

International Research and Collaboration

Internationalisation and international standing are increasingly major issues for research institutions and for governmental R&D policies.

Many factors are behind the need to enhance recognition and reputation at an international level, the most important being:

- strong competition for both human and financial resources;
- the globalisation of the economy influencing also research and development in different institutional contexts, and;
- new forms of knowledge dynamics within traditional and emerging new fields, increasingly taking place in the international arena.

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Expressed in a slightly different way, the literature highlights several rationales for policies toward internationalisation, which can be summarised as follows:

- strengthening research excellence and innovation performance through enlarging the pool of participants for collaboration and/or for getting complementary expertise (critical mass, complementarities);
- enlarging the attractiveness of the R&D system in order to better the capability to compete in the global market (enlarging the innovation network);
- responding to global problems, positioning the country in the wider community fostering common ideas and values (global coverage).

*Taken from "Indicators of Internationalisation for Research Institutions: a new approach"
A report by the ESF Member Organisation Forum on Evaluation: Indicators of Internationalisation (2013)*

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From the institutions' point of view, internationalisation may also be represented (measured) through its impact on three main processes and thus influence decision making:

- funding flows from/to international agencies;
- collaboration and networking patterns between non-national institutions, groups and individuals;
- international co-production of knowledge (publications and technological outputs).

These three measures of consideration can be represented by the apexes of a triangle – next slide

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Indicators of Internationalisation

