

**Kooperation deutscher Forscher mit Drittstaaten im FP7 als
Grundlage zur nationalen Prioritätensetzung**

**Systematic approaches to set national priorities in international
R&D cooperation**

HEINRICHS, Gerold

Berlin
November, 2010

International Bureau of BMBF

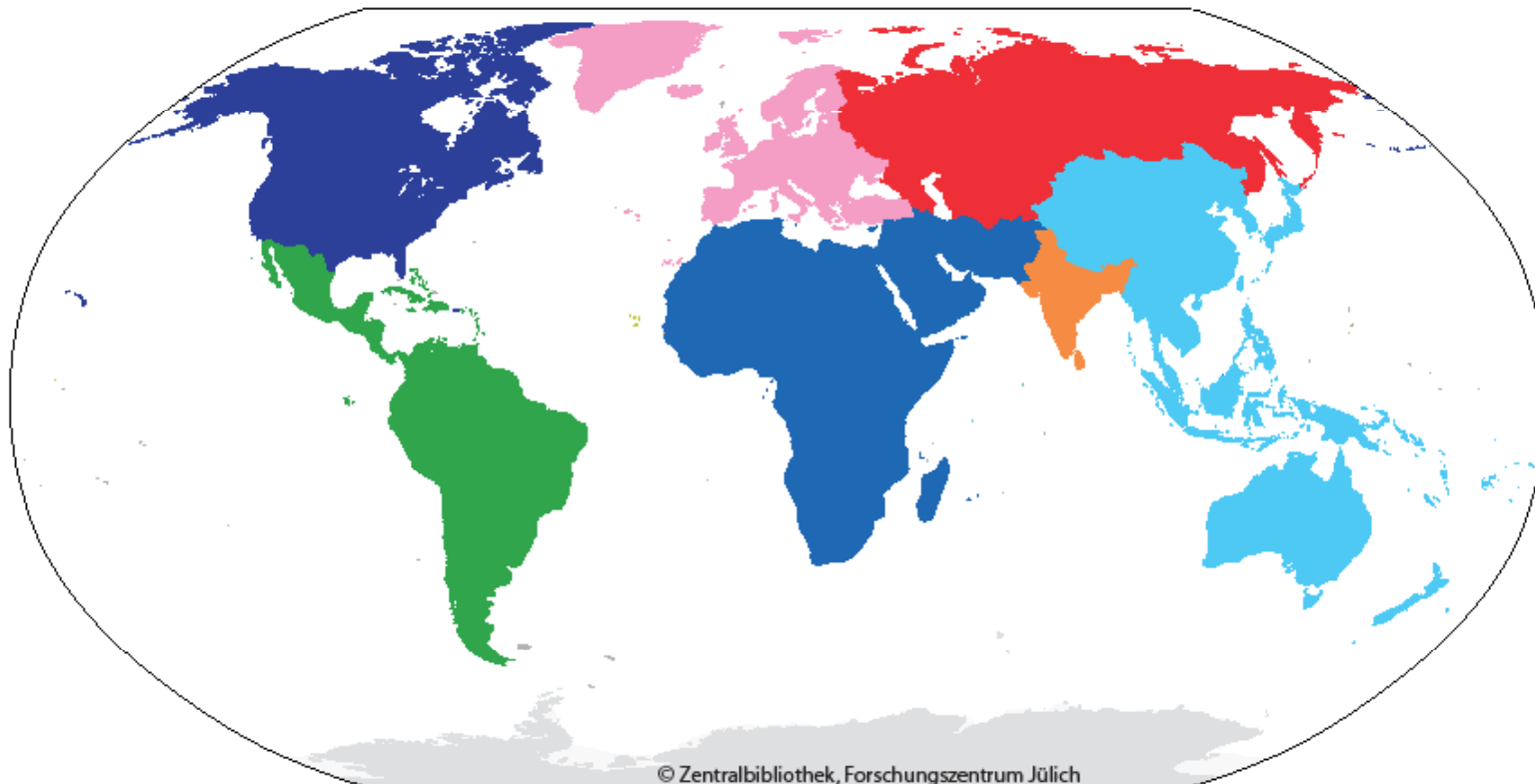
- project management agency of BMBF for international cooperation (unique in Europe)
- support the BMBF in planning and implementing international agreements and cooperation programmes. (Budget 25 Mio €)
- observe relevant international developments in the fields of science, research and technology. (e.g. [www. Kooperation-International.de](http://www.Kooperation-International.de))
- advise and support the stakeholders in Germany's scientific community when it comes to opening up new international networking opportunities and raising Germany's profile as a hub of science, research and innovation. (Conferences, Workshops, Matchmaking, Delegation etc.)
- are actively involved in the strategic development of international dimension of the European Research Area. (involved in around 25 EU-funded projects)

