S&T International Cooperation Network for Central Asia and Southern Caucasus

Deliverable Title	**D5.2b - Report on statistics for the key institutions with emphasis on regional perspectives and challenges for strengthening the cooperation with EU scientists**
Deliverable Lead:	ARCHIMEDES
Related Work package:	WP5 - Analyses, Monitoring and Review
Author(s):	Ülle Must, Ervin Trofimov
Dissemination level:	Public
Due submission date:	31/10/2012
Actual submission:	15/06/2013
Project Number	• 244417
Instrument:	• Coordination and Support Action (CSA)
Start date of Project:	01/04/2010
Duration:	36 months

Abstract	This report was prepared within the FP7 project “Science and Technology International Cooperation Network for Central Asia and Southern Caucasus Countries – INCONET CA/SC”. as one of the outcomes of the IncoNet CA/SC Work Package 5 "Analysis, Monitoring and Review", Task 5.2b “ Report on statistics for the key institutions with emphasis on regional perspectives and challenges for strengthening the cooperation with EU scientists”. This deliverable aims to provide more information for formation of the new scientific partnerships between CA/SC countries and EU through the identification and monitoring of

national key research institutes in CA/SC countries.

Project funded by the European Commission under the International cooperation activity of the Capacities Programme of the 7th European Framework Programme for RTD.

Versioning and Contribution History

Version	Date	Modification reason	Modified by
v.01	04/10/2012	First version	Ervin Trofimov
v.02	20/02/2013	Version ready for peer review	Ervin Trofimov
v.03	10/06/2013	Peer review	Gabriela Cikikyan Martin Felix Gajdusek
v.04	11.06.2013	Final version	Ervin Trofimov

Table of Contents

EXECUTIVE SUMMARY

This report was prepared within the FP7 project “Science and Technology International Cooperation Network for Central Asia and Southern Caucasus Countries – INCONET CA/SC”. as one of the outcomes of the IncoNet CA/SC Work Package 5 "Analysis, Monitoring and Review", Task 5.2b “ Report on statistics for the key institutions with emphasis on regional perspectives and challenges for strengthening the cooperation with EU scientists”. This deliverable aims to provide more information facilitating formation of the new scientific partnerships between CA/SC countries and EU through the identification and monitoring of national key research institutes in CA/SC countries.

The years 2000-2012 saw an increase in scientific activity in the CA/SC region. This can be seen both in the number of project proposals and in other models of international cooperation coming from the region. There were 15 retained projects with the total Community requested financial contribution of € 74.5 million.

However, there remain several bottlenecks for successful cooperation. In some years there are no applications present: in 2008 in case of Tajikistan, in 2010 in case of Kyrgyzstan and Turkmenistan[11]. One of the major bottlenecks is the non-existence of FP7 National Contact Points (as from now on NCPs). NCPs provide the main structure for guidance, practical information and assistance on all aspects of the participation in EU framework programmes. At this moment, according to CORDIS, Kyrgyzstan has two NCP-s while both Tajikistan and Turkmenistan have none. NCP-s should be opened in every country in accordance with the internationally competitive scientific fields in order to build some platforms for easy access to key institutions and facilitate international cooperation.

[1] Source:E-CORDA

ABBREVIATIONS AND DEFINITIONS

KG	Kyrgyzstan
TJ	Tajikistan
TM	Turkmenistan
IncoNet	International Cooperation Network
FP7	EU Seventh RTD Framework Programme, is implemented during the period of 2007- 2013
EECA	Eastern Europe and Central Asia. The EECA region includes countries countries ofArmenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova,Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan
CA/SC	Central Asia and Southern Caucasus
CORDIS	Community Research and Development Information Service
AIC	Activities of International Cooperation
ENV	Environment
ICT	Information and Communication Technologies
RI	Research Infrastructures
ISI WoS	Web of Science
E-CORDA	External Common Research Data Warehouse

1. INTRODUCTION: REPORT OBJECTIVES AND PLANNED USE OF INFORMATION

The objective of the report is to offer a comprehensive overview of the activity of key institutions of TJ, TM and KG in framework programme projects as well as co-publishing cooperation during the timeframe of 2000-2012. The activity of institutions is compared on a country basis at various levels. At the end of the report, suggestions for improving international cooperation are offered.

2. METHODOLOGY OF THE ANALYSIS

This report focuses on statistics for key institutions of TJ, TM and KG.

The basis of current report is the E-CORDA online reporting facility, which enabled access on the outcome of concluded FP7 calls for proposals, including participation and performance statistics of the key institutions. Bibliometric data is sourced from ISI Web of Science (ISI WoS).

Given the small number of successful projects over the years, as well as to give a better descriptive overview of the situation, the data will be analysed and presented in the span of 2000-2012 (as of January). The period starting from 2000 is also effectively used in other deliverables concerning the analysis of the key institutions in WP3 and WP5 of IncoNet CA/SC.