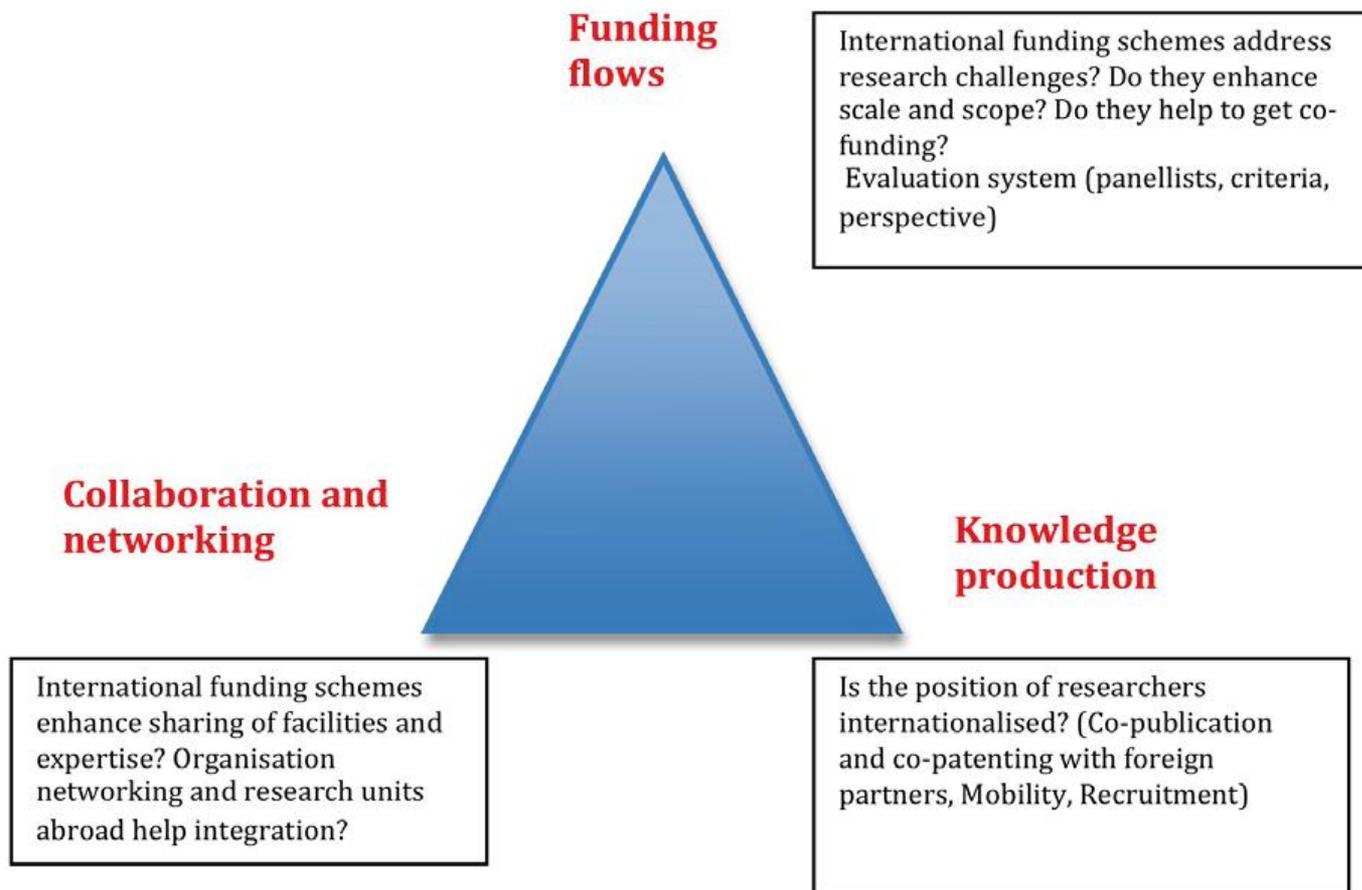


Figure 2. The three dimensions of activity impacted by the internationalisation process and can be used as measure of contribution

Indicators of Internationalisation for Research Institutions: a new approach

A report by the ESF Member Organisation Forum on Evaluation: Indicators of Internationalisation