Analysis and Indicators for strategic planning

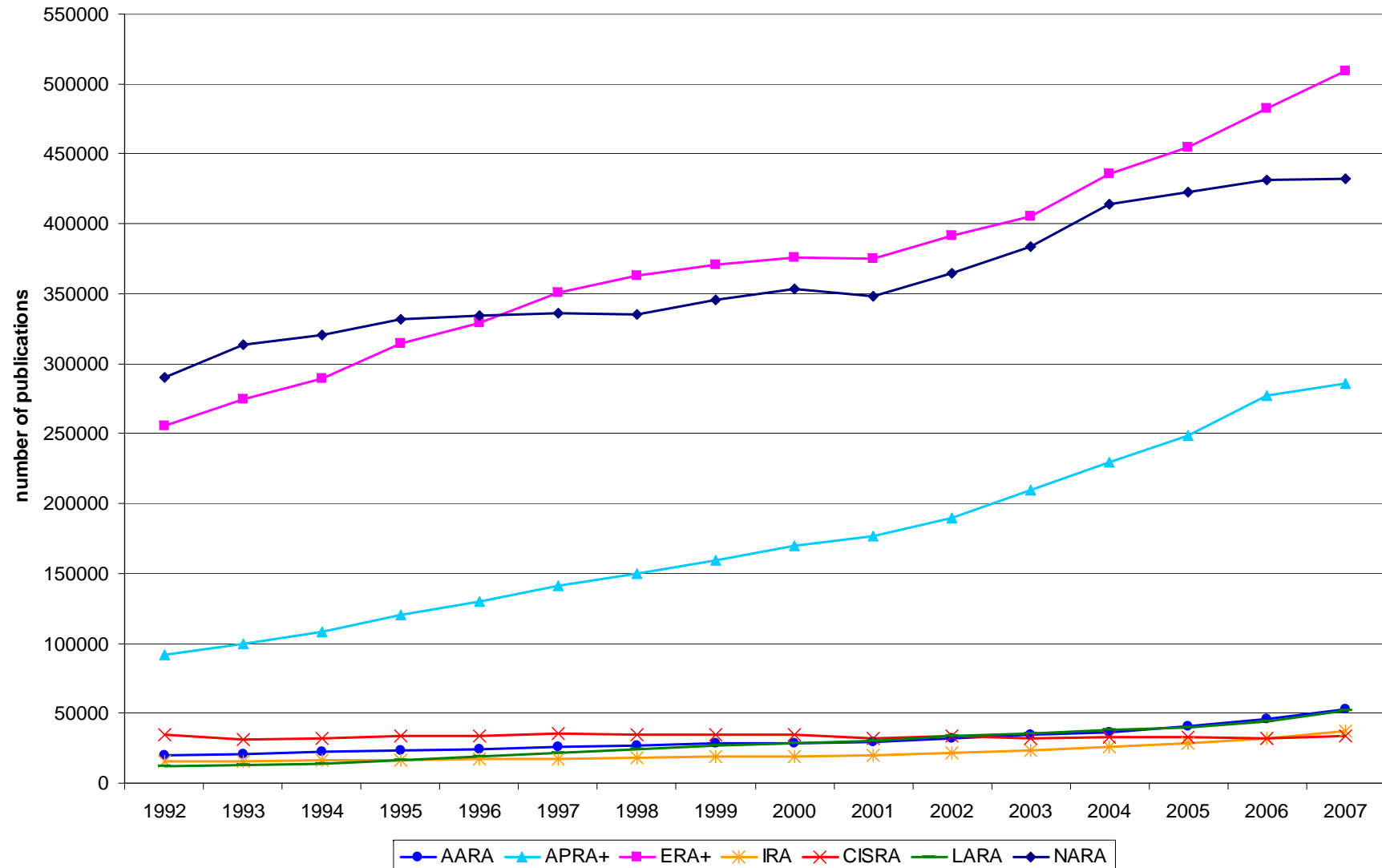
- History: STC-agreements, political reasons (e.g. Vietnam), existing cooperation, etc.
-
- Partnercountries/ -regions: Bibliometry, WB/KfW/WEF/OECD-Studies, World Competitiveness Report, R&D-Indicators, Patenting, FP-7-Involvement, Competitors
 - Partnerinstitutions: Bibliometry, FP-7-Involvement, Competitors International Rankings,
 - Areas and Topics: Bibliometry, FP-7-Involvement, Competitors, WB/UNESCO/OECD-Studies, Specific studies
 - Funding and Cooperation Instruments: FP-7-Involvement, Competitors Specific studies, Partnerorganisations