The basis for the analysis consists of the following statistics:

- Project proposals for the period of 2000-2012 by programme, distribution of budget, priority area, success rate, partner activity and geographical location
- Bibliometrical data

2.1. DEFINITION OF NATIONAL KEY RESEARCH INSTITUTIONS

In this report under national key research institutions in KG, TJ and TM, we understand public or private research units which are centred around a specific scientific field (scientific institutes, national research centres (or institutes thereof), faculties/institutes of universities, independent laboratories or other respective organisations) which:

• are nationally important research organisations that have a capacity to perform RTD tasks of a national and international importance;

• have sufficient research potential in their field of science as reflected in international and national scientific publications or patents or other outcome;

• have capacity to implement joint research projects with EU MS/AC organisations (have participated in international research projects or are prepared to participate in the future). This includes communication skills of scientists in English;

• even if not yet active in the research cooperation with EU, have unique regional research expertise and/or own or use unique research infrastructure (specific equipment for research or databases/library/archives) that are of interest to potential European partners.

3. INVENTORY OF KEY RESEARCH INSTITUTIONS: PERFORMANCE STATISTICS

3.1. TAJIKISTAN

Out of the 26 proposals submitted from Tajikistan in the period 2000-2012, 18 were rejected, 13 were eligible, 3 were reserved and 5 were retained for funding.

The number of successful applicants constitute 19% from total number of applicants.

Total applicant requested Community financial contribution was € 2,4 million.

(Total proposal requested Community financial contribution was € 56,4 million).

As we see from Figure 1, the budget in retained projects comes exclusively from Cooperation programme (60% - 3 projects) and Capacities programme (40% - 2 projects).

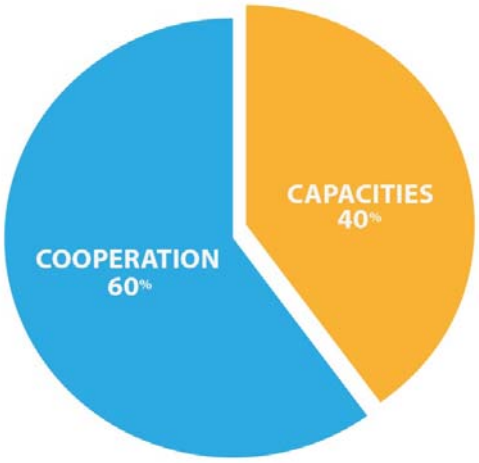

Figure 1 - Distribution of budget in retained projects, TJ 2000-2012. Source: E-CORDA

It is evident from Figure 2 that the scope of activity is extremely low. Successful projects amount to 5 during a 12-year period.

Priority area	Nr of projects
Activities of international cooperation	2
Environment	1
Information and Communication Technologies	1
Space	1

Figure 2 - Retained projects by priority area, TJ 2000-2012. Source: E-CORDA

As seen in Figure 3, the programmes are evenly represented across the thematic fields. The priority area for Activities of International Cooperation has received more proposals and had more retained projects than any other priority area.

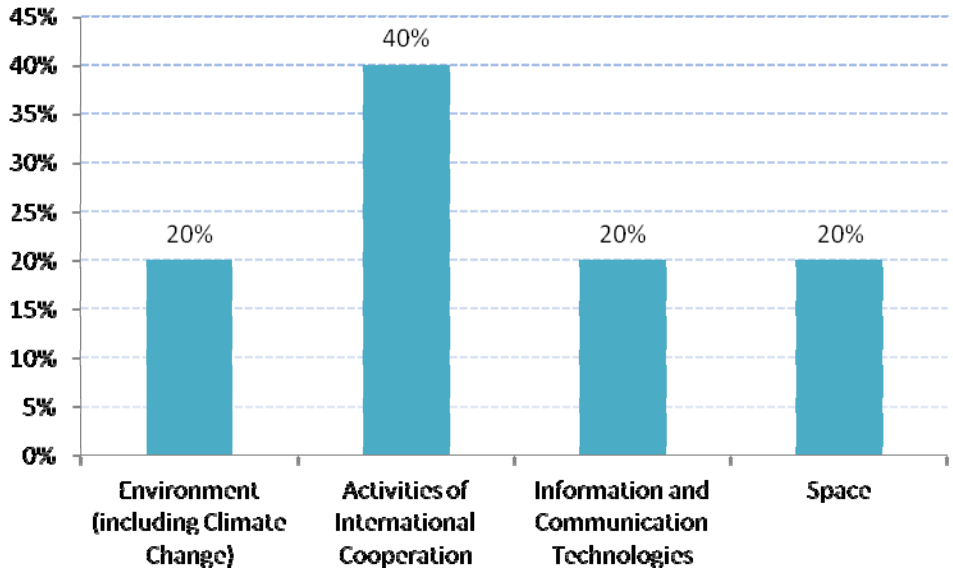

Figure 3 - Successful projects by programme (%), TJ 2000-2012. Source: E-CORDA

Partners

On average, the number of partners in the retained proposals could be considered high. The average number of partners per project is 19, with two retained projects having 30 partners.

