

Lessons on interdisciplinary research

Converging egos

In solving complex problems involving many different stakeholders, interdisciplinary research is indispensable. But cooperation between disciplines is not always easy. Since 2000 Wageningen University has funded a series of interdisciplinary research programmes. This article looks at the lessons that have been learned.

By **Joris Tielens**

Fertile soils, forests, fisheries, wild animals and sources of energy – these are just some of the rich natural resources in Southern Africa. But not everyone has the same intentions regarding the use of these resources, giving rise to conflicts of interest at all levels. Across large areas of Botswana, Mozambique, South Africa and Zimbabwe, for example, the rural poor depend on access to land for their survival. But the national governments are keen to develop these areas as nature reserves, as they provide a substantial source of income, generated by the thousands of tourists who visit them each year. Meanwhile, international efforts focus on conserving the biodiversity of the reserves and limiting their use, and private companies are trying to optimize exploitation of resources for the production of marketable goods. Because these different stakeholders lay claim to them, natural resources are often sources of conflict.

That is why ‘Competing claims on natural resources’ is the logical title of one of a series of interdisciplinary research programmes funded by Wageningen University’s Interdisciplinary Research and Education Fund (INREF). In the programmes in Southern Africa, 11 PhD students are working on an interdisciplinary methodology designed to increase understanding of the various claims to the region’s natural resources, and to propose alternative, more equitable management options. The objective is to help ensure that negotiations between the conflicting parties will result in solutions that satisfy all the various interests.

Within the programmes, animal and crop scientists, resource ecologists, foresters and soil experts are working together with development sociologists, communication specialists and development and environmental economists. Research from only one of these perspectives would probably produce only a partial solution to part of the problem.

Cooperation between different disciplines is notoriously difficult, however, and has been the subject of heated discussion in

Interdisciplinary Research and Education Fund (INREF)

Wageningen University has a long tradition of agricultural and land-use research in the tropics, in which the viewpoints of various disciplines are taken into account. Since 2000, the Interdisciplinary Research and Education Fund (INREF) has been used for development-related programmes that offer opportunities for researchers and PhD students from developing countries, and encourage cooperation with their home institutions.

The first round of six INREF programmes was completed in 2005, the second round of four programmes is now under way, and a third round of four-year programmes is planned. In each programme, most of the research is conducted by ‘sandwich’ PhD students from developing countries. They do fieldwork in their home country for two or three years, in collaboration with their universities, NGOs or research institutes. So far almost 100 researchers have participated in the INREF programmes.

For more information, visit www.inref.wur.nl.

Wageningen for many years. Interdisciplinary research is time-consuming, because it requires that people with different academic and scientific backgrounds come together and tries to reach a common understanding.

Evaluation

To learn lessons from the past, the first INREF programmes, which started in 2000, were recently evaluated by an external committee of leading scientists. The committee concluded in July 2007 that a common conceptual framework adds much to the interdisciplinarity of the programmes. A great deal has been done, the committee acknowledged, but advised that more emphasis on this framework would help to integrate and bind together the individual research projects. The initiators of a research programme, who come from different disciplines, must agree on the aims, structure and approach of the programme long before it starts. They should therefore not only draw up a joint

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conceptual framework and develop a common language, but also define the problem and the hypotheses together. The choice of research topics, locations and partners must not depend on networks that happen to exist already, but on conscious choices that fit with the joint conceptual framework. The ultimate objective is better integration of the research results, which will in turn enable joint publications.

The evaluation committee agreed that this is probably a little too much to ask of a programme in which most of the research is conducted by PhD students who are just beginning their careers and have yet to prove themselves in their chosen discipline. Interdisciplinary research is probably not their first priority. The committee therefore recommended that alongside the research work by PhD researchers, new INREF programmes should create more opportunities for cooperation between postdoctoral students, supervisors and professors so as to improve the integration of research results.

In the second round, according to Competing Claims programme leader Professor Ken Giller, more attention is now focused on developing a joint conceptual framework than in the earlier INREF programmes. 'The first ideas for the Claims programme, which started in 2006, were launched in 2003. Since then, a small group of initiators has met monthly to discuss the structure and design of the programme. The academics and the 11 PhD students involved also meet each month to exchange thoughts and ideas'. As far as personal supervision is concerned, instead of the students and their supervisors meeting separately, they now all meet together. 'This is because the supervisors also have to learn from each other, while the students can learn a lot from them about the learning process itself', says programme manager Maja Slingerland.

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Dream team

All that investment in time has resulted in a strong interdisciplinary research team, says Giller. 'I now have a dream team of scientists, who can move ahead at full steam'. Giller has learned a number of lessons, which she sums up in a few simple rules about the culture of successful collaboration: 'Use simple, plain language. Everyone must look for the simplest words. That means not trying to make yourself seem important. Some people think they are very important and try to prove it by hiding behind jargon. If you want to work in an interdisciplinary environment, you have to be prepared to put your ego to one side'. That humility must be inspired by respect for others, says Giller: 'The desire to learn must be bigger than your ego. And I don't want to hear any criticism without an alternative. That is a rule that saves a lot of time in meetings'.

Suzanne Nederlof has also learned these lessons. Although she now works at the Royal Tropical Institute (KIT) in Amsterdam, Nederlof was previously a researcher with the Convergence of Sciences programme in West Africa, one of the six programmes in the first round of INREF. 'As a researcher, whether you want to work with colleagues from other disciplines or with farmers, you have to surrender some of your power', she says. Knowledge is power, and anyone who wishes to do interdisciplinary work must be prepared to admit that they do not know everything. 'You have to admit that you need others, and allow them to become part owners of your research', she says. The aim of the Convergence of Sciences programme was to help agricultural research in West Africa respond better to the needs of farmers. In addition to fostering cooperation between disciplines, it involved working with farmers in what Nederlof refers to as 'transdisciplinary' research. PhD students exchanged ideas and conducted field tests with farmers to develop methods to enable them to conduct research together on equal terms.

In addition to the organization of a research programme and the research culture, external influences play a role. As is the case in many graduate schools, Wageningen University is divided into science groups structured along disciplinary lines. As a consequence, the INREF programmes are an island of interdisciplinary thinking within the university. Another factor over which the research group itself has little influence is that academic and scientific publications tend to be discipline-oriented. That can make it difficult to publish interdisciplinary research and, as publication carries a lot of weight in the academic world, it can mean a loss of status for interdisciplinary researchers. Genuine interdisciplinary researchers, however, may not be so interested in that sort of status. If Giller is right, genuine interdisciplinary researchers do not have large egos and are predominantly interested in understanding and solving complex problems. ■

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