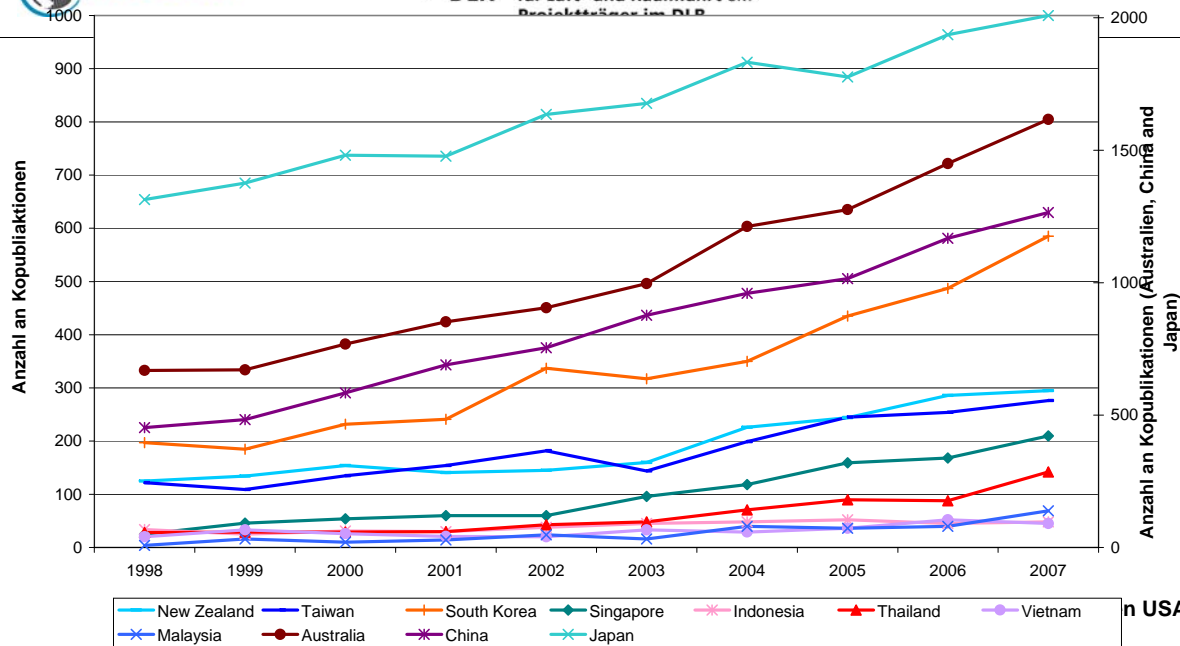
Bottom-up approach by open calls

Bibliometry: Relevance of the „Asian-Pacific Research Area“



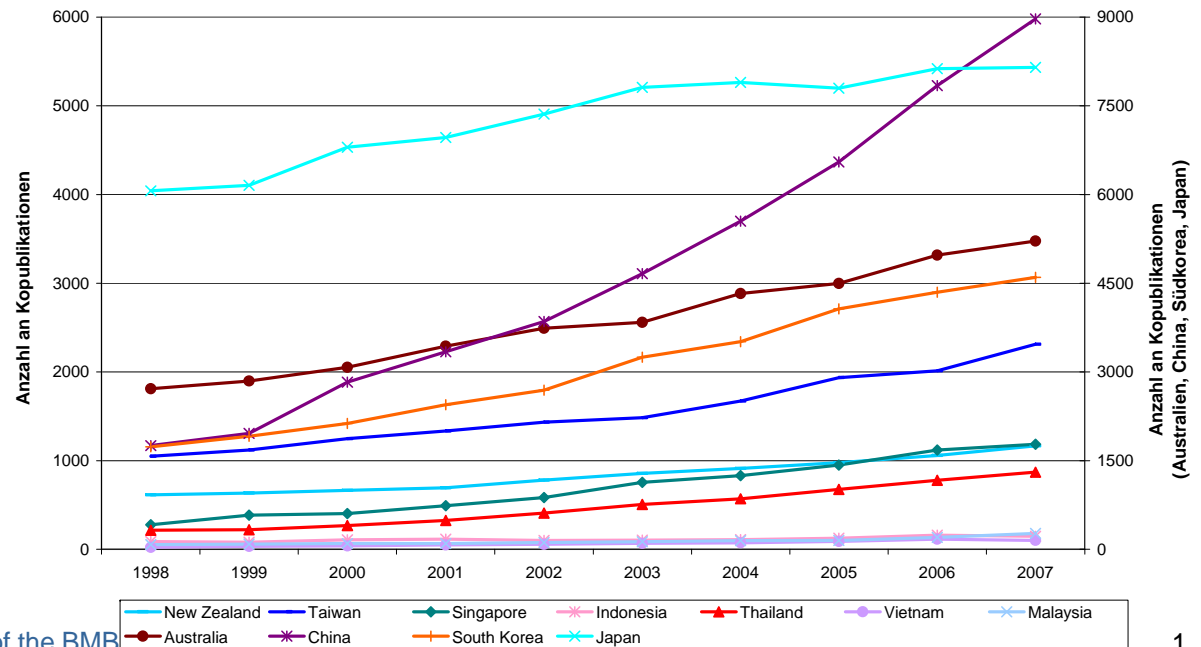
Publication output of worldwide research areas 1992 to 2007