Key institutions and location:

Proposals from the following institutions were retained:

1. State Agency of hydrometeorology of the Republic of Tadjikistan
2. Society for Development of Scientific Cooperation (SODESCO), Tajikistan NIP for EU Framework Porgrams
3. Olimoni Navin
4. Society for Development of Scientific Cooperation (SODESCO)

5. Institute of Geology, Earthquake Engineering and Seismology, Academy of Sciences, Republic Tajikistan

All key institutions which were reponsible for the retained projects are located in Dushanbe, which fortifies itself as the centre of scientific and economic activity in Tajikistan.

Bibliometrics:

During the period of 2000-2012, Tajikistan co-published a total number of 529 articles with international partners. Main co-publishers were: Russia, Pakistan, USA and Germany. Articles co-published with the biggest contributor, Russia, amounted to 18 % of total (Figure 4).

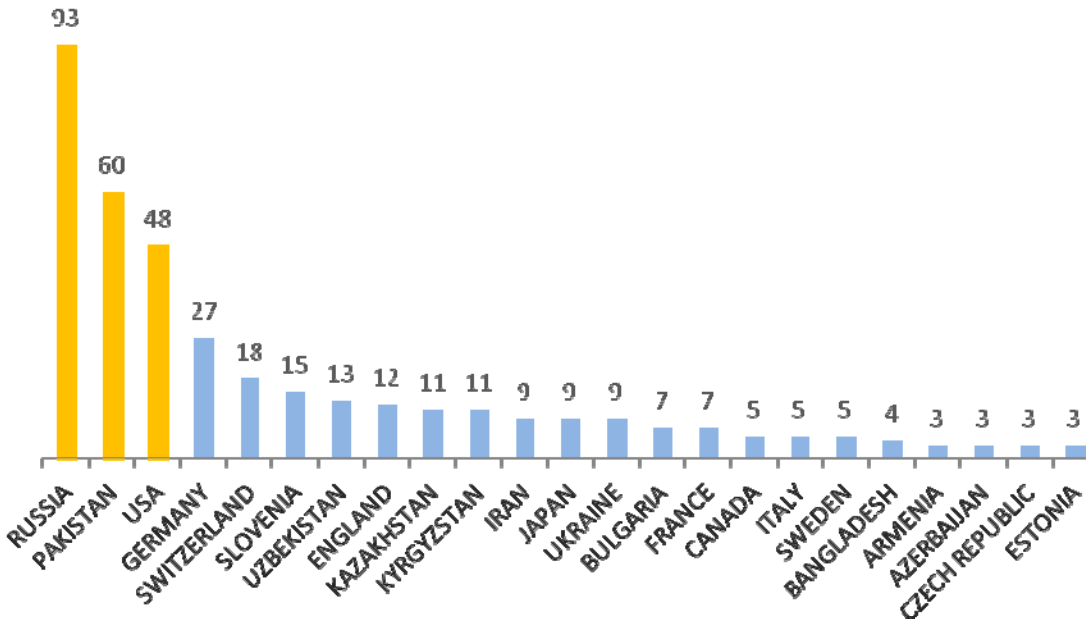

Figure 4 - Co-published articles for TJ 2000-2012. Source: ISI WoS

The most profilic institution has been the Tajik Academy of Sciences with 139 records (26% of total co-published articles).

WoS co-publishing analysis[2]

Main research areas according to WoS are chemistry, physics and mathematics. Publications in WoS categories are primarily in **mathematics**, **applied physics** and **astronomy** and **astrophysics**.

There has been a slow but steady increase in academic output from Tajikistan over the last 10 years. The number of co-publications per year is currently around 60.

The majority of publications (98%) are published in English with Russian being the second language (2%).

Main source titles for publications are: Doklady Mathematics, Russian Journal of Inorganic Chemistry, Russian Journal of Applied Chemistry and Geochemistry International.

Most active organizations in Tajikistan (Data from Wos and Scopus, 2012):

1. TAJIK ACAD SCI - Academy of Sciences of the Republic of Tajikistan
2. ACAD SCI TAJIKISTAN -
3. ACAD SCI REPUBL TAJIKISTAN -
4. TAJIK STATE NATL UNIV - Tajik State National University

Note: "TAJIK ACAD SCI, ACAD SCI TAJIKISTAN AND ACAD SCI REPUBL TAJIKISTAN" appear to be one and the same institution: Academy of Sciences of the Republic of Tajikistan. This shows lack of conduct and standards in presentation of scientific data and information shortage.

3.2. TURKMENISTAN

Out of the 12 proposals submitted from Turkmenistan in the period 2000-2012, 7 were rejected, 8 were eligible,, 2 were reserved and 3 were retained for funding.

The number of successful applicants constitutes 25% from total number of applicants.

Total applicant requested Community financial contribution was € 106,282.(Total proposal requested Community financial contribution was € 2,9 million).