Citation impact: UCT international collaboration

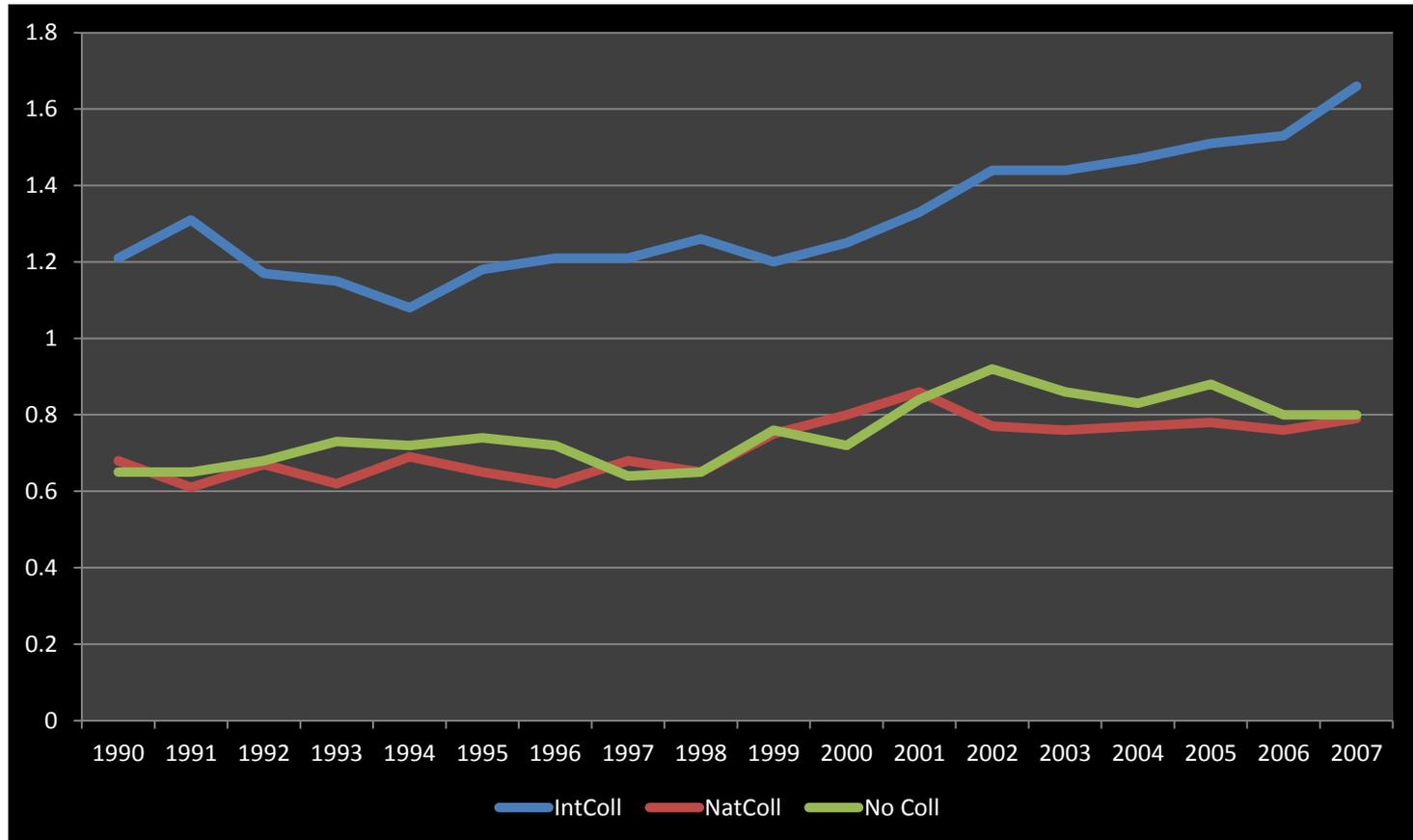


Figure 20: Average citation impact scores for paper by collaboration type (1990 – 2007)

20 benefits of collaboration as a researcher you cannot afford to ignore

from: Scott Wagers (2013)

- **Higher impact publications:** There is a direct correlation between the number of authors and impact factor (increased citations). This is in part a reflection of the fact that good science requires the combined efforts of many good scientists. People cite the work of those they know.
- **More creativity:** Collaborations tend to encourage mixtures of people who know each other and those who don't, and such mixtures have been shown to be more successful.
- **Future:** Collaborations are always filled with potential. Those you collaborate with today will think of you tomorrow when they are putting together a R20 million grant proposal.
- **Less work:** When done well, collaboration means less work for everyone without compromising on results.
- **Criticism:** Collaborators are more likely to tell you that in reality you are not wearing any clothes. Debating ideas is also important for creativity and reality checks

- **Ability to bring more experience to bare:** Once you have conceived the idea for a project, the work becomes a series of problems you have to solve. Tapping into the distributed intelligence of a group increases your chances of solving problems more efficiently.
- **Efficient learning:** Papers, books, SOPs tend to tell you how to do something, but don't give you a sense of what it is to actually do that something. Seeing how a team of experts solves a problem is the best learning that there is.
- **Wider array of techniques:** Within any given lab group, department or institution there are only so many techniques available to answer the scientific questions that interest you. Collaboration makes all techniques available.
- **Deeper research:** In a collaboration you are forced to do more than clip the top of trees....
- **Funding:** Getting funding is typically much easier in the context of a collaboration. Funding agencies believe in the power of collaboration, so should you.
- **Increased number of publications:** Related to above, the deeper the research the more publications. Plus, your work is less likely to be a one hit wonder when you already have a whole group of people working on the same topic.
- **Students and post docs:** There is no better way to find good students and staff than networking. There are no better and more concrete networks than the networks that are built through collaborations.

- **Patents:** In this day and age the increasing complexity of research technology and the explosion of measurable variables require multi-faceted approaches that can only be achieved in collaboration.
- **Higher likelihood of having a spinoff:** Similar to the above, its unlikely that working on your own you will know enough or have the ability to create a spinoff company.
- **Fun:** It is no fun to party on your own. The same is true for research.
- **Knowledge of what others are doing:** You can read papers or look at patent filings, yet there is no better way to know what others are doing than talking to them. In research it is always best to be, and know, where everyone else is.
- **Less risk:** There are many more degrees of freedom with a collaborative network than there are with a single lab following a single line of research. Risk mitigation is much easier when you have a whole group to draw upon.
- **Agility:** When you are working in a collaborative network and you come across an unexpected finding, it is far more likely that you can exploit that finding in the setting of a collaboration.
- **Early adopters:** Your collaboration partners are almost by definition the early adopters for your novel approach, new technology, or new hypothesis. You can also think about it as the best way to foster paradigm shifts. It all begins with a dedicated group of core believers.
- **Impressing investors:** There is no better argument for convincing funding agencies that what you are doing is accepted by a group of leaders in the field.

