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Smart specialisation in a truly integrated research area is the key to attracting more R&D to Europe

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There are concerns expressed at different levels in Europe about the increasing numbers of European companies which are basing their R&D operations outside Europe, at the same time as the number of overseas companies carrying out their R&D in Europe is falling. This phenomenon of the "internationalisation" of R&D does not necessarily have to be negative for Europe, say an influential group of economists, who advise the European Science and Research Commissioner, Janez Potočnik. But they say that if Europe is to benefit from the increasing trend towards R&D being performed internationally, it has to make fundamental changes to the way in which R&D is organised there. The creation of truly European centres of excellence will be of more benefit in the long run than each individual country having low-level expertise in a full range of scientific areas.

R&D has become a global game. There is a perception in Europe, borne out to some degree by recent surveys, that European companies are increasingly looking outside Europe for their R&D, and overseas companies are less and less inclined to base their R&D in Europe. Studies by the OECD and other international organisations show that between 1995 and 2003, there was an increase in US R&D investment in countries like China and India, at Europe's expense. Surveys about European and US managers' anticipations of their next location decisions tell us the same story (see figure 1.)

Decisions about where to base research capacities are primarily made according to the availability of new ideas and technologies, highly skilled

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human resources and academic collaborations. While these resources are increasingly flexible and mobile, where they move is far from random. Star scientists will move to where they can work with other star scientists, or with high-tech firms. Corporate R&D will gravitate to strong universities. Innovation service providers will appear close to large R&D companies. This is called an *agglomeration* process, and it gives rise to benefits for those participants that are in a position to profit from the pool of talents, ideas, services, and infrastructures that accumulates in that particular region. This in turn acts as a powerful force in attracting new R&D capacities from foreign countries.

Therefore, if Europe is to be a serious competitor in the global game of R&D location, policies need to be adapted to those rules of the game. There are two main areas in which Europe is hampered in its efforts to attract international R&D.

Firstly, the fragmentation along national lines is a brake on the process of creating world-class centres of excellence. It has prevented a more natural development, through agglomeration, of centres of excellence. If allowed to flow freely across national barriers, the best resources in a particular field would naturally find each other and create a centre of gravity.

Secondly, there is a tendency across countries and regions in Europe to look to emulate what successful regions or countries do, instead of trying to find an original area for expertise. National and regional public policy has overemphasized new science-based leading edge industry in an unimaginative way, resulting in an enormous uniformity of national knowledge bases. This then leads to the spreading of resources and the creation of sub-optimal centres, which cannot compete internationally.

The question is, how many centres of excellence in, for example, biotechnology can Europe afford? There is a high risk of wasting resources if all Member States compete in the same area in an uncoordinated way. Limited resources may be spread too thinly to allow excellence to emerge or it may cause unnecessary duplication of projects and programmes. In a Europe of 27 countries, most of which can be considered "small", a model involving national development of scientific expertise across the same sort of areas is likely to be inefficient. Equally, the wide-spread use of local tax credits and other subsidies aimed at promoting the formation of R&D-intensive clusters are likely to hinder the agglomeration process. This in turn means Europe is not reaping the economic benefits of these agglomerations.

What is needed instead are mechanisms for finding original and new areas of expertise. There are benefits to be gained for the whole of Europe in moving towards an R&D system based on greater European-wide specialisation. Without it, Europe runs the risk of losing the international R&D it hosts at the moment, without attracting new investment to replace it.

The suggestion is therefore that:

- European policy is adapted to allow the emergence of world centres of excellence, created across national boundaries, thereby accessing the most appropriate technical and human resources.
- A more integrated European Research Area is put in place, so that R&D resources that cannot compete at international level are not sheltered by national systems and policies. By allowing the agglomeration process to occur, different centres of gravity will emerge. This can only be done within an integrated research space in which mobility and competitive entry are the main characteristics.
- The European Research Area will only benefit those countries and regions that have clear visions and strategies as to how they can develop distinctive, original, modern areas of specialisation for the future. The economic importance and science and technological development of the region will dictate how broad or narrow this specialisation should be.
- Regions targeting the same kind of specialization need to cooperate and coordinate their investment plans to allow for the emergence of a critical cluster able to attract further R&D capacities from foreign countries.

A particularly good example of this approach is the project BlueBioNet which stimulates regional development in maritime regions.

