



# Research and Innovation in a Global World

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# Why to cooperate?

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Why to cooperate with other countries in terms of research?

*"By their very **nature**, education, research and science have an **international dimension** ... So it should come as no surprise that today around 20% of all federal resources for the promotion of education, research and innovation go to international cooperation activities"*  
(Swiss International Cooperation in Research and Innovation)

*"International research organizations build **large research equipment**, which no one country could afford alone, and put them at the disposal of researchers"* (Ministry of Education and Culture, Finland)

# Priorities ... and Reciprocity?

It is not possible to cooperate with all countries, in all areas!

*"Selecting thematic and geographical priorities, setting up win-win cooperation and structuring partnerships"* (CNRS, France)

*"Cooperative projects with foreign partners are generally supported on the principle of reciprocal responsibility: those researchers working in Germany interact with the DFG, while their cooperative partners working abroad liaise with the funding bodies in their own country"* (DFG German Research Foundation)

*"to be a pioneer in establishing strategic cooperation with emerging countries in research and higher education"* (STINT - Swedish Foundation for International Cooperation in Research and Higher Education)

# And outside Europe?

It's a Small World !

*"The overwhelming U.S. dominance in scientific research in the last half of the twentieth century is being replaced by **a more multipolar landscape of science, technology, and innovation**" (Science & Diplomacy, USA)*

*"Fully involve industry, universities, and research institutes, so as to **complement mutual strengths and deliver win-win results** in the area of human resources, skills, technology, research infrastructures, finance of innovation, exploitation of research findings, entrepreneurship and framework conditions for innovation" (Joint Declaration of the European Union – China Innovation Cooperation Dialogue)*

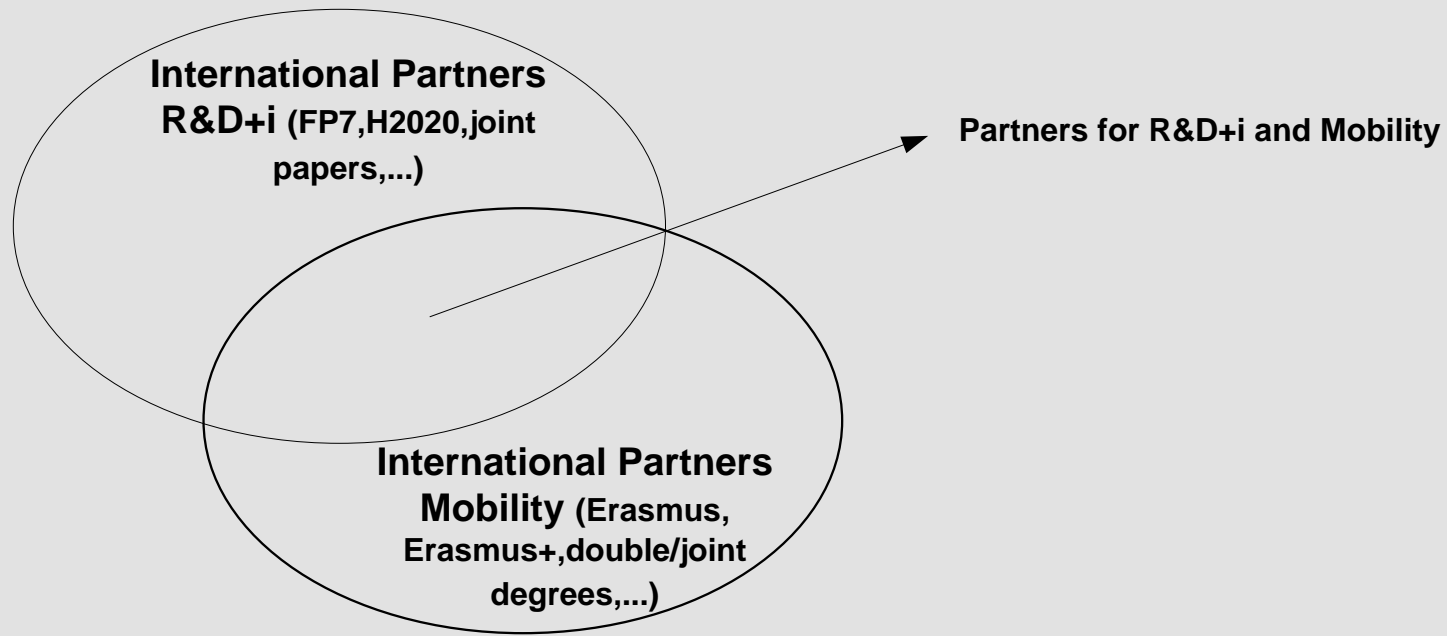
*"International Science & Technological Cooperation is performed by means of **mobility support to researchers for developing joint research, and high-level training of human resources**" (CNPq – Brazilian Council for S&T Development)*