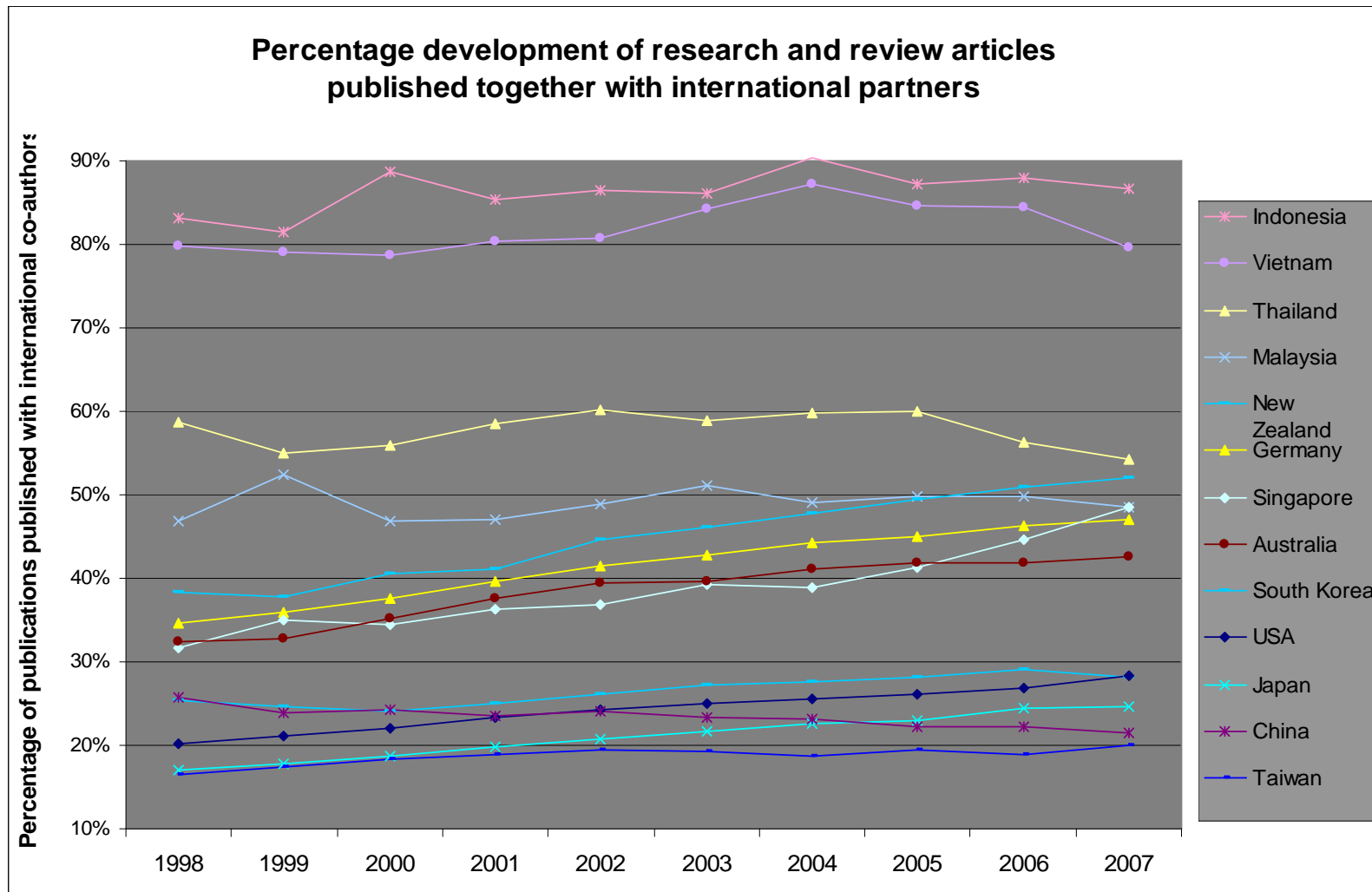


Copublications with Asia-Pacific Germany vs. US

Kopublikationen Deutschland mit asiatisch-pazifischen Ländern 1998-2007



Internationalisation of Research



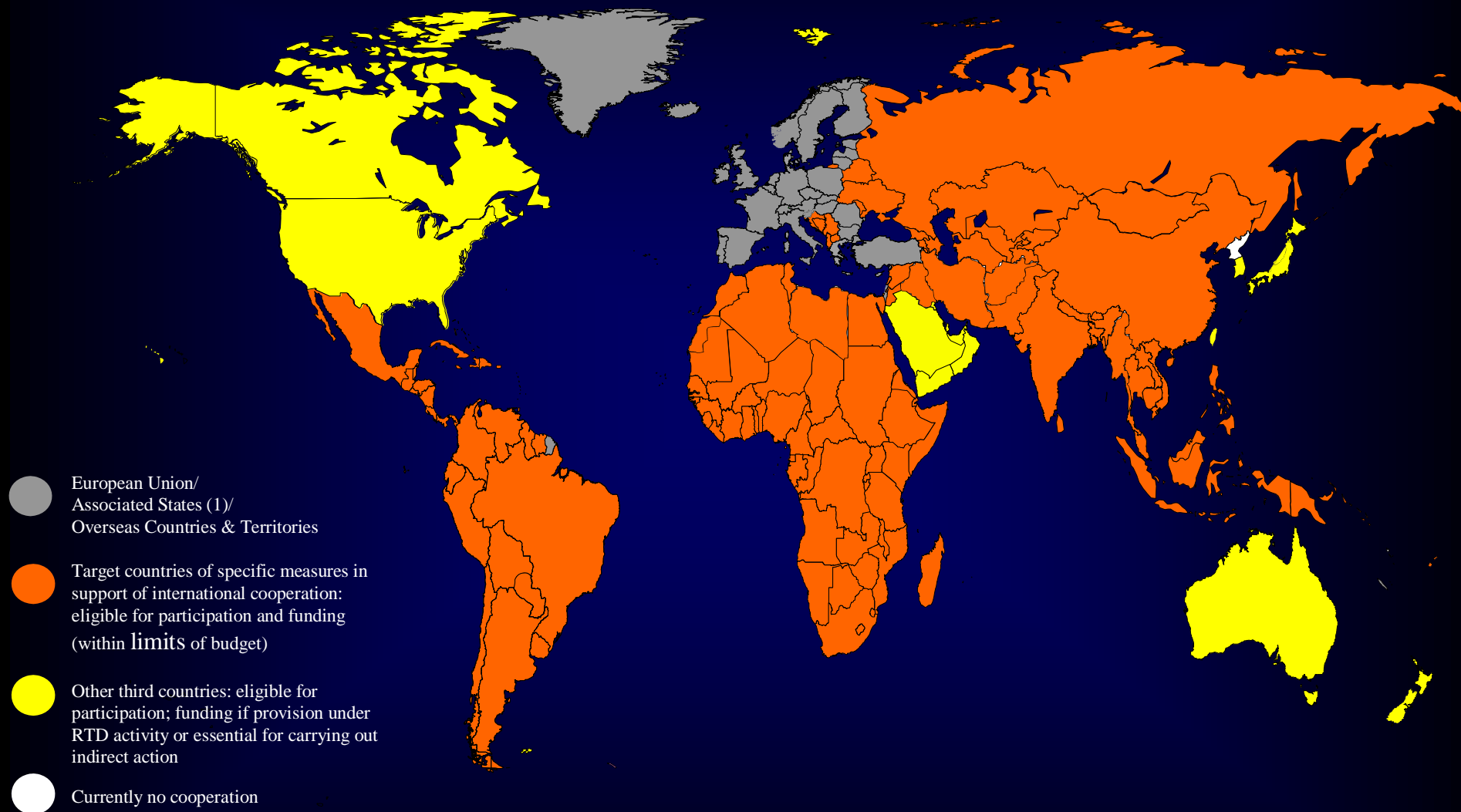
Patenting 2008 at US-Patent-Office (source: Technology Assessment and Forecast Report, PATENTING BY ORGANIZATIONS (CY 2008))

Page A1-1, Number of Utility Patents Granted By Year Of Patent Grant).

Total	157772	ISRAEL	1166	IRELAND	164
U.S. Origin	77501	SWITZERLAND	1112	MALAYSIA	152
Foreign Origin	80271	SWEDEN	1060	NEW ZEALAND	105
JAPAN	33682	FINLAND	824	BRAZIL	101
GERMANY	8915	INDIA	634	S. AFRICA	91
S.KOREA	7549	BELGIUM	510	HUNGARY	66
TAIWAN	6339	AUSTRIA	463	MEXICO	54
CANADA	3393	SINGAPORE	399	POLAND	54
FRANCE	3163	DENMARK	391	CZECH REPUBLIC	48
U.K.	3094	CHINA, HONG KONG S.A.R	311	ARGENTINA	32
ITALY	1357	SPAIN	303	SAUDI ARABIA	30
NETHERLANDS	1329	NORWAY	273	ICELAND	26
AUSTRALIA	1292	RUSSIAN F.	176	Others (68)	388
P.R. CHINA	1225				