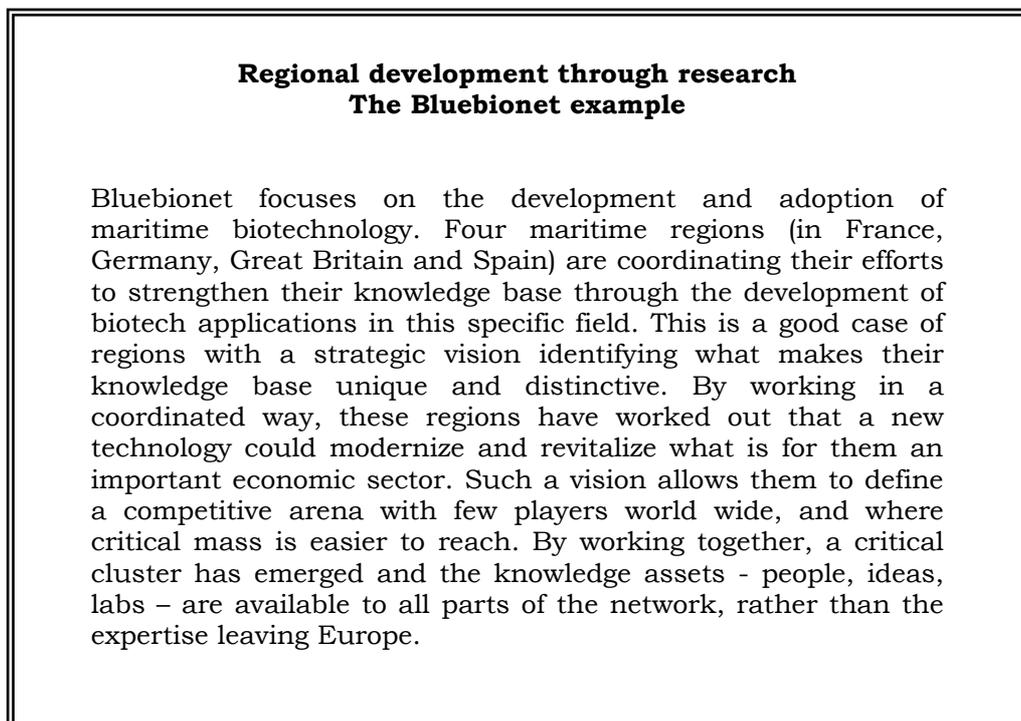
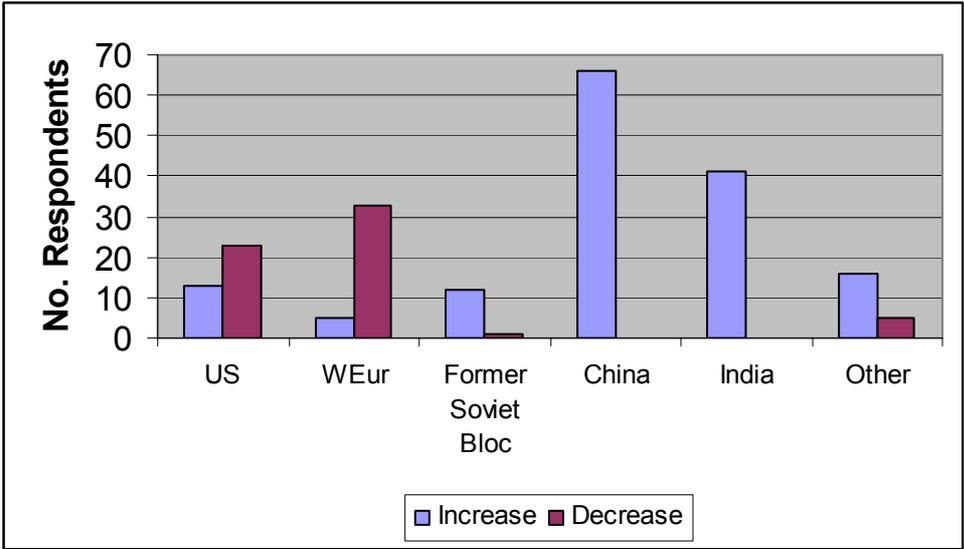


Figure 1



A strong majority of respondents (based in US or in Europe) anticipate increasing their technical staff in China and India while a vast majority of respondents anticipate decreasing their technical employment in Europe.

Source: "Here or There? A Survey on the factors in Multinational R&D Location", J.Thursby and M.Thursby, National Reserch Council of the national Academies, Washington D.C., 2006