[2] Based on data from WoS and Scopus 2000-Jan.2012

As we see from Figure 5, the budget in retained projects comes exclusively from Cooperation programme (67% - with 2 projects) and Capacities programme (33% - with 1 project).

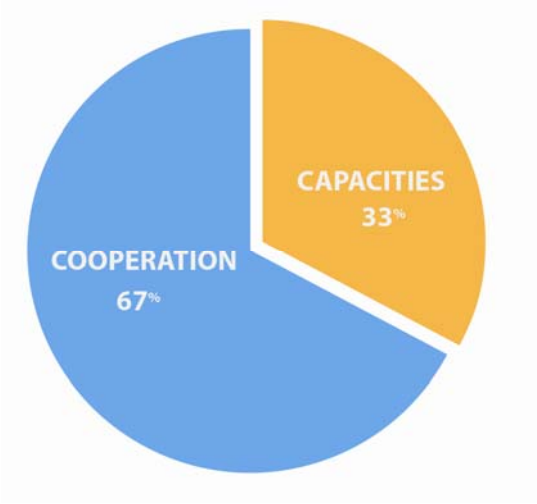

Figure 5 - Distribution of budget in retained projects, TM 2000-2012. Source: E-CORDA

Figure 6 shows the poor activity in TM: 3 successful projects during a 12-year period.

Priority area	Nr of projects
Activities of international cooperation	1
Environment	1
Information and Communication Technologies	1

Figure 6 - Retained projects by priority area, TM 2000-2012. Source: E-CORDA

As we can see in Figure 7, the three main programmes are evenly represented.

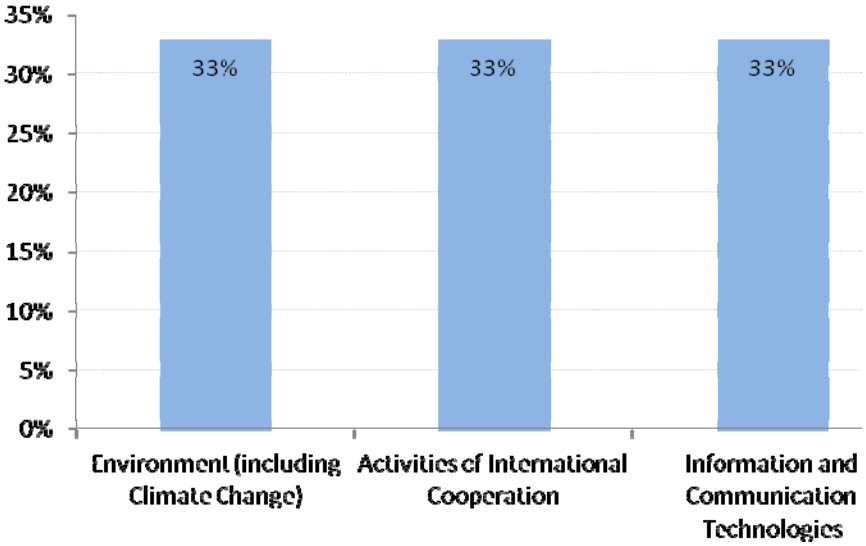

Figure 7 - Successful projects by programme (%), TM 2000--2012. Source: E-CORDA

Partners

On average, the number of partners could be considered high. The average number of partners is 19, with one retained project having 30 partners.

Key institutions and location:

Proposals from the following institutions were retained:

1. National Institute of Deserts, Flora and Fauna of the Ministry of Nature Protection of Turkmenistan
2. Supreme Council Of Scince and technology under the President of Turkmenistan
3. Academy of Sciences of Turkmenistan

All key institutions which were reponsible for the retained projects were located in Ashgabat, which fortifies itself as the centre of scientific and economic activity in Turkmenistan.

Bibliometrics:

During the period of 2000-2012 Turkmenistan co-published a total number of 114 articles. Main co-publishers were: Turkey, Russia, Israel and USA. Articles co-published with the biggest contributor, Turkey, amounted to 29 % of total (Figure 8).