Score		Gesamtrang von 133	Rang Basic Requirements / 133	Rang Efficiency Enhancers / 133	Rang Innovation Factors / 133
Land					
IL	Singapur*	3	2	2	10
	Deutschland	7	8	14	5
IL	Japan*	8	27	11	2
IL	Taiwan	12	18	17	8
IL	Australien*	15	14	9	21
IL	Südkorea*	19	23	20	16
IL	Neuseeland*	20	16	15	27
SL	Malaysia	24	33	25	24
SL	China*	29	36	32	29
SL	Brunei	32	19	76	81
SL	Thailand	36	43	40	47
SL	Indien*	49	79	35	28
E	Indonesien*	54	70	50	40
	Griechenland*	71	56	57	66
E	Vietnam	75	92	61	55
E	Sri Lanka	79	89	74	44
E	Philippinen	87	95	78	74
EL	Pakistan*	101	114	92	84
EL	Bangladesh	106	108	97	114
EL	Kambodscha	110	112	103	107
EL	Mongolei*	117	123	106	120
EL	Nepal	125	119	125	129
EL	Ost-Timor	126	109	132	132
EL	Und alle anderen Länder				

7th Framework Programme Participation by legal entities from third countries



FP6: Success rate in all thematic priorities for countries from ASIA, 4000 proposals -681 participants

Applicant Country Name	Number of Applicants from ASIA	Number of Participants	Success rate in applicants from ASIA
Bangladesh	83	5	6,02 %
Bhutan	4	2	50,00 %
Cambodia	23	7	30,43 %
China (People's Republic of)	1 940	370	19,07 %
India	784	128	16,33 %
Indonesia	118	25	21,19 %
Korea	80	17	21,25 %
Lao (People's Democratic Republic)	17	3	17,65 %
Malaysia	89	16	17,98 %
Maldives	1		
Mongolia	38		
Nepal	60	10	16,67 %
Pakistan	57	9	15,79 %
Philippines	89	17	19,10 %
Singapore	123	21	17,07 %
Sri Lanka	74	2	2,70 %
Thailand	213	29	13,62 %
Viet Nam	168	20	11,90 %
	3 961	681	17,19 %

Participation of *Asia-Pacific counties in EU-FP 7 (until 2009) and established NCP's*

	FP7			NKS
	Anträge	Projekte	Erfolgsrate	
Deutschland	17063	4037	23,7	
Griechenland	6015	916	15,2	
EU Total	21497		21,6	
Australien	134	51	38,1	20
Japan	94	25	26,6	
S. Korea	45	14	31,1	20
Neuseeland	35	13	37,1	20
Singapur	30	7	23,3	
Taiwan	21	6	28,6	12
China	642	104	16,2	1
Indonesien	68	9	13,2	4
Indien	509	113	22,2	2
Malaysia	45	9	20,0	im Aufbau
Thailand	74	20	27,0	20
Viet Nam	55	23	41,8	im Aufbau
Pakistan	17	3	17,6	
Philippinen	42	14	33,3	
Kambodia	16	5	31,3	1
Bagladesh	21	4	19,0	
Lao PDR	5		0,0	
Sri Lanka	11	1	9,1	
Mongolei	7		0,0	
Nepal	23	2	8,7	
Asien Gesamt	1894	423	25,2	
staaten Gesamt	8263	1616	19,6	
US	611	159	26,0	

FP7 contracts until 2009, Germany with Third Countries

Figures from contracts signed in FP7 calls for proposals launched from 2007 to May 2009 show that Germany's science and technology (S&T) cooperation with third countries (non EU member states/ non to FP 7 associated countries) represents 4.0 % of Germany's overall activities under FP7. Researchers or institutions from Germany have links with 17.841 contractors under FP 7 in total. 717 links account for partners in third countries. Collaboration with industrialised countries is leading with nearly one quarter (24.7 %) followed by East Europe/ Central Asia (21.8 %), Asia (21.1 %), Latin America (13.4 %) Africa (11.7 %) and the Mediterranean Partner Countries (7.4 %).

Variation of Germany's partner countries is rather high: Cooperation with Russia leads the top ten partner countries with 99 links followed by the USA, (74), China (62), India (49), Canada, South Africa (32), Ukraine (29), Argentina (26), Australia (23) and Brazil (20).