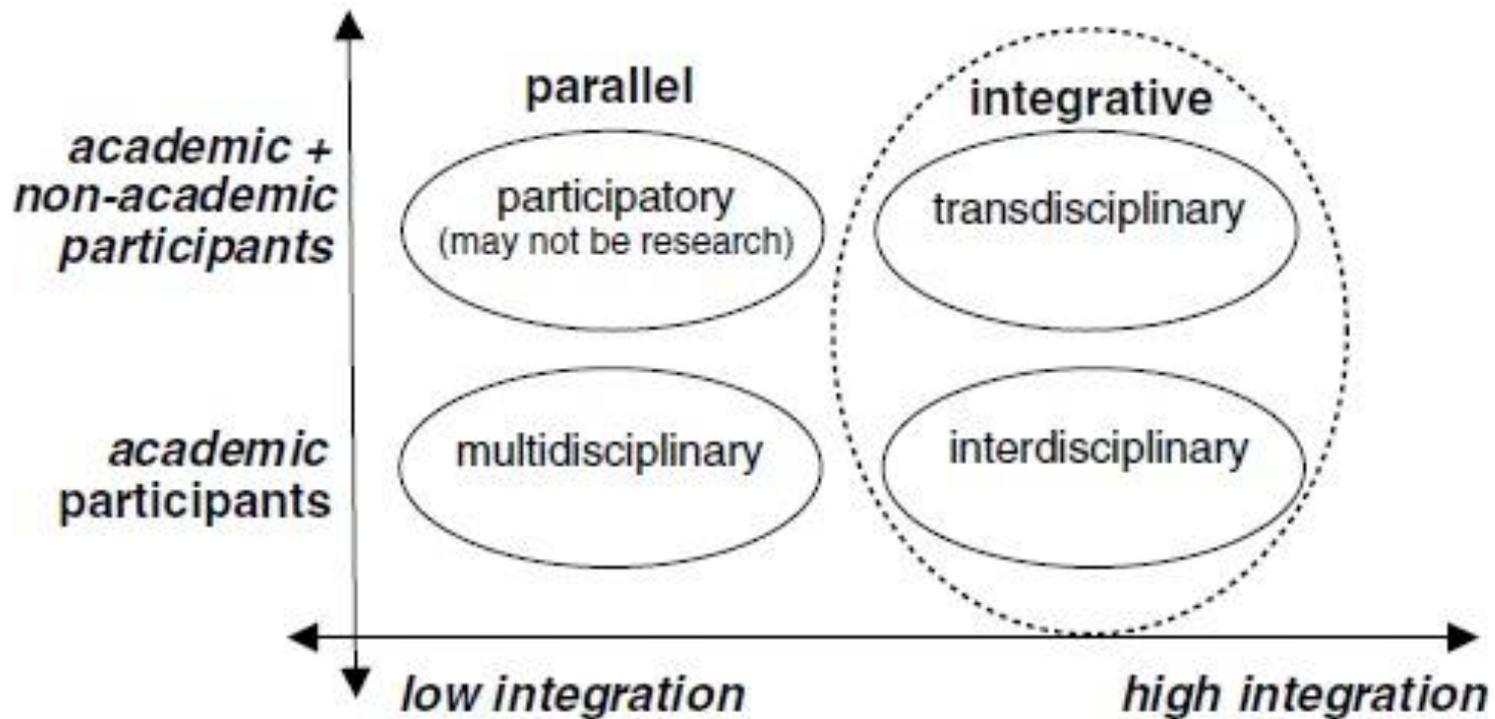


Figure 2. Degrees of integration and stakeholder involvement in integrative and non-integrative approaches.

From: Gunther et al. 2005. Transdisciplinarity & clarifying integrative research concepts Landscape Ecology (2004) 20: 479–493