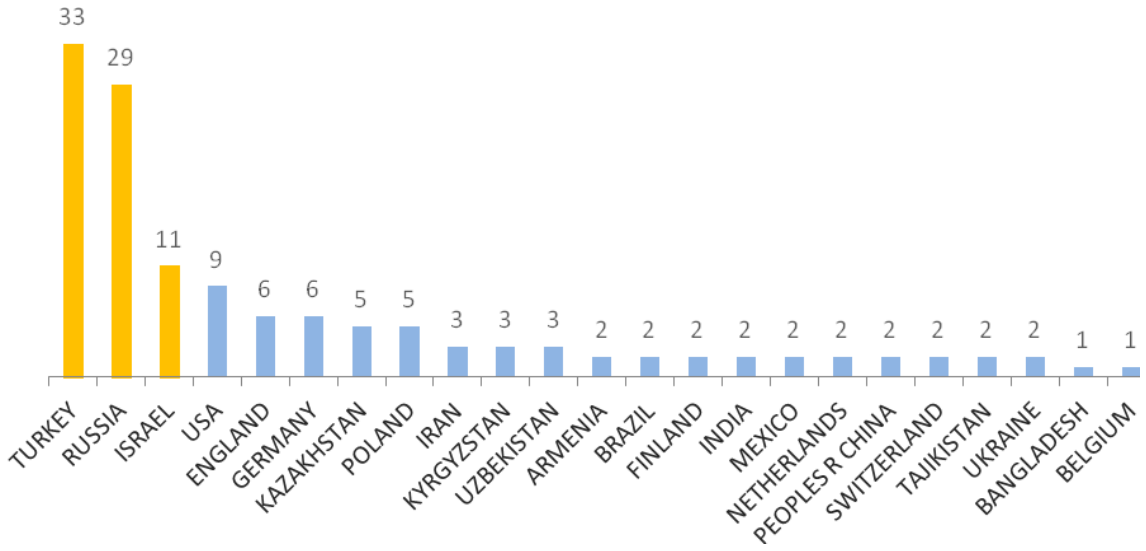

Figure 8 - Co-published articles for TM 2000-2012. Source: E-CORDA

The most profilic institution has been the International Turkmen Turkish University (ITTU) with 23 records (20% of total published).

WoS co-publishing analysis[3]

Main research areas of TM according to WoS are: **mathematics, agriculture and physics.**

Academic output has had a slow increase during the last years with around 10 publications per year.

The majority of publications are published in English (99%) with Russian being a distant second.

Main source titles are: Abstract and Applied Analysis, Applied Mathematics and Computation, Computers Mathematics with Applications.

Most active organizations in Turkmenistan (WoS and Scopus, 2012):

1. Fatih UNIV - Fatih University
2. ITTU - International Turkmen Turkish University
3. TTU - INT TURKMEN TURKISH UNIV - International Turkmenistan Turkish University
4. TURKMEN STATE UNIV - Turkmenistan State University

[3] Base on data from Wos and Scopus 2000-Jan.2012

Note: ITTU and TTU appear to be the same institution. This shows lack of conduct and standards in presentation of scientific data and information shortage.

3.3. KYRGYZSTAN

Out of the 34 proposals submitted from Kyrgyzstan in the period 2000-2012, 22 were rejected, 22 were eligible, 5 were reserved and 7 were retained for funding.

The number of successful applicants constitute 21% from total number of applicants.

Total applicant requested Community financial contribution was € 267956.

(Total proposal requested Community financial contribution was € 15, 2 million).

As we see from Figure 9, the budget in retained projects comes exclusively from Cooperation programme (57% - with 4 projects) and Capacities programme (43% - with 3 project).

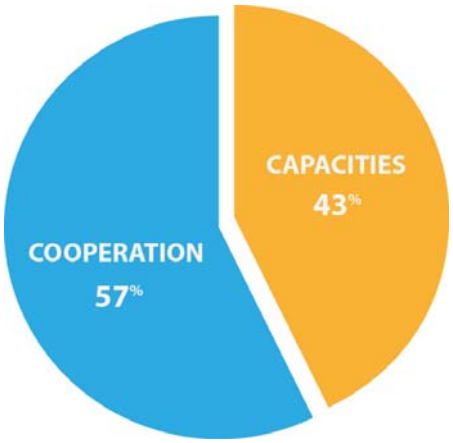

Figure 9 - Distribution of budget in retained projects, KG 2000-2012. Source: E-CORDA

Figure 10 shows the activity of KG in 12 years: 7 retained projects.

Priority area	Nr of projects
Activities of international cooperation	3
Environment	2
Information and Communication Technologies	1
Space	1

Figure 10 - Retained projects by priority area, KG 2000-2012. Source: E-CORDA

As we can see in Figure 11, the programmes most represented are Environment and International Cooperation Activities. The Space programme is also represented here with one project.

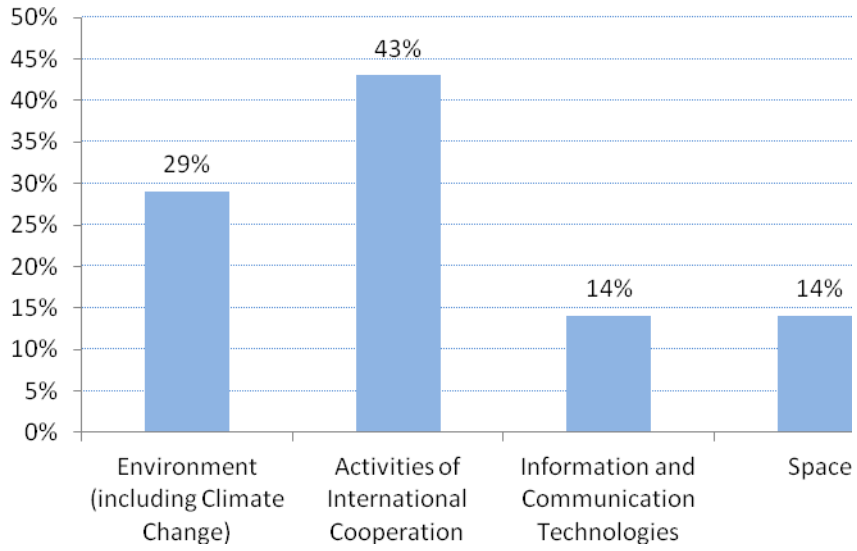

Figure 11 - Successful projectsby programme (%), KG 2000-2012. Source: E-CORDA

Partners

On average, the number of partners could be considered high. The average number of partners is 23, with three retained projects having 30 partners and one 37 partners.