# Some important aspects for HEI

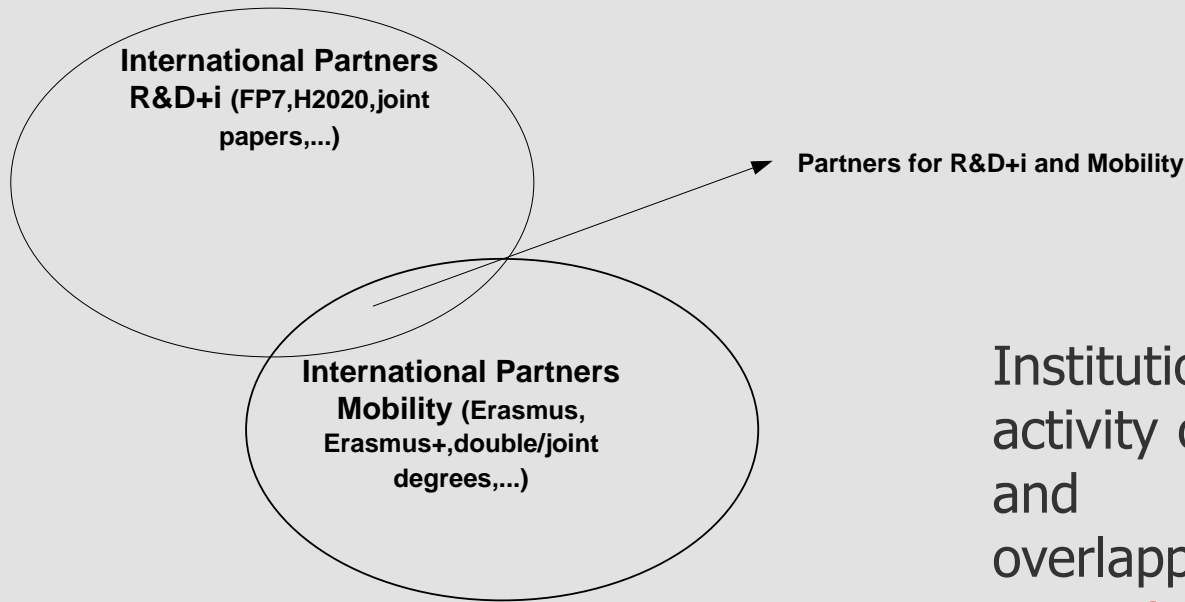
Three important aspects concerning International Cooperation for HEI:

- 1 – A close relationship between Internationalization concerning **Mobilities of the Learning Process** (Students/Teachers/Staff; Double/Joint Degrees) with Internationalization of **R&D+i**
- 2- International Cooperation and **Employability**
- 3 – **Intercontinental** Cooperation

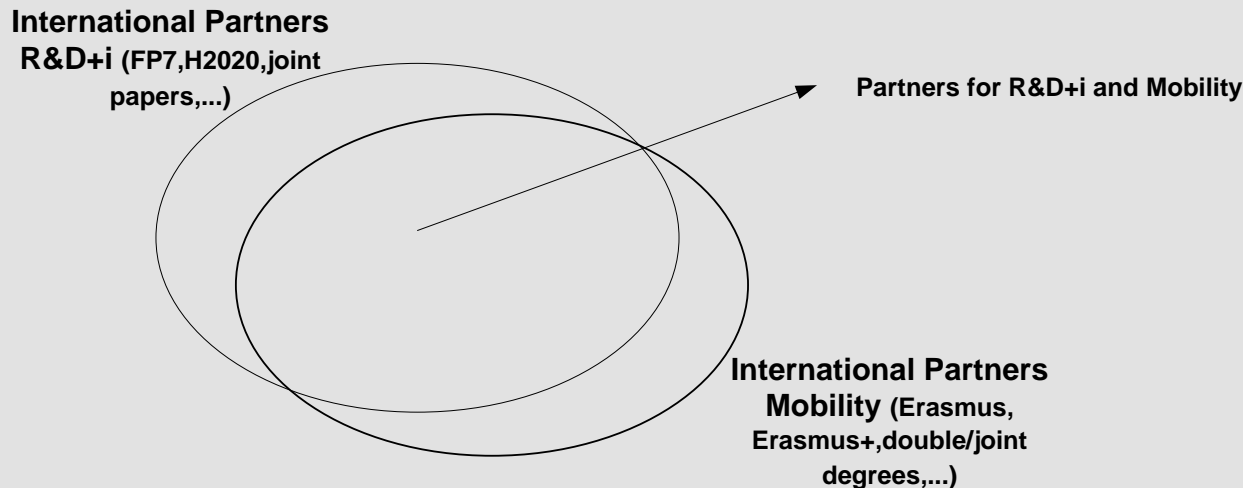
Internationalization of **R&D+I** and **Mobility** Internationalization are sometimes **two different worlds** in a HEI!