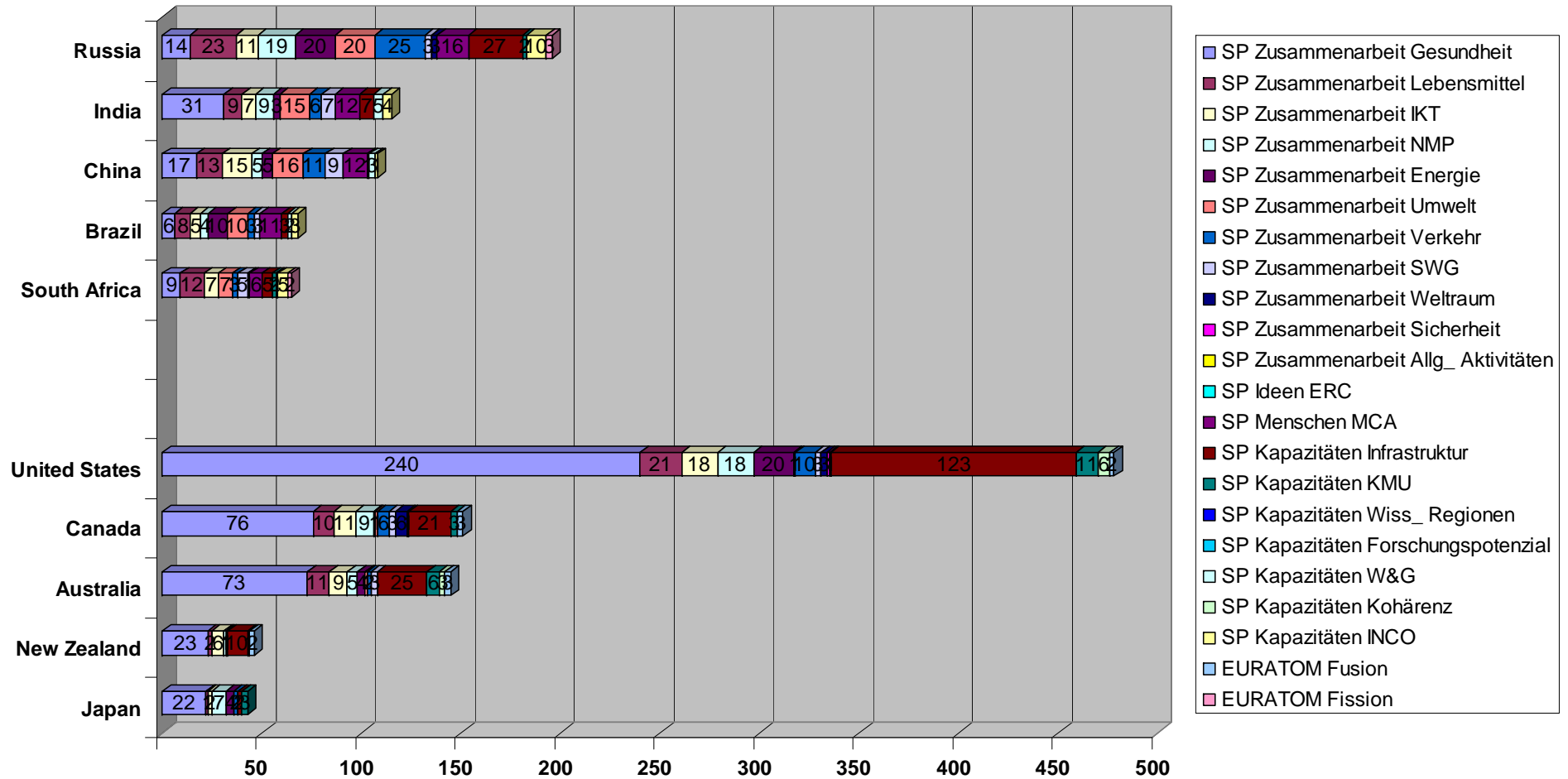
Collaborative links with	
Africa	84
South Africa	32
Kenya	7
Uganda	7
Asia	151
China	62
India	49
East Europe/ Central Asia	156
Russia	99
Ukraine	29
Latin America	96
Argentina	26
Brazil	20
Industrialised Countries	177
Australia	23
Canada	32
USA	74
Total Third Countries	717