Proposals from the following institutions were retained:

1. Institute of Water Problems & Hydropower National Academy of Sciences of the Kyrgyz Republic
2. Agency of hydrometeorology on the Ministry for Emergency Situation of the Republic of Kyrgyzstan
3. The National Library of the Kyrgyz Republic
4. Institute of Water problems and hydropower NAS KR
5. Public Foundation EnConsult
6. The Eurasian Institute of International Relations
7. Central-Asian institute for applied geosciences

Location:

All key institutions which were reponsible for the retained projects were located in Bishkek, which fortifies itself as the centre of scientific and economic activity in Kyrgyzstan.

Bibliometrics:

During the period of 2000-2012 Kyrgyzstan published a total number of 818 articles. Main co-publishers were: Russia, USA, Germany, Turkey. Articles co-published with the biggest contributor, Russia, amounted to 18 % of total (Figure 12).

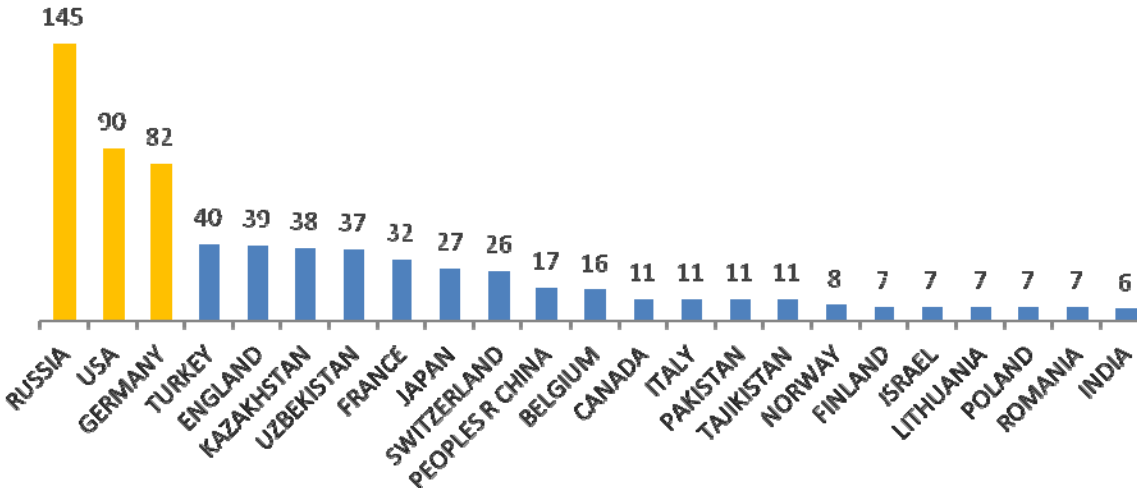

Figure 12 - Co-published articles for KG, 2000-2012. Source: ISI WoS

The most profilic institution has been the International Kyrgyz-Russian Slavic University (KYRGYZ RUSSIAN SLAV UNIV) with 23 records (20% of total published).

WoS co-publication analysis[4]

Main research areas of KG according to WoS are: **physics, geology and geochemistry/geophysics.**

Academic output has remained quite static from around 2005 with around 80 publications per year.

[4] Base on data from Wos and Scopus 2000-Jan.2012

The majority of publications are published in English (94%) with Russian language being second (6%).

Main source titles for publications are: Geologya I Geofizika, Izvestiya Physics of the Solid Earth, NATO science series IV Earth and Environmental Sciences.

Most active organizations in Turkmenistan:

1. KYRGYZ RUSSIAN SLAV UNIV - Kyrgyz-Russian Slavic University
2. NATL ACAD SCI - Kyrgyz National Academy of Sciences
3. NATL ACAD SCI KYRGYZ REPUBL -
4. KYRGYZ STATE MED ACAD - Kyrgyz State Medical Academy

Note: NATL ACAD SCI and NATL ACAD SCI KYRGYZ REPUBL appear to be the same institution. This shows lack of conduct and standards in presentation of scientific data and information shortage. With all three countries there seems to be a lack of standardised names and acronyms for organizations.

4. COMPARISON BETWEEN ACTIVITY OF INSTITUTIONS IN TAJIKISTAN, TURKMENISTAN AND KYRGYZSTAN.

If we compare the institutions of the three countries, we will see a success rate that is considered good (around 20%). The activity in the region has become more active over the years, more so with the help of INCO NCP-s in Kyrgyzstan. TJ and TM are in need of their own NCP-s in order to foster communication with EU scientist.

