development
- innovation protection programme implemented by AWS (<http://www.awsg.at/Content.Node/service/patent/46921.php>) with a special focus on China, but also Latin America, India and Russia

## **FFG**

FFG, the Austrian Research Promotion Agency is the major funding agency for applied research. FFG was founded on 1 September 2004. It is owned by BMVIT and BMWFJ, but as a provider of funding services the FFG also works for other national and international institutions. Although the main clients of FFG are researchers from Austrian based companies and academic institutions, it runs a few important instruments which are also relevant for 3<sup>rd</sup> country RTDI cooperation:

### *a) “competence headquarter” programme*

**Role:** Competence Headquarters is a further development of the Headquarter Strategy launched by the Federal Ministry for Transport, Innovation and Technology (bmvit).

**Objectives:** The new focus is on strengthening and expanding existing R&D headquarters through improving the networking with Austrian research institutions. Thus, structural effects should be attained. Moreover, the “competence headquarter” programme can still be employed for attracting new R&D headquarters to Austria.

**Targets and thematic priorities:** The target group are internationally operating enterprises interested in opening-up and expanding existing R&D units in Austria. There are no thematic restrictions.

**Duration:** since 2004 ongoing

**Regional focus:** establishment of foreign-owned R&D units in Austria.

**Budget:** €18.0m (planned budget for grants in 2012), €27.2m (actual budget for grants in 2010) and €20.0m (actual grants in 2009). The appropriated budget between 2004 and 2009 was in total €114.8m (Geyer and Tiefenthaler 2011)

**Monitoring and evaluation:** In-house monitoring is done by FFG. A critical external evaluation was carried out by Technopolis in 2010/2011 (asserting low additionality).

**Shift in priorities:** Yes, there was a shift from attracting R&D units from abroad to a better integration and capitalisation of R&D units of international oriented companies operating in Austria into the national system of innovation. From the supported companies most originated from Austria (71%). Only 4% have had their main headquarter outside Europe.

**Changes in budgets since 2004:** slightly decreasing

**Contact person:** Mr. Peter Baumhauer (FFG)

**Url:** <http://www.ffg.at/competence-headquarters>

### *b) COIN (CIR-CE)*

**Role:** COIN – Cooperation & Innovation – is a joint initiative launched by the Federal Ministry for Transport, Innovation and Technology (bmvit) and the Federal Ministry of Economy, Family and Youth (BMWFJ). COIN, as a portfolio programme, includes the former CIR-CE programme of the BMWFJ, which was explicitly promoting international RTDI cooperation of Austrian companies, facilitated by intermediaries (such as technology centres or cluster) and supported by academic research performers, with



companies and research performers from Central, Eastern and Southeast European countries.

Objectives: COIN aims to contribute towards fostering Austria's innovation performance by a better and broader transposition of knowledge into innovation within two programme lines.

- The "Structure" line focusing on application oriented research and technology organisations should lead to an increase in the overall number of qualified R&D partners, particularly competent for the requirements of SMEs.
- The "Cooperation and Network" line (COIN-Net) encourages technology transfer within entrepreneurial cooperation schemes, thus raising the level of innovation within businesses and strengthening their cooperation capacities. It focuses on output-oriented cooperation projects to develop and improve innovative products, processes and services.

COIN also contains transnational cooperation opportunities. Strategic cooperation projects between Austria and South Eastern/Eastern Europe are particularly addressed (at every second call of COIN-Net). This regional cooperation focus lies with the responsibility of the BMWFJ.

Targets and thematic priorities: The target group are first of all companies ready to collaborate with universities of applied sciences, intermediaries (such as impulse centres) and non-university research institutions in specific R&D and networking projects. COIN is not restricted to any research area or technology field.

Duration: CIR-CE (now incorporated under COIN as of 2008) exists since 2006.

Regional focus: Austria, but cooperation with Southeast European Countries and Eastern European countries is supported too.

Budget: €4.54m between 2006 and 2010. Projects are funded by grants of up to 70% of the total eligible costs.

Monitoring and evaluation: In-house monitoring is done by FFG. An external evaluation was carried out by Technopolis in 2010/2011. The evaluators recommended refraining from a limited regional focus on Southeast and Eastern European countries (Warta and Geyer 2011).

Shift in priorities: Yes, regarding the external dimension (CIR-CE) the original regional focus was on RTDI cooperation and networking with Central European Countries neighbouring Austria, which shifted towards Southeast and Eastern European countries.

Changes in budgets: decreasing as regards the international dimension

Contact person: Mr. Martin Reishofer (FFG)

Url: <http://www.ffg.at/coin-cooperation-innovation>

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