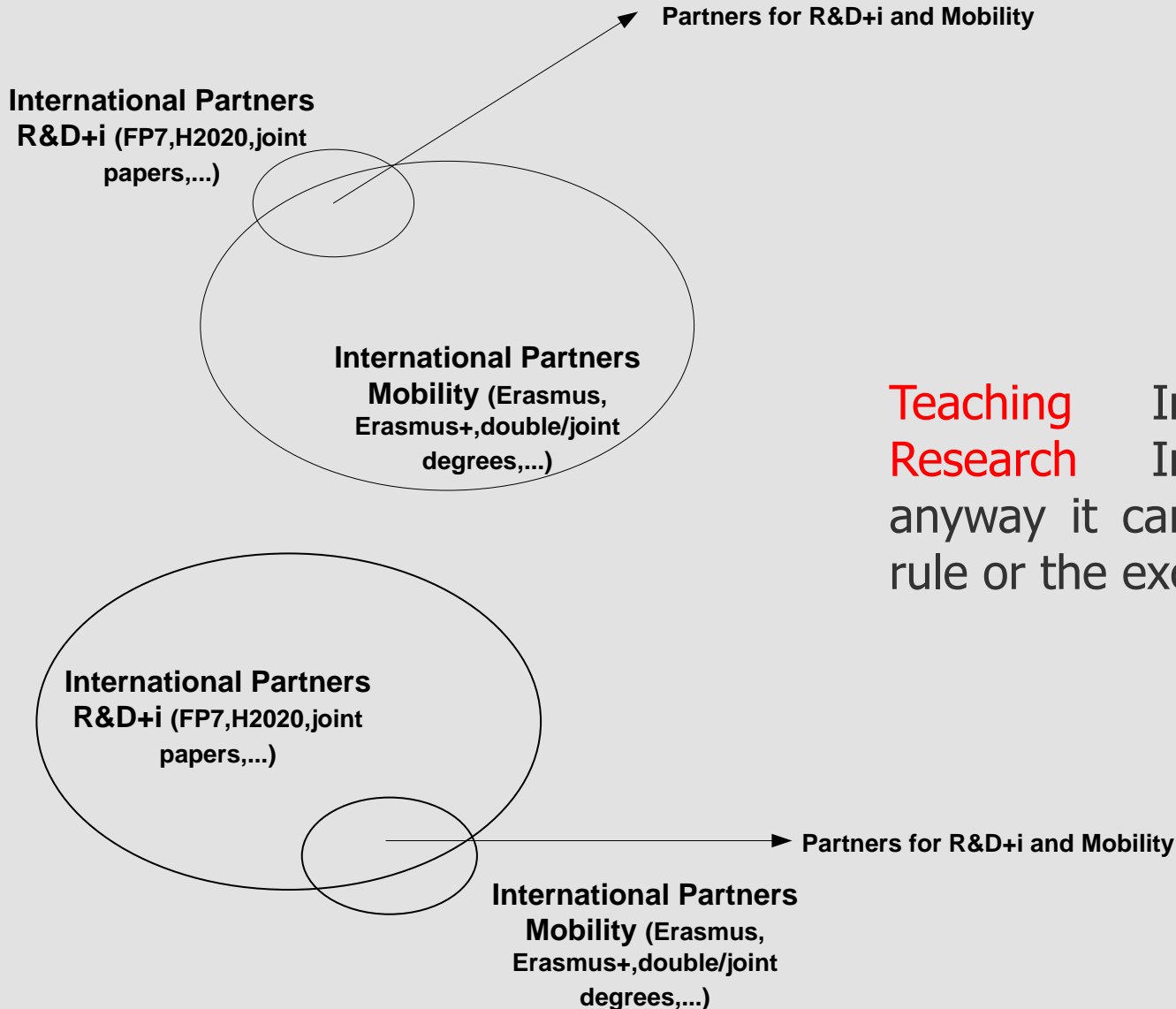


# R&D+i and Mobility



Institutions with balanced activity of Mobility for Learning and R&D+I, but the overlapping can be the **exception** or the **general rule**





**Teaching** Institutions and  
**Research** Institutions, but  
anyway it can be the general  
rule or the exception



Employability is today a main concern in the R&D+i field

Big Economic areas are trying to attract some of the most promising and brilliant researchers

- Brain Drain

Some countries created special programmes to attract researchers

...

But Employability is today also a main concern in Mobility of students, e.g. internships are being emphasized in Erasmus+ Programme

In the past EU R&D+i Framework Programmes were too focused in European cooperation

However the World has no frontiers, and several International agreements were signed between EU and other countries (USA, China, Republic of Korea, Japan, Australia, Brazil, ...)

Some programmes allow the cooperation between EU and other regions, with interesting budgets

Sometime it is complex to find a balanced budget from the two parts of the Consortia

## The Polytechnic of Porto coordinates 4 Projects for the Mobility of Researchers

### -3 IRSES Projects (Marie Curie Actions, FP7)

- ELECON (Energy Efficiency and Electricity Markets) involving Portugal, Germany, France and Brazil
- GMOsensor (Biosensors) involving Portugal, Spain, France, Brazil, and Argentina
- EKRUCAmI (Ubiquitous Computing and Ambient Intelligence) involving Portugal, Spain, and Republic of Korea

### -1 RISE Project (Marie Curie Actions, H2020)

- DREAM-GO (Smart Grids) involving HEI and companies from Portugal, Spain, Germany, and USA