The main priority areas for the three countries' institutions are Activities of international cooperation, Environment and Information and Communication technologies. TJ and KG also have projects in the Space priority area (see Figures 13 & 14).

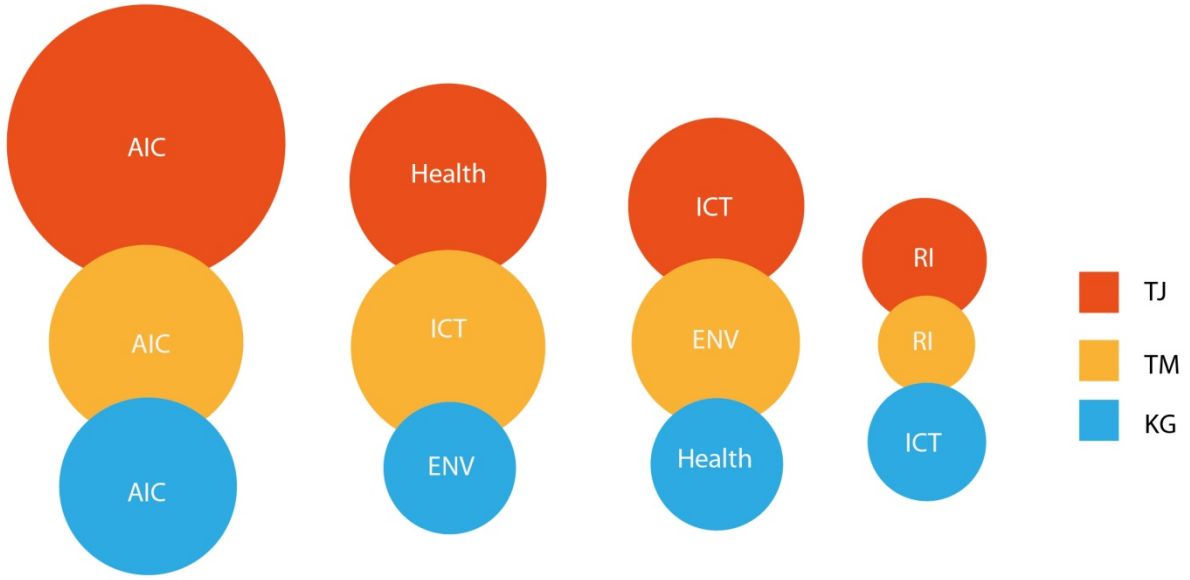

Figure 13 - Total distribution of project applicants by priority area and country. Graphic representation Source: E-CORDA 2000-2012

Country/Priority Area	TJ	TM	KG
Energy			2
Environment (including Climate Change)	1	3	5
Activities of International Cooperation	10	4	9
Health	5		5
Space	1		1
Socio-economic sciences and Humanities	1		3
Food, Agriculture, and Biotechnology	1		2
Research Infrastructures	2	1	2
Information and Communication Technologies	4	4	4
Marie-Curie Actions			1
Science in Society	1		

Figure 14 - Total project applicants by priority area and country. Numeric representation. Source: E-CORDA 2000-2012

On average, the number of partners listed for projects is fairly high, with the average number across the three countries being 20.

Main co-publishers for the three countries are Russia, USA, Germany, Turkey and Israel. In the region of CA/SC these are Uzbekistan and Kazakhstan. In terms of European partners

worth pointing out, the most intense collaborators in terms of co-publications are UK, Switzerland and France (see Figure 15).