Fields of German Cooperation with Third Countries

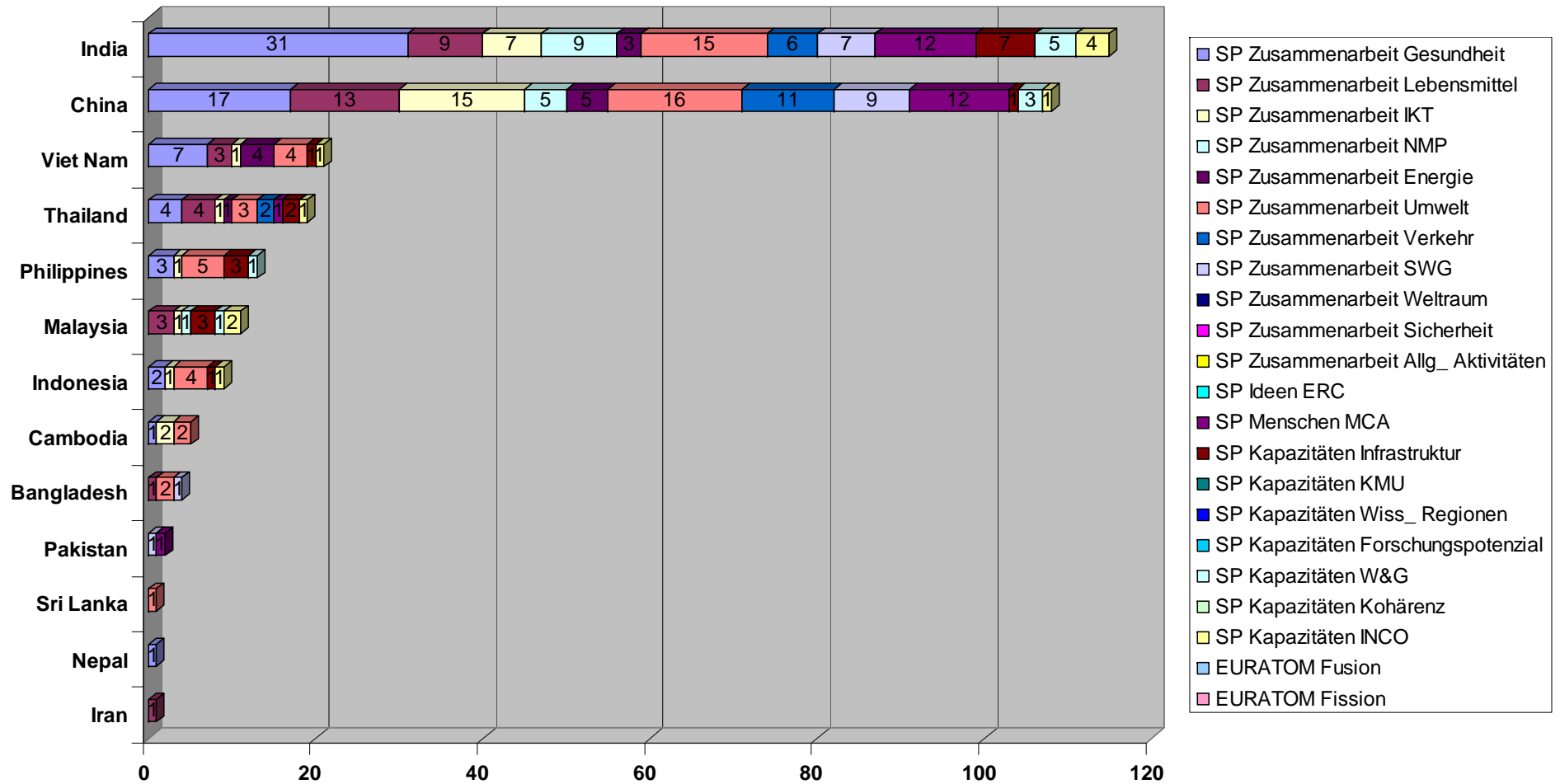
The prioritised fields of Germany's cooperation with third countries vary considerably from country to country. Most links are with

- Russia (99) in Energy (16), Health (9) and Transport (9)
- USA (74) in ICT (16), Health (11), Food, Agriculture, Biotechnology (11)
- China (62) in Health (10), ICT (9), Food, Agriculture, Biotechnology (6), Environment (6)
- India (49) in Health (20), Environment (5), Energy (3), Transport (3)
- South Africa (32) in Food, Agriculture, Biotechnology (6), Environment (4), Health (3) and Transport (3)

BRICS Länder vs. Industrialisierte Länder Beteiligung der Länder nach Themen



Asien Beteiligung der Länder nach Themen



Basic Observations and Assumptions, Ex. Asia

- **The Asian and Pacific countries share of the worldwide knowledge and innovation production is increasing rapidly (e.g. Bibliometry, Patenting)**
- **An Asian-Pacific regional integration in Research, Innovation and Education can be observed (Inner-Asian Copublication, Researchers Mobility, Direct R&D-Investment)**
- **This region is and will be the worlds third innovation area besides Northamerica and Europe (Bibliometry, Patenting and Competitiveness Report of World Economic Forum)**
- **The regional integration of the APRA leads to less cooperation with US, EU is still increasing (Bibliometry, Researchers Mobility).**
- **ASEAN is, although not yet comparable with China or Japan, an important part of this Asian-Paific Innovation Region (Competitiveness Report of WEF)**
- **Committment and success of Asia/Pacific in FP7 far better then average (FP-analysis)**
- **Germany is sharing the position of best of the rest – after US – with GB (combining data)**

Conclusions, ex.

- Sharing the gained knowledge with a broader public (not only in internal documents, see e.g. KI)
- Evidence based discussion of content, workflow and work condition within the Ministry and its agencies with regard to international cooperation (see Client).
- Work division of Dept. 2 (international Cooperation) and Thematic Departments
 - Dep. 2 concentrates on exploratory funds and (new) coordination funding
 - More and more bilateral funds with partner countries
 - Thematics are supported by better preconditions for large scale international coop.
- Development of new funding instruments (see latest calls)
 - Funding with developing countries (mobility)
 - Setting up innovatons hubs in developing countries with innovation potential (structures)
 - Increasing Germanys presence in top universities (coordination)
- Linking research project to implementing agencies like KfW or WB (support)