

International research cooperation: A university perspective

Paul De **Boeck**
Vice-president for research
K.U.Leuven, Belgium

Content

- Analysis of reasons
- Differentiations
- Implementation

1. Analysis of reasons

Laddering method

Quality reasoning

- Why cooperate internationally?
It improves the quality of the research.
- Is it the cooperation or its being international?
Cooperation is good and international is even better.
- Why is cooperation good?
- Why is international better than national?

Quality reasoning

- **Size**
Some problems require large-scale efforts, for example, CERN (high energy particle physics & nuclear physics)
- **Complementarity of expertise, access, conditions**
 - Some problems require a several types of expertise, for example, medical imaging, biomechanics
 - Access to study objects can differ
 - Conditions can differ (e.g., weather)
- **Mutual inspiration**
Diversity opens new perspectives, advantage for idea generation and idea checking

Economic reasoning

- Why cooperate internationally?
It increases the visibility.
It makes us stronger in comparison with the other universities in the country.
- Why is being stronger important?
To increase the share of national research funds.
To attract the interest of industry.

Status reasoning

- Why cooperate internationally?
It increases our prestige, and improves our ranking.
- Why are status and ranking important?
That is where it is all about in science and in other domains, being among the best.

Responsibility reasoning

- Why cooperate internationally?
We have a responsibility in the world, to solve problems that transcend the country, e.g., climate, AIDS prevention, provision of food. But, some are highly competitive.
- Where does the responsibility stem from?
human solidarity (value – responsible for others),
potentials of science (possibility),
in our own interest (value – responsible for oneself)

Recruitment reasoning

- Why cooperate internationally?
Larger pool to recruit from:
larger numbers, better chances to find top
quality

Five reasons, three values

- Size
- Complementarity/Mutuality
- Economy
- Recruitment
- Responsibility

Reasons/
strategies

- Increase of knowledge
- Internal PWW
- Humankind PWW

Values/
interests

2. Differentiations

type of country

levels of interest

cooperation vs competition

Type of country

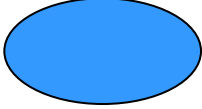
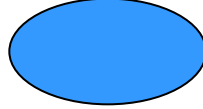
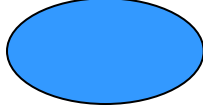

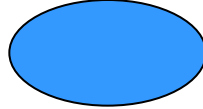
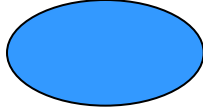










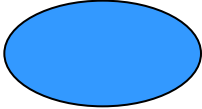
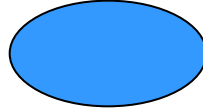
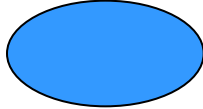
	Advanced industrial countries	Emerging economy countries	Developing countries
Size	XXX	X	X
Complement (various kinds)	XX	XX	XX
Economy	XX	XX	XX
Recruitment	X	XXX	X
Responsability	X	X	XXX

Levels of interests

Eventually, all reasons refer to interests

- World level
common interests of humankind
- International economic communities (IEC)
common interest of EU
- Countries
national interests of Flanders, Belgium
- Universities
local interests of K.U.Leuven, city, Leuven area

Collaborative vs competitive

	IECs	Nations	Universities
Complement (various kinds)			
Size			
Economy		 	 
Recruitment		 	 
Responsibility			

Black area

- International economic regions compete
 - countries compete and collaborate within IECs
 - universities compete and collaborate within countries
- How much and what kind of cooperation is good for the strength of one's own position?
three crucial issues:
 - competition for means (personnel, funds)
nomadic scientists good for EU, not for the universities they leave
 - intellectual property competition
 - economic competition

Higher-level institutes

A form of collaboration,
but as additional players, they are also
competitors

- National institutes
compete with universities
- EU institutes
compete with national institutes
compete with universities

3. Implementation at the K.U.Leuven

K.U.Leuven: Facts and figures

- 30,442 students
- 3,770 international students
- K.U.Leuven employs 8,017 people
- university hospitals employ 8,172 people
- research expenditures: 230 million euro
- 4447 researchers (of which 1227 seniors and 3220 juniors)
- 3,000 publications (in 2004) in international peer-reviewed academic and scientific journals
- 427 PhD graduates (117 by international doctoral students)
- 66 spin-offs

Strategy international cooperation

- Bottom-up
- Direct stimulation and support through programs, strategic and administrative support
- Indirect support through internal research capacity building, lever effects
- Minimal forms of co-funding

Implementation at the K.U.Leuven

	Advanced industrial countries	Emerging economy countries	Developing countries
Size	e.g., CERN, LERU		
Complement (various kinds)	fellowships bilateral agr/proj refereeing participation EU	fellowships bilateral agr/proj	bilateral agr/proj
Economy	IMEC		
Recruitment	research profs PhD students	PhD students	PhD students
Responsability			PhD, visitor prog special prog

- Big science facilities and initiatives
Belgian, FWO, & university contributions
– CERN, ESRF, EMBL, ESO, ILL
and
membership of LERU, Coimbra, EUA
- Fellowships FWO and BOF (university research fund)
for junior and senior visiting scientists, one or two years
- Bilateral agreements, Flemish government & BOF
projects of two years, long-term exchange contracts
- PhD students: scholarships for developing countries and
emerging economy countries
- Research positions for professors
- EU-projects: stimulation and support

IMEC

- since 1985
- 1350 researchers, mean age is 35,
212 PhD students,
1/3 of personnel is international (50 nationalities)
- patents in 2005
applications 90
granted 45
- budget 2005 is 197 euro
2/3 of funds are from industrial industry