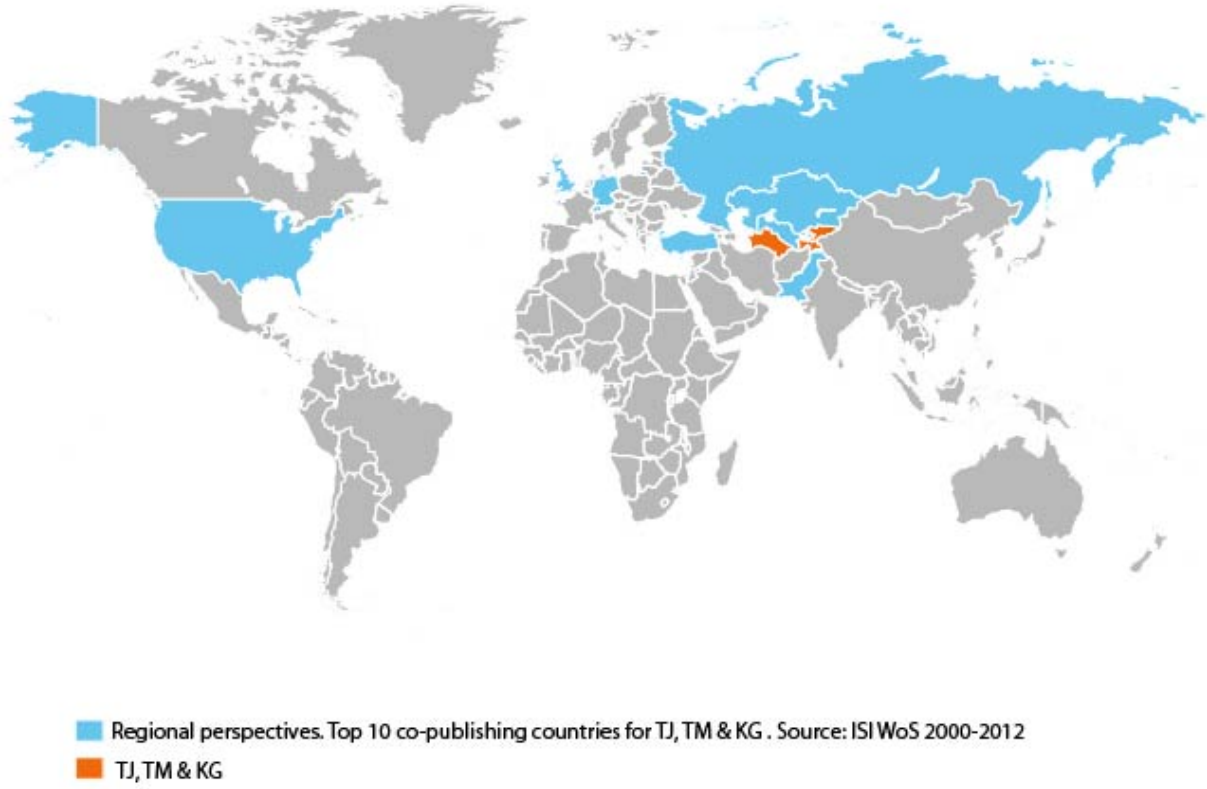

Figure 15 - Regional perspectives for top 10 co-publishing countries for TJ, TM & KG in the period of 2000-2012. Source: ISI WoS

CONCLUSION

The years 2000-2012 saw an increase in scientific activity in the CA/SC region. This can be seen both in activity of project proposals and other models of international cooperation coming from the region. There were 15 retained projects with the total Community requested financial contribution of € 74,5 million.

At the same time, there still remain some bottlenecks for successful cooperation. Some years there are no applications present: in 2008 in case of Tajikistan, in 2010 in case of Kyrgyzstan and Turkmenistan[56]. One of the major bottlenecks is the non-existence of NCP-s, which makes cooperation and connections between EU and CA/SC (including partner search) extremely difficult. NCPs provide the main structure for guidance, practical information and assistance on all aspects of participation in EU framework programmes. At this moment, according to CORDIS, KG has two NCP-s while both TJ and TM have none. NCP-s should be opened in every country in accordance to the major active scientific fields in order to build some platforms for easy access to key institutions and facilitate international cooperation.

There is also a lack of standardized names and acronyms for universities and other organisations, which makes it difficult to analyse data from databases like WoS and Scopus (used in this report). The lack of online presence and information on organisation from these countries makes it rather difficult to write a comprehensive and useful analysis with recommendations for improving cooperation with the EU. Indeed, there are some basic issues that need to be fixed first in order for effective communication to take place. This applies to both NCPs and IncoNet project partners from CA/SC region: without communication and feedback from their part, there is only so much we say that is not a guesswork.

In order for any successful cooperation with EU scientists to evolve, there should be first established the following:

- National Contact Points (NCP)
- Effective communication (availability, constant e-mail and web presence)
- Web presence for NCPs and organisations
- Standard accepted academic practice (works in accordance with international standards)

[5] Source: E-CORDS

[6] D5.7 Third annual monitoring report on EECA participation in FP7. Archimedes 2011

ANNEX

List of institutions with retained projects by country.

Source: ISI WoS 2000-2012

Kyrgyzstan:

- Institute of Water Problems & Hydropower National Academy of Sciences of the Kyrgyz Republic (KNAS)
- Agency of hydrometeorology on the Ministry for Emergency Situation of the Republic of Kyrgyzstan (KGHYDROMET)
- The National Library of the Kyrgyz Republic (NLKR)
- Public Foundation EnConsult (EnConsult)
- The Eurasian Institute of International Relations (EIMO)
- Central-Asian institute for applied geosciences (CAIAG)

Tajikistan:

- State Agency of hydrometeorology of the Republic of Tadjikistan (TJHYDROMET)
- Society for Development of Scientific Cooperation (SODESCO), Tajikistan NIP for EU Framework Porgrams
- Olimoni Navin (MS)
- Institute of Geology, Earthquake Engineering and Seismology, Academy of Sciences, Republic Tajikistan (IGEES AS RT)

Turkmenistan:

- National Institute of Deserts, Flora and Fauna of the Ministry of Nature Protection of Turkmenistan (NIDFF)
- Supreme Council Of Science and technology under the President of Turkmenistan (SCST)
- Academy of Sciences of Turkmenistan (AST)